



03

Innovation

03/01 technological innovation model

Innovation is one of the key transforming elements in the Telefónica Group

INNOVATOR CLUB

1,049

ideas channeled through Idealab

03/02 innovation in the Telefónica Group

Telefónica applies OECD criteria to determine its investment in R+D+I

TECHNOLOGICAL INNOVATION

2,398

millions of euros in 2004

03/03 Telefónica I+D

Telefónica I+D is the primary innovation agency in the Group, with presence in Spain, Brazil and Mexico.

1,660 projects
1,271 professionals
240 new products

03/04 Innovation results

The goal of technological innovation is to make the best possible solutions available to meet our customers' needs

NEW PRODUCTS AND SERVICES IN SPAIN

255

03/05 information systems

These provide support and a competitive advantage to corporate business processes

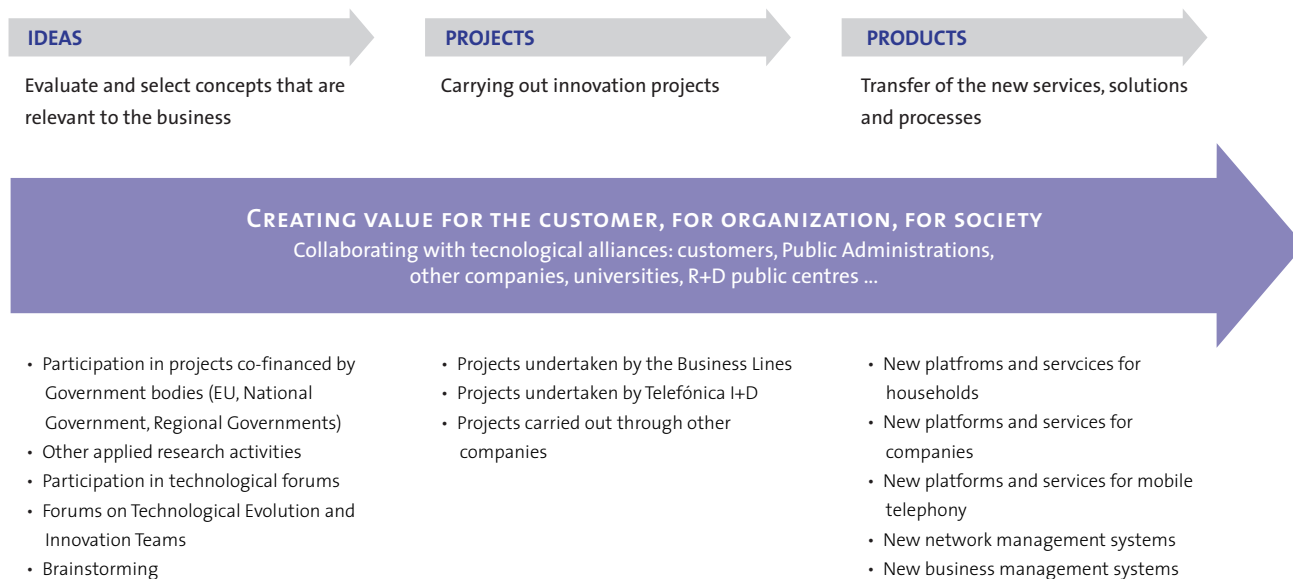
AVAILABILITY OF APPLICATIONS

99.8%

Telefonica

Trust is the result of applying all our technological capacity to the innovation of products and services that improve quality of life for our customers, and thus, for all of society

SCHEME OF TELEFÓNICA'S INNOVATION PROCESS (03-1)



GOALS OF TELEFÓNICA'S NEW INNOVATION MODEL (03-2)

- To align Technological Innovation with the Group's strategy, anticipating new solutions that differentiate it from its competitors.
- To promote collaboration with the Public Administrations and Universities to foster innovation.
- To encourage collaboration with other agents in the value chain and strengthen business alliances.
- To improve the Group's competitiveness through Technological Innovation focusing on the needs of its customers and the provision of solutions.
- To promote an innovation culture at all levels of the organization.

