

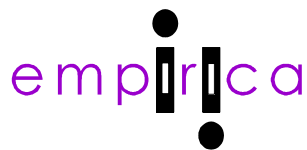


# Conditions for the Development of New Ways of Working and Electronic Commerce in Spain

by



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Madrid and Bonn, March 2000

<b>0. INTRODUCTION</b> .....	<b>3</b>
<b>1. THE POLICY BACKGROUND IN SPAIN</b> .....	<b>4</b>
1.1 <i>Telecommunication Liberalisation</i> .....	4
1.2 <i>Internet Access Policies And Tariffs</i> .....	6
1.2.1 Middlemen in the Internet Access Market.....	7
1.2.2 Access and tariff structure in the Spanish market.....	8
1.3 <i>General Spanish Legislative Framework</i> .....	9
1.3.1 E-Commerce.....	9
1.3.2 Telework and its situation in Spain.....	11
1.4 <i>Specific E-Commerce Policies</i> .....	12
1.4.1 Private Initiatives.....	12
1.4.2 Civil Service Initiatives.....	14
1.5 <i>Information Society Initiatives</i> .....	16
1.5.1 Primary Spanish Organisations of R&D Promotion.....	16
1.5.2 Spanish participation in R&D projects.....	17
1.6 <i>Educational Initiatives</i> .....	18
1.6.1 Specific actions in the research sector (primarily educational).....	18
1.6.2 Commitments of Cable Network Operators.....	20
<b>2. ELECTRONIC COMMERCE AND TELEWORK PENETRATION AND TRENDS: THE MAIN ECATT FINDINGS FOR SPAIN</b> .....	<b>21</b>
2.1 <i>Electronic Commerce</i> .....	21
2.1.1 PC and e-mail usage, Internet and online services access and use by the population.....	21
2.1.2 Online activities with relevance for electronic commerce: online shopping and banking by the population.....	25
2.1.3 E-mail usage, Internet and online services access and their usage by establishment.....	31
2.2 <i>Telework</i> .....	34
2.2.1 Penetration and Growth of Teleworking.....	34
2.2.2 Potential Interest and Knowledge in Teleworking.....	36
2.2.3 Characteristics of teleworking and teleworkers.....	39
2.2.4 Telework practise by establishments.....	42
2.2.5 Barriers to telework.....	44
2.2.6 Potential, Tendencies, and Prognosis of Telework.....	47
<b>3. CONCLUSIONS</b> .....	<b>49</b>
3.1 <i>E-Commerce</i> .....	49
3.2 <i>Telework</i> .....	50
<b>4. ANNEX</b> .....	<b>52</b>
4.1 <i>E-COMMERCE</i> .....	52
4.2 <i>TELEWORK</i> .....	56

## 0. INTRODUCTION

In very little time, the Internet has become the symbol of the new society of the 21<sup>st</sup> century. The information revolution that has fed the Internet's development has changed, in a profound manner, the traditional concepts of time and space, giving way to a rapid transition in how we think and act, with out the possibility of going back. The Internet's importance resides in the fundamental role it has acquired as carrier and conformer of opinions and values. Its current omnipresence in the world denotes its power, with its influence reaching social as well as economic processes, giving rise to new ways of living and working in the information society.

Electronic commerce and Telework are two direct consequences of this phenomenon. The most emphasised aspect of the Internet is not only its symbolic imposition of modernity, yet rather the significant connotations its continued evolution carries with it. In this manner, electronic commerce is more than the mere buying and selling of goods and services over the Internet, and Telework is more than simply working from home. The significance of these concepts is far greater. They represent new forms of working and doing business that will bring about the change of traditional organisational structures, the transformation of businesses and the opening of new markets.

There is no doubt that the Internet in Spain finds itself at a key moment in determining its future. The occurrences of the last number of months have helped society stop believing that the Internet is merely an educational and business tool. One must not forget that this has all come about when only three years ago, people had just begun hearing word of the Internet in Spain. But now is no time to sit back and look at what has been accomplished. The development and strengthening of the Internet in Spain depends, in large part, on what still needs to be accomplished, and how we decide to face the challenges that await.

# 1. THE POLICY BACKGROUND IN SPAIN

The Spanish e-commerce market is large in terms of opportunity due in part to supportive initiatives from the Spanish government. Today, however, Spain is one of the less developed e-commerce markets in Europe, especially in business-to-consumer markets, where Spain's low rate of Internet penetration puts a sharp brake on development. Spanish respondents use e-commerce across a narrower range of functions than the European average, and report less impact from e-commerce on their marketplace so far.

Within five years, Spanish respondents expect to be using e-commerce in as wide a range of uses as other Europeans. It is notable that Spanish responses, in general, are much closer to the European average than they were last year, which suggests a significant increase in appreciation of and commitment to e-commerce in Spain. This may reflect their strong faith in the Euro to generate new e-commerce opportunities, or their expectations of trading with the expanding Internet world of Spanish language speakers. Spanish respondents expect most impact from e-commerce in opening new relationships with customers and suppliers, allowing them to focus on core capabilities. They strongly expect it to enable them to place non-core business with outside suppliers, while opening up new geographic markets.

## 1.1 Telecommunication Liberalisation

*As in other countries, the telecommunications market in Spain is going through one of its most dynamic periods. Nineteen ninety-nine represented a year of change, with unusual growth, freer competition, and a quickening approach to maturity.*

Telecommunications liberalisation thus far in areas such as cellular telephone and cable TV service has provided opportunities for foreign firms to establish themselves in sectors previously dominated by the local telecommunications firm, Telefónica de España. New opportunities are emerging in advanced telecom services, such as the Internet. Cellular telephone service has experienced rapid growth in subscribers. Increased competitiveness has operators in Spain looking constantly for high-tech solutions to implement new services. The end-user is gradually realising that one can choose a service provider, thus tariffs are dropping, while the quality of the service increases. Therefore many opportunities exist for exporters and investors. However, the Spanish Telecommunications market requires prior research and understanding at the local level, as the learning curve is initially steep.

The alliance by Telefónica de España, BT, and MCI in 1997, was an important change in the global telecommunications market, but certainly not the only change that has taken place in the Spanish telecommunications sector. The privatisation of Retevisión, its conversion into a big telecommunications operator, and the full market liberalisation in December 1998 have been other important events.

In 1995 Retevisión, the company transporting TV signals in Spain, created Optel, a subsidiary intended to foster its activities in the telecommunications market. In March 1996, nine electricity companies bought a 40% stake of Optel.

The communication networks of these companies were to be integrated in the infrastructure of Optel, which already had agreements to use the communication networks of other big corporations, for example Renfe, the Spanish Railway Company.