01 TECHNOLOGICAL INNOVATION MODEL

For Telefónica, innovation lies at the heart of what is transforming the Group and inspiring it to reach its goal of becoming not only the best, but also the biggest integrated telecommunications group in the world. It is precisely because Telefónica sees innovation as a medium and long-term strategic value that its investment and commitment to technological innovation, and to R+D in particular, continues firm, as the data presented in this section will show.

Telefónica will continue to increase the pace of the launch of new services that will promote access of different sectors in the countries where it is present to the Information Society. To do so, the regulatory frameworks must allow planning for investment in technological innovation and R+D activities at the medium-term, without adding "regulatory risks" to the many others inherent in R+D+I investment (market risk, technological success, competitive environment ...)

In 2004, Telefónica set up a new *Technological Innovation Model* that is in line with the

Group's strategy. The implementation of this Model is led by the *Corporate Innovation Committee*, comprised of the top executives of the main innovation organisations within the Group, which coordinates Telefónica's Innovation Programme and manages the Group's Portfolio of Technological Options.

This Model also promotes collaboration with other agents that will become *technological allies* (customers, Public Administration, suppliers, other companies, etc.), as well as the participation of the professionals within the *Group in the process of innovation*. In this respect, Telefónica de España's *idealab!* Contest received a total of 1,049 ideas (19% more than the previous year) during the whole of 2004 through its *Innovator Club*, while Telefónica Móviles de España's *Patent-Factory of Ideas Contest* (known as *Patenta-Fábrica de Ideas*), gathered 310 new proposals throughout the year.

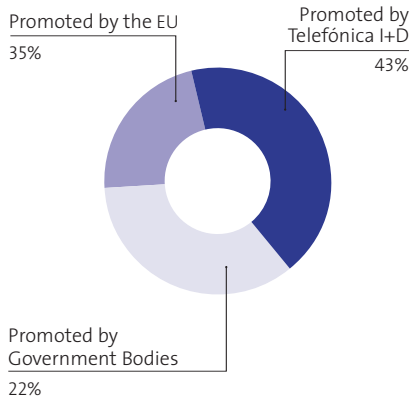
02 INNOVATION IN THE TELEFÓNICA GROUP

In 2004, Telefónica earmarked nearly 2.4 billion euros for Technological Innovation, following OECD criteria, of which half corresponded to

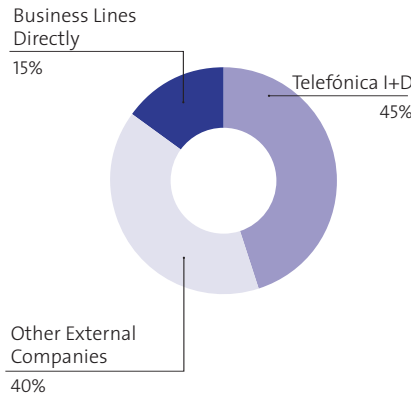
TECHNOLOGICAL INNOVATION IN TELEFÓNICA 2004 (03-3)



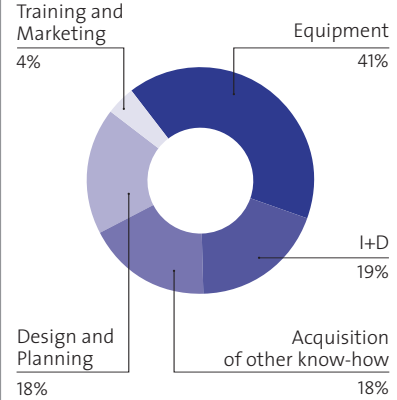
Telefónica I+D Research



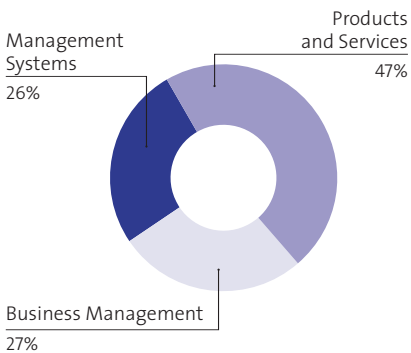
Who does it?



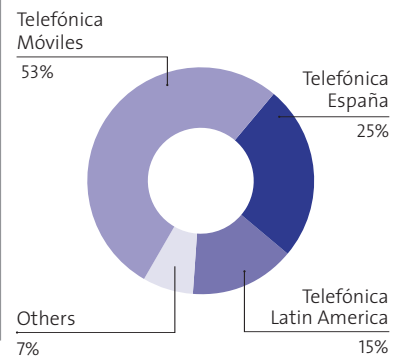
Breakdown by Items



Development of software for new products and management systems



Breakdown by Business Lines



Spain, and the other half to Latin America. By item, the acquisition of equipment, and research and development activities were outstanding, representing 41% and 19% respectively of the investment.

Telefónica Móviles is the Group company that proportionally invests the most in innovation as a result of the deployment of its new generation networks. Its activities encompass 53% of the Telefónica Group's innovation budget, followed by Telefónica de España and Telefónica Latinoamérica with 25% and 15% respectively.

Telefónica is the Spanish firm that devotes the largest investment to research and development. Thus, last year over 305 million euros were allocated for R+D in Spain, and 461 million euros in the rest of the world. This latter figure represents 1.52% of the Group's revenue.

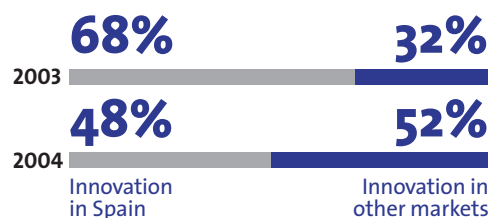
In 2004, the percentage of Telefónica's investment in R+D with respect to revenues in Spain (1.7%), was clearly higher than the percentage of R+D with respect to the total GDP of the country (1.1%), which clearly

evidences Telefónica's contribution to the promotion of Spanish R+D.

In 2004, Telefónica increased its investment in innovation in Latin America from 599 to 1,234 million euros, which represented over 50% of the innovation in the Group. By countries, Brazil was first with 29%, followed by Argentina with 6%, Mexico with 5%, Chile with 4% and Peru with 3%.

The R+D activity carried out in 2004 by Telefónica involved 5,901 people from all over the world, 3,996 of them in Spain, of which

TELEFÓNICA INVESTMENT IN TECHNOLOGICAL INNOVATION (03-4)



CASE STUDY

MEASURING INNOVATION BY OECD CRITERIA (03-5)

The Organization for Economic Cooperation and Development (OECD) carried out a series of studies to draw up useful indicators for innovation. These studies produced what are known as the *Frascati Manuals for R+D* and the *Oslo Manual*, for innovation in general. In keeping with the aforementioned manuals, the concept of innovation refers both to the end product and to the process in itself.

- In terms of the results, technological innovations encompass both products and the significant technological processes of the same. An innovation is envisaged as such when it is launched on the market (product innovations) or used in a process for the production of goods or the provision of services (process innovations).
- In terms of the process, innovative activities that lead to the development or introduction of technological innovations are the research and the technological development (R+D), the acquisition of tangible and intangible technologies for innovation, the industrial design and engineering and planning activities, the commercialisation of new products.

Thus, the innovation figures published by Telefónica include the following items: i) Internal R+D costs, ii) External R+D costs, iii) Expenditures for the acquisition of machinery and equipment related to the technologically new or improved products or processes, iv) Cost of technological know-how, v) Expenditures in industrial design and engineering, planning of services and their launch, vi) Training costs related to the new or improved technological products or processes, vii) Commercialisation of new or improved products.