In June 1996, however, the new Government formed by the Popular Party issued a law that changed significant aspects of the telecommunications liberalisation process. This law gave the second licence for basic telephony to Retevisión, but Optel was left out of the scene (Optel is now dissolved). Once privatised, Retevisión would compete with Telefónica, forming a duopoly during several years until the full telecommunications market liberalisation. (Spain, as well as four other European countries, was entitled to delay the liberalisation up to five years after the deadline of January 1st, 1998 set by the EU.)

However, the privatisation of Retevisión was delayed and the full liberalisation date was advanced to December 1st, 1998. With these changes, the duopoly period was much shorter than expected and Retevisión lost part of its interest for potential investors. The situation changed, however, when Telefónica announced its new alliance with BT and MCI.

Retevisión announced basic telephony services with reduced prices in twelve big Spanish cities for December 1997. A change in the Spanish telephone-numbering plan allows users to select the operator they prefer for local and for long-distance calls. Meanwhile, Telefónica is not inactive. In September 1999, the company started to reduce its tariffs, announcing significantly reduced prices for international calls and several special tariffs for its clients, even including unlimited free national calls during nights.

Former competitors are now partners, and existing partnerships are dissolved. For example, BT and Banco de Santander have been traditional competitors of Telefónica in mobile communications (through Airtel, the second GSM operator) and in the data market (through BT Telecommunications). Moreover, not long ago BT was a candidate to participate in the privatisation of Retevisión and the creation of the second telecommunications operator, thus becoming a competitor of Telefónica in basic telephony as well. Now BT and Telefónica are allies, and both BT and Banco de Santander are taking a stake in Telefónica and selling their shares in the competing companies. Telefónica is still a member of Unisource together with Telia, Swiss Telecom, and KPN. However, this membership seems incompatible with its new alliance with BT and MCI, which form Concert, a direct competitor of Unisource.

### Competition in Data and Mobile Communications

The progressive liberalisation of telecommunication services (e.g. data transmission, mobile telephony, and leased lines), and basic telephony, has attracted the interest of important financial and industrial groups. These groups have taken positions not only in the equity of new operators, but also in Telefónica, now a completely private company.

Two different groups of companies exist: one supporting Telefónica, and the other forming a more or less organised competition. The group supporting Telefónica, composed mainly of three important banks, Argentaria, BBV and La Caixa, owns more than 7% of Telefónica's equity. The other group is a set of companies with common investments in the mobile and cable markets. This group includes important banks, namely Banco Central Hispano (BCH) and Banco de Santander, Endesa (an electricity company) and several other members.

### The Telefónica Group, The Main Operator in Spain

Telefónica de España operates about 16.3 million service lines in Spain and 10.3 million lines in South America. It is one of Spain's most important companies and the largest telecommunications service provider in the Spanish-speaking world, a market of more than 300 million people. In 1996, Telefónica was among the top ten telecommunications companies in the world in terms of revenues: 2 trillion pesetas. Telefónica has turned out to be one of the most efficient operators in Europe. Since February of 1997, Telefónica has been a privately held company.

Telefónica accounts for 60 % of the total revenues generated by the Telefónica Group. In addition to the parent company, the R&D company Telefónica I+D, Telefónica Móviles, and Telefónica Transmisión de Datos (the company that represents Telefónica in Unisource), one of the major components of the group is Telefónica Internacional (TISA). TISA, which accounts for 15% of total group revenues, controls Telefónica's holdings in several telecommunications companies in Chile, Argentina, Perú, Puerto Rico, Venezuela, and Brazil. The activities of these companies include not only basic telephony, but also mobile telephony and cable TV.

At present, the company participates in Via Digital, one of the two, digital satellite TV platforms in Spain. Via Digital has been in operation since September 15th, 1997. Canal+ leads the other platform, Canal Satellite Digital, which started earlier and already has more than 125,000 subscribers, so once again old partners have become competitors.

BT, MCI and Telefónica announced their alliance on April 18th, 1997. The alliance combined the strengths of the largest telecommunications services provider in the Spanish-speaking world with BT and MCI and their joint venture called Concert. Telefónica Internacional SA (TISA) and MCI created a 50/50 Pan American joint venture, managed by TISA, called Telefónica Panamericana-MCI. This joint venture pursued opportunities in the fast-growing Latin American communications market.

Telefónica will also have the opportunity to invest in Avantel, the joint venture between MCI and Banamex, the leading financial group in Mexico, a communications market of US \$7 billion which is expected to double within the next five years.

Finally, the alliance with BT-MCI has given Telefónica the opportunity to establish a link with Portugal Telecom. The Spanish company wanted to make an agreement with the Portuguese Telecommunications Company in order to compete in the Brazilian market. A few months ago, Telefónica Internacional (TISA) obtained a 35% stake of CRT, a company privatised last year by the Brazilian state Rio Grande do Sul. The two operators will exchange equity and participate in their respective boards. Telefónica will take an approximately 3% stake in Portugal Telecom, and Portugal Telecom will take a 1% stake in Telefónica. Later in 1999, users in both countries obtained the first tangible benefits of the agreement: international calls between Portugal and Spain charged at domestic tariffs.

## 1.2 Internet Access Policies And Tariffs

*For some years now, Spain has been open to the worldwide wave of influence the use of the Internet is having on society. The number of Internet users in Spain has nearly doubled in the two months since local providers began offering free access to the Web, but this does not imply that these users plan to utilise the web for purposes of electronic commerce. The profile of the typical Spanish Internet user is young, city dwelling, with a higher education level, and a need to be well informed.*

Between 400,000 and 500,000 home users of the Internet have signed up for free Internet access with ISPs since June, compared with around 600,000 people who pay for access. An ISP began offering free access in June, and was quickly followed by the rest of Spain's largest ISPs, including the online unit of dominant Telecommunications Company Telefónica. Some providers have now begun offering cut-price PCs to woo users to their services. Local interconnection rates of roughly one peseta (less than one cent) per minute backed up by advertising revenues were sufficient to encourage Telefónica's competitors into offering free access.

Internet usage in Spain is between 40 million and 50 million minutes a day, up from around 25.5 million minutes at the start of the year, Spain's explosive Internet growth was similar to a boom in Britain after the launch of free services there. Leading British ISP Freeserve alone has more than 1.3 million subscribers and more than 50 other companies are offering free access to the Web in Britain.

In their ongoing fight for new customers, Spain's telephone operators have launched a wave of free Internet access offers. Hailed as a major boost that will bring millions of Spaniards online by year's end, the strategy is also decried as the death knell for the country's smaller ISPs.