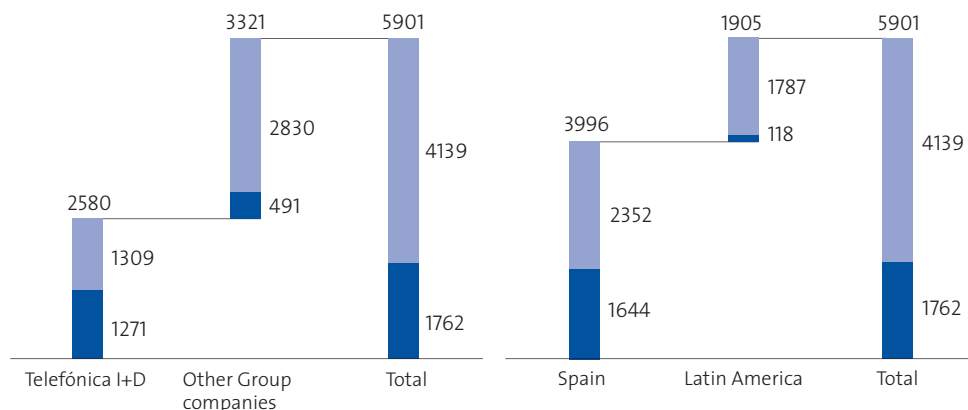
According to the OECD, R+D activities are creative work carried out within the organization, undertaken systematically to increase the knowledge that allows us to develop new products or processes or to improve the existing ones. The results of the R+D may be protected by industrial or intellectual rights. When these activities are undertaken internally or outsourced, we speak of internal or external R+D. In either of the two cases, the promoting company bears the costs and holds the industrial or intellectual property rights to the result. The following are not envisaged as R+D activities: education, collection of data of a general nature, ordinary standardization work, routine tests, administrative and legal tasks related to patents and licenses, routine *software* development activities, etc.

TELEFÓNICA PARTICIPATION IN EUROPEAN PROJECTS (03-6)

Project	Goals of the research
Biosec	Biometry research that enables recognition of persons and verification of their identity from physiological features: facial or iris images, voice, fingerprints, handprints, etc
Euro6IX	Contribution to the development of the new generation Internet in Europe (IPv6 Network).
TEAHA	Its goal is to define and develop an open platform for home domotics allowing the inter-operation of control and multi-media applications in a transparent and secure manner.
MEDSI	Seeks to create a computer system for aid in crisis situations such as terrorist attacks, floods, accidents, etc. This would enable the preparation of action plans and coordinate resources to mitigate the consequences of the crisis.
QUAR2	Its goal is to research and develop a system that allows end-to-end quality control in IP voice and video communications in heterogeneous networks. One of the practical results is that users who wish to establish broadband voice and video communications will always have the maximum quality offered by the network, as the system controller will be able to suitably manage all the network resources and end-to-end communications.

JOBS CREATED BY TELEFÓNICA'S I+D ACTIVITY (03-7)

■ Direct Jobs
■ Indirect Jobs



1,762 were Group employees, and the rest from businesses and entities that collaborate in development projects.

03 TELEFÓNICA I+D

The majority of the R+D activity is undertaken by Telefónica Investigación y Desarrollo, owned 100% by Telefónica, which works mainly with Telefónica's business lines and participates in other research projects, both at national and international levels. Its mission is to contribute to the Group's competitiveness through technological innovation, while keeping in mind that the results of R+D should be a competitive value for the operators that is transferable to the customer.

In 2004, Telefónica I+D worked on 1,660 projects, which involved, in addition to 1,271 of its own staff (94% of them university graduates), approximately 42 collaborating companies, and 23 universities that encompassed a total of 1,300 people. As an illustration of how the Group shares its know-how with society, 259 publications were released, including articles, books, conferences, etc. In addition, Telefónica I+D patented some 240 new products during the last financial year.

In 2004, Telefónica I+D set up a new company in Mexico, which shares the mission of supporting technological innovation in the Group companies operating in Latin America with Telefónica Pesquisa e Desenvolvimento, headquartered in Sao Paulo. Additionally, Telefónica has begun a process to set up a new R+D centre in Andalusia that will complement the activities it already underway at its centres in Barcelona, Huesca, Madrid, and Valladolid.

These research activities include a broad participation in European R+D projects that are promoted and partially funded by the European Union (EU), which has been decisive in ranking Telefónica I+D as Spain's leading company in this respect. Specifically, in 2004, it participated

in 56 European projects, involving 225 people between 2004 and 2006, under a 16 million euro subsidy from the EU for the said period.

04 PRACTICAL RESULTS OF TECHNOLOGICAL INNOVATION

This substantial effort to promote innovation has made it possible to launch numerous new products on the market and to increase its Portfolio of industrial and intellectual property, thus helping to bridge the technological gap. More specifically, today Telefónica's Portfolio is comprised of 3,032 registered products, of which 1,787 are patents, and 1,245 are copyrights.