The new Retevisión telephone operator jolted the Spanish online market earlier this month when it announced it would be offering all of its clients free Net access by way of Canal 21, the ISP run by its Basque partner Euskaltel. By signing up with the operator, clients were promised free Net access for the duration of their contracts. The company hoped to reap 1.4 million new users - ten times the number of clients that currently subscribe to its Ideo online service, made up of two ex-ISPs, Servicom and RedesTB. This will mean the Internet's definitive take-off in Spain

Uni2 soon followed with a more competitive offer: free access to anyone, regardless of his or her phone company of choice. Within days, Airtel, Jazztel, British Telecom and other companies had all found a way to compete with the telecommunications giant, Telefónica, S.A. The former state monopoly was quick to respond with what it called "a free Internet access offer with a level of quality and speed superior to all other offers announced."

By means of its Teleline online service, Telefónica Interactiva offered unlimited Net access, a free e-mail account, a 5MB homepage, and 24-hour technical support. Unlike some other offers, Telefónica's offer went into effect immediately and would reportedly be permanent. According to the company, which currently has 110,000 residential online clients, "Telefónica Interactiva has been working for several months on this free offer."

In response to what could mean the demise of many of Spain's close to 600 independent ISPs, a wide array of providers attack the telephone company offers with more or less the same reasoning: free access is no guarantee of quality. According to Noticias Intercom, the recent free access craze could boost Spanish Net use from 1.98 million users today to 7 million by late 1999. Despite waving the Net access charges, telephone companies charge users for the cost of a local call, and thus for online time.

### 1.2.1 Middlemen in the Internet Access Market

In 1995 the internet began realising commercial uses, with multiple interconnected networks being developed and managed by large telecom operators (MCI (C&W), Worldcom, Sprint, BBN, etc.) that linked traffic at Network Access Points (NAP's). In

regional and local areas, smaller entities appeared that concentrated Internet traffic and facilitated access, namely Internet Access Providers (IAP's). The IAP's are clients of the large telecom operators with whom they connect at the NAP's by means of lines rented from their local or regional operators, and which they use to provide the necessary connectivity to their clients. Some smaller IAP's provide connectivity to their clients via larger IAP's, those that are connected at the Network Access Points.

The low start-up costs for Internet Access Providers has caused a proliferation of these companies that, using a flat tariff scheme (although sometimes with a limited amount of on-line hours), offer services that vary substantially in quality, with prices that usually vary accordingly. The intense competition between providers of Internet access y their difficulty in maintaining customer loyalty, forces practically all companies to offer other value-added services, converting themselves into Internet Service Providers (ISP's), offering the same type of tariffs to their users.

### 1.2.2 Access and tariff structure in the Spanish market

User access to ISP's is realised through one of various ways using existing networks:

- a. Individual lines of telephone networks and the Integrated Services Digital Network (ISDN) directly connected with ISP's. This network is the only one with the extensive reach into most customers' homes, providing the user with access to all ISP's currently offering service.
- b. The telephone network, ISDN's, and the data networks acting as intermediary links in order to connect to the ISP's (Infovía's current access plan.) This model presents the advantage of using data networks that are better adapted to the access and transfer of information, thus optimising resources.
- c. Dedicated (rented) lines connected to the ISP's, suitable for high-volume users that can justify the relatively high cost. This model can guarantee to a much greater extent the quality of service offered.

In order to facilitate access to the Internet via the telephone network at local rates for all potential customers, a significant investment in the network would be required with the intent of establishing an Internet Access Point in each local tariff district. For example, the establishment of 100 access points in different tariff districts would give coverage to 90% of telephone service subscribers.

When considering access to the Internet by means of dialling a local number, Telefónica's current offer, if one considers the sum the subscription charges and the placing of the actual call, would not be equivalent to a connection at the local or metropolitan rate.

In Spain there are different tariff schemes that include certain discounts for local calls. Upon analysing the establishment of a flat tariff plan, its attractiveness depends on its basic price level, and in order to have sufficient impact, it must attract a significant percentage of subscribers. In this respect, one must bear in mind that the large majority of subscribers (87.4%) of Infovía of Telefónica, S.A. consume less that 8.6 hours each month in connection to the service, which would assume an expense of less than 2,800 pesetas a month. Therefore, any tariff plan with a price level above that quantity, theoretically, would only prove attractive for less that 13% of subscribers.

Finally, it is necessary to point out that the price of metropolitan telephone service in Spain is equal to or even less than that of other countries in the European Union. And while the appearance of new, consumer-friendly tariff schemes should be encouraged, the current plans should not presume a curb on the development of the Internet in Spain given the costs relative to those in the rest of the European Union. The same reasoning could be applied in respect to the prices charged by Internet Access Providers (IAP's).

## 1.3 General Spanish Legislative Framework

### 1.3.1 E-Commerce

Security or the lack thereof, is one of the primary reasons why Spanish web surfers hesitate when contemplating a purchase via the web. The future of virtual commerce will depend on the adoption of guaranteed security systems and the faith in which the end user places in them. In order for the electronic marketplace to truly become a functioning, global marketplace, it will be necessary to have a legal body that can adequately resolve issues concerning security and privacy, legal validity of commercial documents in electronic format, intellectual property rights, etc. The solution to these problems requires the actions of research centres, general standards organisations, private companies within the sectors affected, and public and governmental associations, with the common objective to create an atmosphere of accessible electronic commerce, secure and easy to use, that generates confidence among users, in particular among the general public and small businesses. The junction of technical solutions, both at an application level and a network infrastructure level, and appropriate legal solutions will allow the full potential of electronic commerce to be realised, improving current businesses and providing the possibility for new ones to be started.

In order to avoid the creation or consolidation of restrictive and incompatible national laws that impede the success of electronic commerce, its regulation should take on a form as global as possible, that is, not only on a European scale, but rather on a world-wide scale.

In Spain, electronic commerce is treated as a "distance sale", and therefore adheres to the Ley de Ordenación del Comercio Minorista. The new law concerning "digital signatures" is already in place and the new Spanish Penal Code sorts out any wrong doings committed while using electronic tools or communication. The general Telecommunications Law authorises coded messages, but leaves the door open to possible mandatory controls.

Ley orgánica de regulación del tratamiento automatizado de datos de carácter personal LORTAD (Law Regulating the Treatment of Personal Information Online)

The proliferation of electronic commerce carries with it the need to create large databases full of information pertaining to people's personal data and the connection of some databases with others, with the consequent compromising of privacy. There exists both national and community laws to protect the privacy of citizens, defined as the collection of facets of one's personal life that, when considered individually, may lack significance, but when taken as a whole, paint a portrait of the individual that should be allowed to be maintained a secret.

In 1998, the European directive concerning the protection of personal data was created, and brought about the related Spanish legislation, LORTAD, a law that for many appears very inflexible. For this reason, entities such as La Asociación Española de Comercio

Electrónico (AECE - The Spanish Association of Electronic Commerce) have implemented some initiatives for the self-regulation of the electronic commerce sector. One of these initiatives is the creation of a code of ethics dealing with the use of personal data of consumers obtained over the Internet.

The proposed code of ethics is based on the principle of only permitting the use of personal data when the consumer is aware of how that data will be used. The way of implementing this idea is to create a specific logo or stamp of guarantee that can be used by those companies willing to respect the principles of the code. This stamp will provide access to an informational page where the user can learn about how the company plans to use personal data, and will give the user the opportunity to prohibit that use if so desired.

#### 1.3.1.1 La Nueva Ley de Firma Digital (New Digital Signature Law)

The New Digital Signature Law (14/1999) is already in place, the Royal Decree concerning the Electronic Signature is operating and eighty percent of its content is already in direct application, and it is not necessary that companies be registered in the Registry of Certified Agencies in order to begin operations. The new law permits that the electronic signature has the same legal validity as the written signature, defines the role and requirements of the certification entities, allows for the electronic completion of buying and selling contracts, and is particularly useful for Business-to-Business electronic commerce. Very soon articles 6 and 26 of the Digital Signature Law will be put into effect that have control over the accreditation of certification entities in respect to domain names.

The new law establishes that the Ministerio de Industria y Fomento (Ministry of Industry) will regulate the ending .es in electronic addresses. There are two instances that allow this ending: in companies listed in the commercial registry, and in the case of one company having ownership of more than one domain.

The primary benefit of the law is that there will finally exist a form of material identification that is linked with the signer and the document. This will greatly affect electronic commerce in general, primarily that of the banks. Smart cards will play a large role in the dissemination of the electronic signature, facilitating electronic commerce.

#### 1.3.1.2 Electronic Certification Authorities in Spain

The Public Administration will also use electronic certification, for such things as: general documents that will be improve internal efficiency and help facilitate access to the public, the smart card as support for private or certified letters, a cyber-DNI (ID card), and as a means for standardising forums and agencies. Other challenges facing the Administration regarding the electronic signature will be the co-ordination between different branches, its use as a mechanism for every-day purchases, its use as a time stamp, and its positioning to the end-user insofar as ease of use and reliability.

#### **The Spanish Mint (Fabrica Nac. de Moneda y Timbre)**

[www.fnmt.es](http://www.fnmt.es)

The Spanish Mint (Fabrica Nac. de Moneda y Timbre) saw the need for a national infrastructure to ensure secure electronic transactions. With different government organisations developing different systems, citizens and companies would be forced to

register separately for each one, creating unnecessary duplication of effort. From 1997, the Spanish Mint began work on the conceptual design, processes and technology infrastructure to ensure security, authenticity and confidentiality for electronic data communications and to address the issue of legal validity of electronic transactions. A National Certification Authority, CERES (Certificación Española,) was created to design and develop a new system and processes based on the Public Key Infrastructure (PKI). The system is based on public/private key encryption. Each user is issued a public key and a private key by a trusted third party, CERES. The user's public key is open and accessible to every other registered user, rather like an email address. The private key guarantees the user's identity and is stored on smart cards issued to every user. The advantage of using smart cards is that additional security features such as encryption make it impossible to forge a digital signature. CERES publishes the public key in the form of an electronic certificate, digitally signed by CERES to ensure its authenticity. Spanish citizens are able to deliver Income Tax Reports to the government via the Internet using the CERES infrastructure. Spain is the first country in the world here the citizen's digital signature is used to provide advanced security. By June 1999 around 20,000 citizens had submitted their reports using this service and additional related services have been put in place, including online query of tax information, settlement status and tax information update. Tax services for companies will be soon released, with an estimated user base of over one million citizens.

#### **ACE, Agencia de Certificación Electrónica (Electronic Certification Agency)**

**[www.ace.es](http://www.ace.es)**

ACE is a certification authority controlled by Telefónica (40%), CECA, SERMEPA y Sistema 4B (20% each) which has as its principal purpose the issuance of certification to be used with the SET electronic payment protocol as defined by VISA and MasterCard. It is hoped that ACE can centralise the activities of commercial banks and savings banks. The SET certificates are issued to credit card users, businesses, middlemen, and any financial entities involved. These certificates will offer their users a service that the banks can not provide, with an additional image of security displayed to customers.

#### **FESTE, Fundación para el Estudio de la Seguridad de las Telecomunicaciones (Foundation for the Study of Telecommunications Security)**

**[www.feste.com](http://www.feste.com)**

FESTE is a certification authority in which participates, among others, business brokers and notaries. All of the certificates from FESTE depend on the X.509 v3 standard, although different formats and protocols expect to be supported in the future. FESTE distinguishes between certificates for Web servers, software, service authorities and EDI (Electronic Data Interchange).

#### **IPS SEGURIDAD (IPS SECURITY)**

**[www.ips.es](http://www.ips.es)**

IPS Seguridad is a division of Internet Publishing Services, a Spanish firm founded in 1995 and dedicated to technologies related to the Internet. IPS Seguridad offers digital certificates for servers as well as subscribers. Obtaining a server certificate with a validity of 1 year requires the physical filing of documentation with IPS Seguridad.

### **1.3.2 Telework and its situation in Spain**

Telework is beginning to acquire "legal status" in our country. The Plan de Empleo del Reino de España (Employment Plan of the Kingdom of Spain), celebrated in Cardiff on the 15 of April 1998, mentions Telework as a means of improving the workplace environment

given that employees are not forced to be present in a traditional office. It is also being proposed that aspects such as working hours and general conditions of security and health in the workplace should be subject to specific regulation.

Nevertheless, this regulation has yet to be carried out. The current Spanish labour laws do not explicitly deal with a set of rules for Teleworking, though they do permit a satisfactory level of regulation of the employer-employee relationship in these cases. The applicable legislation will depend upon the precise type of working relationship that is established between the employer and the Teleworker:

If there exists an employer-employee relationship, it falls under that of a salaried employee. The type of contract that is used in this case is the home working contract, regulated by article 13 of the Statute of Workers.

In the case that one tries to change from a traditional office worker to a teleworker, one will be able to opt between the existing form of home working contract or negotiate a more specific, personalized contract. In either case, it is necessary to revise the implications that will come about due to the change in work conditions.