The technological innovation projects undertaken by the Telefónica Group in 2004 were carried out with a view to profitable innovation, process efficiency, the creation of new sources of revenue, customer satisfaction, the consolidation of new markets and technological leadership. These projects have fit particularly well in Telefónica's strategy addressed at the creation of value through communications and broadband services, mobile data and multi-media services.

Broadband services in Spain

- In 2004, Telefónica successfully completed the process of doubling ADSL Service speed, as well as offering a raft of added value services. Noteworthy amongst these are the ADSL Solutions, with 178,000 customers, and ADSL Security service, with nearly 350,000 subscribers.
- It is also important to note that the total number of ADSL value added services had surpassed the one million mark at the end of the 2004 year, reaching a total of 1,187,363.
- Other notable services include the interactive TV Service on ADSL, *Imagenio*,

launched in Alicante, Barcelona and Madrid. In the first quarter of 2005, coverage was extended to the Basque Country, Valencia and Zaragoza.

Introduction of broadband in Latin America

- Brazil was one of the first countries in the world to launch the ADSL service in 1999. Today, thanks to Telefónica, in São Paulo the broadband penetration rate is over 7% of all lines, coming close to the level reached in the most advanced European countries, which is approximately 10%.
- In Argentina, the number of ADSL lines rose 175% in 2004 over the previous year, reaching 188,000 lines, which has allowed Telefónica to increase its broadband market share 12 percentage points, to 81%.
- In Chile, the number of broadband customers rose 60% in 2004, now passing the 200,000 mark. Contributing to this increase was the launch of ADSL services adapted to the needs of different customer segments based on *minute plans*, that break down the entry barriers for new customers. And, like in Spain, last September the speed of the broadband lines was doubled at no additional cost to customers.
- Peru witnessed a 104% rise in the number of broadband customers in 2004, now reaching a total of 205,000 users.

Telephone services for all customers

- New *video call service* on conventional lines that enable the dispatch and reception of the users' images in real time and at no additional cost to the customer, through connection of the screen to any basic telephone line.
- Improvements in the *Network Answering Service* to include two new services:

information on calls received not leaving messages and the Immediate Response Service, which allows users to call back the number that left the message after listening to it.

- In Latin America, particularly in Brazil, the launch of new products targeted at low-income customers was an outstanding initiative (economic and super-economic lines).

Corporate solutions

- The *Flexible ADSL Corporate Service* provides commercial process management applications as well as ADSL access.
- The development of solutions and added value services for companies continues to gain relevance within the framework of the services offered by Telefónica Empresas.

New mobile telephony platforms

- In Spain, new multimedia services for GPRS and UMTS technologies were launched in 2004 and new drive given to the evolution of terminals and cards, particularly promoting the TSM brand.
- In Mexico, GSM coverage extends to 248 cities, covering an added population that represents 77% of the country's GDP.

Mobile telephony services

- The 2004 year was one of consolidation of multimedia message services, using the emerging UMTS capacity as well as the greater capacity of the new mobile handsets. The new advanced mobile telephony services are centred on entertainment, advanced voice services, localisation, data services and pre-paid services.

- The most popular services among customers are GPRS Internet surfing, multimedia message services, the commercialisation of services such as *Movistar Desktop* and *Blackberry Professional Email*, and the use of *i-mode* technology.

Commercial and process innovation

Telefónica's efforts in innovation do not only encompass technological innovation, but also seek innovation in processes and ways of doing things.

The following are two examples through which Telefónica has developed systems that allow more efficient business management.

- Commercial and operations system management, addressed at providing innovative solutions for business processes, such as increasing the profitability and efficiency of Supply, Customer Service and Infrastructure Management. Notable amongst these systems are the *FAST* and *ATIS* systems that substantially increase the efficiency of Telefónica's invoicing process.
- Network and services management systems, focused on strengthening infrastructures and their quality through innovative solutions. Highlights in this area are the *Network and Service Management Integrated System (SIGRES)* developed for fixed Group operators in Latin America; and *GEISER (Integral Management of Network)*, centred on Telefónica de España's transmission network management, which is now in its final testing phase.