If there is no existing employer-employee relationship, it falls under the category of a self-employed or freelance worker, whose contract would be created according to a fixed task contract (Art. 1544 and 1588 and the corresponding Civil Code) or a fixed service contract (Art. 1544 and 1583 and the corresponding Civil Code). In certain cases, the type of contract will depend on the specific activity being conducted (insurance agents, commercial agents, etc.), whose cases will depend on the corresponding specific legislation.

Even with the current applicable legal contracts, it would be beneficial to develop new legal norms related with teleworking (on both a national and international level) in order to regulate the new working relationships brought about new technology of the information society.

## 1.4 Specific E-Commerce Policies

**Electronic commerce represents a profound change in socio-economic relationships, fostered by the use of information technology and communications. Electronic commerce is changing, and will continue to change, the way in which we carry out transactions. This section describes the activities of the principal entities promoting electronic commerce in Spain.**

### 1.4.1 Private Initiatives

One of the big advantages of the Internet is that it allows small businesses and large companies to compete more fairly. All sectors can apply their business to the Internet, though manufacturing, telecommunications, insurance, retailing and travel have led the way in incorporating the web to improve sales and service. The three sectors that have invested the most money in their Internet ventures are the financial sector, the food sector, and the telecommunications sector.

The majority of Spanish companies has an Internet presence, but does not take advantage of its potential. That is, there are still few firms that use the Internet to sell products to the consumer. This is primarily due to two factors: the public's unwillingness to using

electronic commerce as a habit, and companies' inability to achieve a clear vision of the advantages that that web can contribute.

There are many private initiatives attempting to solve the problems that exist in Spain in order to bring about a definitive taking off of electronic commerce.

**Asociación Española de Comercio Electrónico ( AECE) (Spanish Association of Electronic Commerce)**  
**[www.aece.org](http://www.aece.org)**

AECE is an association of Spanish companies that endeavour to unify their efforts of obtaining of more secure and reliable system of electronic commerce.

AECE intends to make the legislation protecting private information more flexible and is party to the self-regulation of the electronic commerce sector. One of AECE ´s most important initiatives is the creation of a code of ethics pertaining to personal data obtained from consumers over the Internet. This code of ethics, which is a first in Europe and will be adopted by other European countries, has been thought out with the participation of the Agencia de Protección de Datos (APD) (Information Protection Agency), Asociación de Autocontrol de la Publicidad (AAP) (Association of Self-Regulated Publicity), Confederación de Consumidores y Usuarios (CECU) (Federation of Consumers and Customers), Organización de Consumidores y Usuarios (OCU) (Organisation of Consumers and Customers) and the Unión de Consumidores de España (UCE) (Spanish Consumers Union.)

The proposed code of ethics is based on the principle of only permitting the use of personal data when the consumer is aware of how that data will be used, and has the ability to restrict or prohibit such use.

**Commercenet Español**  
**[www.commercenet.org](http://www.commercenet.org)**

CommerceNet Español is an association representing the use, promotion, and development of electronic commerce over the Internet. Among other activities, CommerceNet Español has been working on the Project A4EC (Adapting for E-Commerce) since 1997, directed at the small and medium companies of the Comunidad de Madrid. The primary activity of A4EC is the realisation of traditional and long-distance electronic commerce training courses in order to educate the employees of small and medium companies, especially those dealing with exports. In October of 1998, CommerceNet Español and la Asociación Española de Empresas de Tecnologías de la Información (Spanish Association of Information Technology Companies) signed a collaborative agreement to facilitate the promotion and dissemination of material on electronic commerce, targeting both national and international concerns, yet still emphasising European and Latin American themes.

**Fundación para el Estudio de la Seguridad de las Telecomunicaciones (FESTE)**  
**(Foundation for the Study of Telecommunications Security)**  
**[www.feste.com](http://www.feste.com)**

FESTE has its origins in the European project AEQUITAS, pertaining to the INFOSEC initiative of the European Commission DGXIII/7. FESTE ´s objectives are:

Realise projects and studies concerning the instruments of security that are necessary for the development of new information and communication technologies.

Collaborate on the design of a legal framework adequate for the certification of electronic transactions for e-commerce

Act as a certification service for electronic communications, forming part of the European network of security

**Asociación Española de Empresas de Tecnologías de la Información (SEDISI)**  
**[www.sedisi.es](http://www.sedisi.es)**

The Association Española de Empresas de Tecnologías de la Información (SEDISI) is a non-profit organisation founded in 1976 to represent the corporations of the technology and telecommunications sectors. SEDISI serves as a rallying-point to further the debate on common problems and potential solutions that affect the development of the sectors. Among other groups, SEDISI has an Internet task force in charge of promoting initiatives to develop the Internet market in Spain. The objectives of the task force include setting up a forum for debate for Internet Service Providers, where they can discuss their needs and generate studies and reports about the development of their market.

#### 1.4.2 Civil Service Initiatives

Generally, the civil services have a double role in regards to electronic commerce: as both users and promoters. But that which receives the most attention is that of promoting the use of electronic commerce among governmental institutions and companies, primarily in regards to purchasing and contracting. Among the services that are already using electronic means of carrying out business are customs, tax collection, social security, employment services, official registries, and public service contracting. The administration is still behind in using new technology to streamline organisational structures and regulations.

In 1998, the Grupo Asesor sobre las Industrias de la Sociedad de la Información (Advisory Group on the Industry of the Information Society) created by the Ministry of Industry and Energy put forth a series of recommendations to help develop the use of information technology in Spain:

Stimulate demand

Improve infrastructure

Push through projects

With these and other recommendations and steps, they intend "to convert the civil services in to leading users of information technology."

##### 1.4.2.1 Experiences

**The Taxing Agency (Agencia Tributaria): Tax declaration of large companies**  
**[www.aeat.es](http://www.aeat.es)**

The Agencia Estatal de Administración Tributaria (AEAT) (State Agency of Tax Administration) offers large companies the ability make declarations over the Internet regarding:

- Personal Income Tax
- Value Added Tax

The Taxing Agency expanded the ability to file taxes over the Internet to all citizens in 1999. There are other services that are currently available over the Internet, such as tax form requests, verifying the status of tax rebates and programs to assist citizens with their tax filing.

**Proyecto Ventanilla Unica en Internet (Single Window Project on the Internet)**  
**[www.ventanillaunica.com](http://www.ventanillaunica.com)**

This is a project put forth by the Ministerio de Fomento that hopes to facilitate the ability to obtain forms and documentation concerning administrative regulations of different public entities. Within the Single Window will be two web sites, one for the general public, and the other for non-profit organisations. It is hoped that this project will greatly improve the ease and understanding with which the public completes the various documentation, thus improving both the customer experience as well as the Ministry's image.