05 INFORMATION SYSTEMS

The functions of the Telefónica Group Information Systems Department arise directly from the global business strategy of the Group itself. Its mission is to define, develop, implement and manage the systems that

provide optimum support and competitive advantages in the Group companies' business processes.

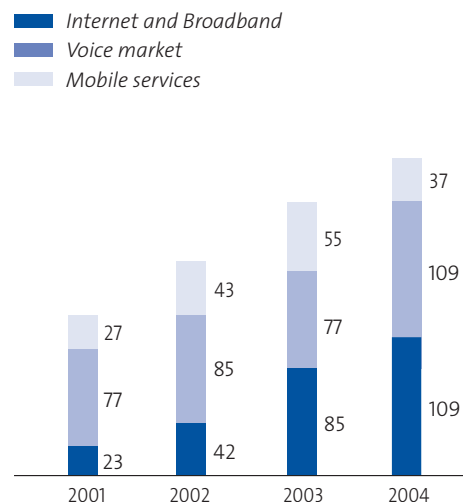
Expenditures in Information Systems throughout the 2004 financial year totalled slightly more than 1 billion euros.

Amongst the most significant events in this area were the upgrading of the commercial systems in the fixed telephone service business lines with the *ATIS* system in the Latin American operators and the *FAST* system in Spain. The total Group Information Systems workforce is comprised on nearly 3,300 employees.

In terms of technological infrastructure, understood as hardware and the associated software licenses, Information Systems took great strides forward this year in the evolution and maintenance of the same, both in the open systems and in the large processors that ensure

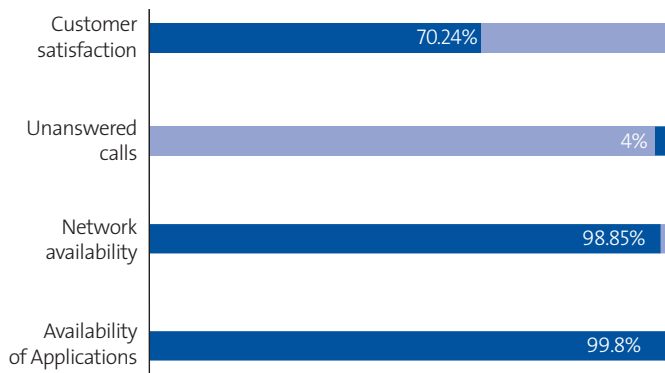
NEW TELEFÓNICA DE ESPAÑA AND TELEFÓNICA MÓVILES ESPAÑA PRODUCTS (03-8)

(Data in number of products launched)



COMPUTER SYSTEMS INDICATORS IN THE TELEFÓNICA GROUP (03-9)

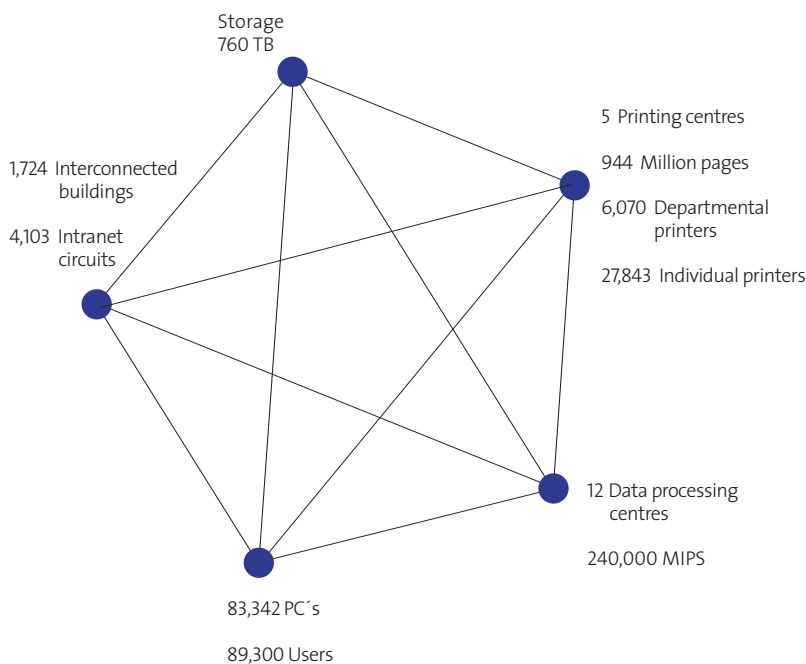
(Data in percentages)



the security and continuity of the information on the Group's businesses.