**Denunciations Online**  
**[www.policia.es](http://www.policia.es)**

The Spanish citizens of 10 provinces can now present their claims via the Internet. In the current first phase of implementation, one can only report offences such as damages, misleading documents or items, vehicle theft, withdrawal of documents or items, and theft from homes or shops. The provinces where this service will initially be available are Islas de Baleares, Sevilla, Alicante, Barcelona, Cádiz, Las Palmas de Gran Canaria, Madrid, Málaga, Tenerife and Valencia.

**Proyecto de Administración Electrónica de Xunta de Galicia (Electronic Administration Project of Galician Government)**  
**[www.xunta.es](http://www.xunta.es)**

This year, the government of Galicia has initiated the presentation of advanced electronic administrative services for citizens, within the Electronic Administration Project being developed by the Dirección Xeral de Organización e Sistemas informáticos de la Consellería da Presidencia (President's Council on the Leadership of Organisation and Information Systems). These services are accessed via the Internet, employing an innovative identification system with digital certificates and smart cards, and allow citizens to have secure and confidential access to the government. The group is also pushing for the realisation of the Plan Estratégico de Implantación de Tecnologías de la Información y la Comunicación (Strategic Plan for the Implementation of Information and Communication Technology) in private companies. They are also finishing a plan for a permanent Technology Observatory in Galicia that will focus on being aware of the current technology needs of companies.

**The Remisión Electrónica de Documentos (Electronic Document Remission) Service of Social Security**

The Remisión Electrónica de Documentos (RED) Service, is a service offered by the Tesorería General de la Seguridad Social (TGSS) (General Treasury of Social Security) to companies, associations, and professionals for the exchange of information and documentation in electronic format. Currently, the system allow two types of transactions:

Presentation of appraisal documents

Registration and modification of data

## 1.5 Information Society Initiatives

*In Spain the initiatives and projects necessary to promote research and development seem to finally be receiving the push they needed on behalf of the civil service. Although researchers, businessmen, scientists and politicians agree that science and technology are two of the principal forces influencing society and its industrial and economic development today, the numbers show us that their effects have not yet begun to be felt. Nevertheless, official organisations like the Scientific Research Counsel (El Consejo de Investigaciones Científicas - CSIC) are trying to change this view.*

According to the National Statistics Institute (Instituto Nacional de Estadística), only 3.4% of Spanish companies is capable of accrediting an actual activity to R & D expenditures. Weighing this figure when looking at the past 20 years shows a substantial advance. The Spanish contribution to world scientific production in 1998 was 2.76%, compared to a meagre 1% during the early 80's.

Nevertheless, although Spain has large quantity of scientific production, it is also true that its technological deficit is elevated, due partly to the private sector being reticent to innovation, possibly a result of small businesses making up a large part of the Spanish industrial fabric.

The recent policy of the national government in regards to the support of R&D has its origins en the Ley de Fomento y Coordinación General de la Investigación Científica y Técnica (Law of Promotion and General Co-ordination of Scientific and Technical Research) of 1986, also known as the Ley de la Ciencia (Law of Science.) This law acts as an instrument of promotion and momentum to all activities related to scientific and technical research, from the creation and involution of research infrastructure to the general promotion of knowledge.

### 1.5.1 Primary Spanish Organisations of R&D Promotion

**Centro para el Desarrollo Tecnológico Industrial (CDTI) (Centre for Industrial Technological Development)**  
[www.cdti.es](http://www.cdti.es)

Within the Ley de la Ciencia (Law of Science) exists the Centro para el Desarrollo Tecnológico Industrial (CDTI, Centre for Industrial Technological Development), created in August 1977 and that has as its objective the management and development of the technology policy of the Ministry of Industry and Energy. Since its creation, CDTI has affirmed itself as one of the key organisations in the promotion of innovation and the development of technology within Spanish companies. The Ley de la Ciencia recognised the role of CDTI and amplified the spectrum of its influence, granting it the capacity to evaluate the technological and financial content of the projects in which companies were involved. In accordance with the National Plan of Research & Development, CDTI is responsible for the management of certain projects, which have the objective of encouraging research and strengthening collaboration between private companies and the Public Research Centres.

**La Comisión Interministerial de Ciencia y Tecnología (The Interministerial Commission of Science and Technology)**  
[www.cicyt.es](http://www.cicyt.es)

The Comisión Interministerial de Ciencia y Tecnología (CICYT), created by the Law of Science in 1986, is the group responsible for the planning, production, co-ordination, evaluation, and follow-up of the National Plan of Research & Development. It also must elaborate general guidelines of science policies, direct and control research efforts, and co-ordinate Spanish efforts among larger European research projects. The CICYT is presided over by the President of Government and consists of representatives of those ministries with research related competencies.

La Oficina de Ciencia y Tecnología (The Office of Science and Technology)

On the 30<sup>th</sup> of January 1998, by the Royal Decree 111/1998, the Oficina de Ciencia y Tecnología was created within the Presidency of the Government, under control of the Director of the Cabinet. It oversees the unifying of support of the CICYT in dealing with the activities of science and technology among the distinct ministerial departments and public entities. The office is also responsible for the co-ordination of international research programs that include Spanish participation, and the planning of policy priorities for the State Administration in regards to scientific and technological research and development.

### 1.5.2 Spanish participation in R&D projects

Various Spanish companies, universities, and other entities have participated in the projects of the IV Programa Marco of R&D. Some representative examples in ESPRIT can be cited: the **EP 26984 ARGOS** project (Centre for IPR Data Collection and Management) concerning a centre for data warehousing for managing intellectual property rights, co-ordinated by the Sociedad General de Autores y Editores (General Society of Authors and Editors); the **EP 27111 ECOS** project (Lite E-Commerce Operative Scalable Solution for SMEs) about an environment of electronic commerce tools adapted for use by small businesses and being tested in the furniture sector; the projects EDRINKS y EDELI in the food sector; the ECADEC project in the editorial sector and the GOTHERE project in the tourism sector.

#### **Iniciativa de Apoyo a la Tecnología, la Seguridad y la Calidad Industrial (ATYCA, 1997-99) (Initiative in Support of Technology, Security, and Industrial Quality)**

The Ministerio de Industria y Energía (MINER - Ministry of Industry and Energy), the department responsible for the design and management of Spanish technological industry policy, has put in motion the Iniciativa de Apoyo a la Tecnología, la Seguridad y la Calidad Industrial (ATYCA, 1997-99), which is a support instrument for Spanish industry with the objective of helping it reach a level competitive with countries with the same economic background. This initiative gathers the previous experiences of each action related with the promotion of technology, quality, security, and the industrial environment. Among these actions one finds the Plan de Actuación Tecnológico Industrial (PATI) (Plan of Industrial Technology Action), Programa Industrial y Tecnológico Medioambiental (PITMA) (Program for Environmental Industry and Technology), Plan Nacional de Calidad Industrial (PNCI) (National Plan of Industrial Quality) and part of the Iniciativa PYME (Small and Medium Company Initiative).

#### **Project SPIN-OFF**

One of the latest and most important happenings for the development of research are the so-called spin-off companies, that started functioning last year and that are still not common in Spain. The spin-off companies are a sort of company incubator where one develops projects born in the CSIC and in interested organisations that participate. The

CSIC allows access to all scientific data, which after a small payment, the company can use to benefit their research. As a general rule, in a timeframe of about 5 years the spin-off companies are absorbed by the largest companies. In order to obtain financing, the spin-off companies resort to the capital markets.

The CSIC firmly bets on these new formulas and trusts that they will meet expectations in the new National Plan of R&D, which predicts that in the year 2003 60% of the research investments will come from the private sector, the opposite of the current situation where more than half of the research budget originates in the public sector. In the year 2000, the public resources for research will surpass, for the first time, a half billion Pesetas. The plan also calls for a series of financial help for those firms that invest in innovation.

### **EPISOPYME (Experiencia Piloto para la Implantación de Servicios Online en las PYMEs del sector Metalmeccánico – Pilot Experience for the Implementation of Online Services of Small Business in the Metalworks sector)**

The general objective of this project was to provide small and medium businesses of the metal industry a collection of informational services, electronic commerce (primarily marketing via the Web), Telework, and technology education adapted to the needs of the sector.

## **1.6 Educational Initiatives**

*In Spain, the use of the Internet by academic institutions is also growing. According to the latest data from the NIC (Network Information Centre) of RedIRIS (the provider of the National Network for research and development that established the first Internet connections in Spain,) all Spanish universities have at least an official web site (and some are among the most 50 most visited web sites in Spain, such as the Universidad Politécnica de Catalunya, the Universidad Politécnica de Valencia, the Jaume I or the Universidad de Oviedo.) Practically all of the country's autonomous communities have initiated Internet-related projects focusing on education, representing a total investment of more than 300 million Euros.*

### **1.6.1 Specific actions in the research sector (primarily educational)**

The Iris Network, financed with capital from the Interministerial Commission of Science and Technology, offers an ample range of connection services to private research institutions in Spain. The most common and significant institutions connected to the Iris Network are the Universities, in which the circulation of research and educational content is often very closely interrelated, and the research branches of hospitals. Among other beneficiaries of this network are institutions that perform work focused on the exchange of information, such as the National Library. The Iris Network offers free access for the aforementioned institutions to a network of technology and other advanced benefits providing connections to networks both nationally and globally, including access to the Internet. The only part that must be paid for by each research entity is the link from its headquarters to one of many connection nodes situated in each Autonomous Community. The Iris Network also offers a wide array of additional services of interest, which compliment the actual connection to the network.

Another system that the IRIS Network is putting in motion is one that handles videoconferencing between universities via the Internet. The transmission speed is about

three images per second, and allows for simultaneous use of an electronic blackboard and chatting. The system is primarily used for magisterial videoconferences. The IRIS Network is capable of conducting videoconferences with international institutions as well, currently offering three to four of these sessions each week.

With regard to the number of computers connected to the network available for university students, the figures are disparate: there are examples such as Jaume I de Castellón, where there are nine classrooms with 70 computers for the students of its three campuses, in contrast to the Universidad de La Coruña, where only the 500 students in their third year (among 23,000) have access to the Web.

One of the more interesting examples is one in which the Universidad Oberta de Catalunya put into motion in 1995, a virtual campus that connects professors and students. It offers standardised courses in such fields as Business, Psychology, Law, Humanities, Engineering, and Information Systems. The number of students during the 1996-97 academic year was 1,500.

### ***Convenio marco "La educación en Red" (Online education agreement)***

The Online education agreement, signed on the 13<sup>th</sup> of July 1998 by the Education and Culture Ministry, Telefónica, S.A. and other entities related to education, offers primary and secondary education centres in Spain the following facilities:

Free installation of a telephone line connecting to Infovía or a free ISDN line in cases where a standard telephone line is already in place

Payment of monthly fees for access to Infovía until the 1<sup>st</sup> of December 1998 and to Infovía Plus until the end of April 1999

c. Free ISDN card or modem

As of the 30<sup>th</sup> of April 1999, Telefónica, S.A. will begin charging 17,000 pesetas a month for an ISDN connection, or 10,000 pesetas a month for a basic telephone connection.

The duration of the agreement is three complete academic years, renewable for three more.

### **INFOVILLE**

**[www.tissat.es](http://www.tissat.es)**

There are many other Internet initiatives being started in Spain. Within a few years, Spain will be an Infoville, a virtual city created by the Comunidad Valenciana. Virtually all of the autonomous communities in Spain have begun Internet projects of their own, totalling a more than 300 million Euro investment in education.

Infoville is a world-renowned initiative begun by the Valencian Government as an extension of the information society within the state. The residents of the various municipalities of Valencia can read the local newspaper, view the grades of their children, and request an appointment with their doctor all via a computer. INFOCOLE, an extension of Infoville, is designed to educate students about the information society and teach them how to use the tools and programs necessary to be competitive in that society.

### **CCAA de Cataluña**

The Government of Catalunya, by means of the Information Society Commission, is another autonomous government that is pioneering its way into applying new technologies to education with the ARGOS program. The commission wants all grade schools, secondary schools, and professional training centres of Catalunya to have a multimedia classroom connected to the Internet by 2001. The project goes further to call for the placement of virtual blackboards connected to the Internet.

**CCAA de Canarias**  
**[www.canarias.es](http://www.canarias.es)**

The government of the Canary Islands, through the Instituto Canario de Investigación y Desarrollo (ICID – Canary Institute of Research and Development), has brought the educational world to the Internet: 25% of Canary professors are connected to the Internet in their homes via the RedCanaria (CanaryNetwork). Additionally, 652 education centres throughout the islands, the Canary Civil Service, and the majority of faculties have been given access to information technology thanks to ICID.

**CCAA de Andalucía**  
**[www.andalucia.es](http://www.andalucia.es)**

The objective of the Consejería de Educación de la Junta de Andalucía (Education Council of the Government of Adalucia) is to prevent access to the Internet from becoming another form of discrimination that leads to new forms of illiteracy. It has therefore, concentrated its efforts in strengthening data networks within the education centre of Andalucia, a network called AVERROES ([www.averroes.es](http://www.averroes.es))

### **1.6.2 Commitments of Cable Network Operators**

The entire group of license holders of telecommunications cable services have undertaken collaborative agreements with educational centres. These agreements include, in the majority of cases, one free connection of access to the Internet, a 50% discount on any further connections, an annual fixed rate of 50,000 pesetas per connection with unlimited use, and free space on the Web server for both public and private schools. Other agreements have promised to endow schools and professional education centres with a classroom with multimedia workstations including Internet connections.