- 1,724 interconnected buildings
- 4,103 Intranet circuits
- 89,300 users
- 83,342 PC's
- 27,843 individual printers
- 6,070 departmental printers
- 5 printing centres that publish 944 million pages per year
- Over 760 TB (tera bytes)
- 12 Data Processing Centres covering nearly 17,000 square metres
- Processing capacity of more than 240,000 MIPS

INFORMATION SYSTEMS INFRASTRUCTURES IN TELEFÓNICA 2004 (03-10)



All of the foregoing provides us with indicators of the Group's computer functions, aligning them to the best possible market practises, enabling Telefónica to reach an internal customer satisfaction level of 71%, measured by surveys in the user areas.

CHRONOLOGY OF INNOVATION IN TELEFÓNICA 2004 (03-11)

Month	Technological Innovations	Sales Innovations	Process Innovations
January	Telefónica presents the first of the new Internet services based on IPv6 technology in Brussels.	Telefónica de España informs large corporations of their purchases on a daily basis.	Telefónica de España speeds up all the processes related to goods management.
February	Telefónica I+D creates a system for voice portals based on real language	Telefónica Móviles España markets the first GPRS/UMTS data card.	Latin American operators are equipped with ATIS, the new customer service, invoicing and collection system.
March	Telefónica Móviles España and Intel collaborate in the development of third generation devices and networks	Telefónica de Argentina presents the deployment of WI-FI technology throughout the entire country	Telefónica Empresas launches a multi-channel platform for citizens' queries targeted at town governments
April	Telefónica de España has 130 operative ADSL WI-FI areas	Telefónica Móviles launches a mobile telephone for the blind.	The corporate purchasing system known as FILÓN incorporates numerous significant improvements .
May	Telefónica Móviles España and the Junta de Andalucía promote a development of UMTS services	Telefónica de España launches a central switchboard equipped to access the future IP voice services.	Peru implements e-procurement, the internal corporate supply platform.
June	Telefónica I+D, technological partner in a European tele-education project for Latin America.	TPI presents calleacalle.com, the first website with information on all the business establishments in Spain	Telefónica Investigación y Desarrollo de México is created to contribute to the Group's technological development in that country
July	Telefónica Móviles México launches the EDGE technology, the most advanced and fastest in the country.	Telefónica Móviles launches an offer of services that facilitate communications for foreigners living in Spain	Latin American fixed telephone operators develop the GAUDI project that unifies installation and maintenance practises.
August	The Telefónica Professors at the Spanish universities meet in Barcelona for a seminar on the professional innovator.	Telefónica de España launches a new service to prevent spam on the Internet	Telefónica Móviles promotes improvements in customer service and invoicing in all its operators.
September	Telefónica I+D participates in the presentation of strategic projects to the European Commission in Brussels.	Telefónica Móviles launches a new service that visualises webcam images on mobile telephones	Terra launches a new ADSL service that automatically resolves all connection and e-mail problems.
October	Telefónica Móviles and the Politécnica de Cataluña develop a project on the use of the Internet through UMTS.	Telefónica Móviles launches the first rechargeable 3G data card in Spain	Telefónica Móviles España deploys the first fractal antennae with low visual impact
November	The Telefónica Group in Argentina launches a research program for the development of SMEs.	Telefónica de España completes the speed-up of ADSL lines for customers at no extra charge	<i>B2Bconecta</i> , Telefónica Empresas' solution for the development of electronic invoicing
December	A system for caring for HIV patients at home, Prize for "new applications for the Internet" awarded by the Telefónica Professorship at the UPM	Telefónica CTC Chile and IBM launch a new service for PC + Broadband	Telefónica CTC Chile has already issued one million electronic invoices