## 2. ELECTRONIC COMMERCE AND TELEWORK PENETRATION AND TRENDS: THE MAIN ECATT FINDINGS FOR SPAIN

### 2.1 Electronic Commerce

#### 2.1.1 PC and e-mail usage, Internet and online services access and use by the population

For some years now, Spain has been trying to be counted among those countries that have incorporated the Internet into their every-day society. But the Spanish case should be understood from a slightly different point of view, given that one must take into account certain variables, such as its typical user profile, the characteristics of the Spanish population, and income levels, among others. These variables are very important in understanding why Spain finds itself near the tail end of European countries regarding Internet penetration, its principal obstacles being high tariffs and the lack of facilities to bring about popularisation of Internet access.

##### 2.1.1.1 Use of the Internet, PCs and e-mail

As we can see in the graph, Spain finds itself in last place in regards to the penetration of the Internet, with only 20% of the population on-line. One of the reasons that would explain these results is that the establishment of the Internet and its growth go hand in hand with the economic development of a society, in the same manner as its culture and other technological developments.

Use of Internet or other online services 1999 and 2001 (in %)						
	Users 1999	New users 1999-2001	Users 2001	Growth 1999-2001	Ranking 2001	Ranking (Growth)
Denmark	48,5	11,2	59,7	23,1	5	6
Finland	54,9	10,1	65,0	18,4	2	9
France	45,5	9,3	54,8	20,4	7	8
Germany	32,9	14,2	47,1	43,2	8	4
Ireland	35,6	24,6	60,2	69,1	4	3
Italy	22,7	19,1	41,8	84,1	9	1
Netherlands	51,1	12,0	63,1	23,5	3	6
Spain	20,7	15,5	36,2	74,9	10	2

Sweden	57,9	10,2	68,1	17,6	1	9
United Kingdom	40,6	15,5	56,1	38,2	6	5
<i>EUR10</i>	<i>35,2</i>	<i>14,4</i>	<i>49,6</i>	<i>40,9%</i>		
<i>base: all respondents (n= 7.700)</i>						
© empirica 1999						

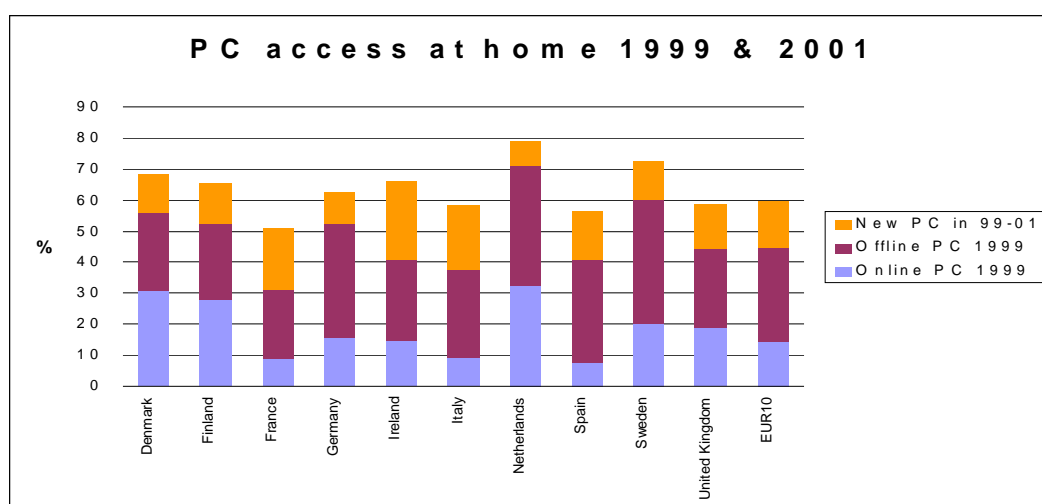
In Europe, we can distinguish three levels of Internet penetration: the Nordic countries with a level above the European average (Sweden with 58% Internet users), then the central European countries (Germany with 33% Internet users), and at the bottom the Mediterranean countries (Spain with 21% or Italy with 23% Internet users.)

One can thus speak of three distinct patterns of Internet development in Europe. And while 1999 has shown a definitive establishment of the Internet in Spain, the year 2000 and beyond will demonstrate a clear take-off. Spain is the European country with the second highest growth rate of Internet penetration. Up until now, the Internet has been a tool of luxury, as much as for individuals as for companies, and found itself only on the fringe of society. But the situation is correcting itself. Among other reasons, the primary cause of this correction is the act of liberalising the telecommunications market, which has caused the appearance of nearly 400 different providers. Therefore, with competition increasing, a user can now access the Internet at the urban tariff, regardless of one's geographical location. Apart from fostering the growth of Internet use in Spain, this will also give way to two classes of Internet users: those that will pay for their access with quality guarantees and additional services, and those less demanding users whom are primarily looking for an economical means of accessing the Web. But although this has brought about free access to the web and a considerable lowering in connection costs, Spain continues to have a cost structure superior to that of the rest of Europe.

Use of E-mail (in %)						
	users 1999	additional users 1999-2001	total in 2001	growth 1999-2001	ranking 1999	ranking 2001
Denmark	32,1	20,2	52,3	63	3	5
Finland	36,9	19,3	56,2	52	2	2
France	12,6	18,0	30,6	143	8	8
Germany	17,1	20,3	37,4	119	7	7
Ireland	19,9	34,4	54,3	173	6	3
Italy	10,1	17,9	28,0	177	9	9

Netherlands	31,2	23,0	54,2	74	4	4
Spain	8,5	17,9	26,4	211	10	10
Sweden	40,0	22,0	62,0	55	1	1
U.K.	26,7	23,7	50,4	89	5	6
<i>EUR10</i>	<i>17,5</i>	<i>20,1</i>	<i>37,6</i>	<i>115</i>		
Base: All respondents (n = 7.700), weighted						

One reason explaining why such a small percentage of the Spanish population uses e-mail would be that previously, internet access providers did not include a free e-mail service with the subscription package. Finally, a large number of providers are offering this service with basic Internet access, predicting to cause the high growth rate shown above (211% between 1999 and 2001.) Another pending issue in Spain is that of facilitating access to computers for the general populace. Only 25% of Spaniards have access to computers at home and not all of which have modems with which to connect to the Internet.



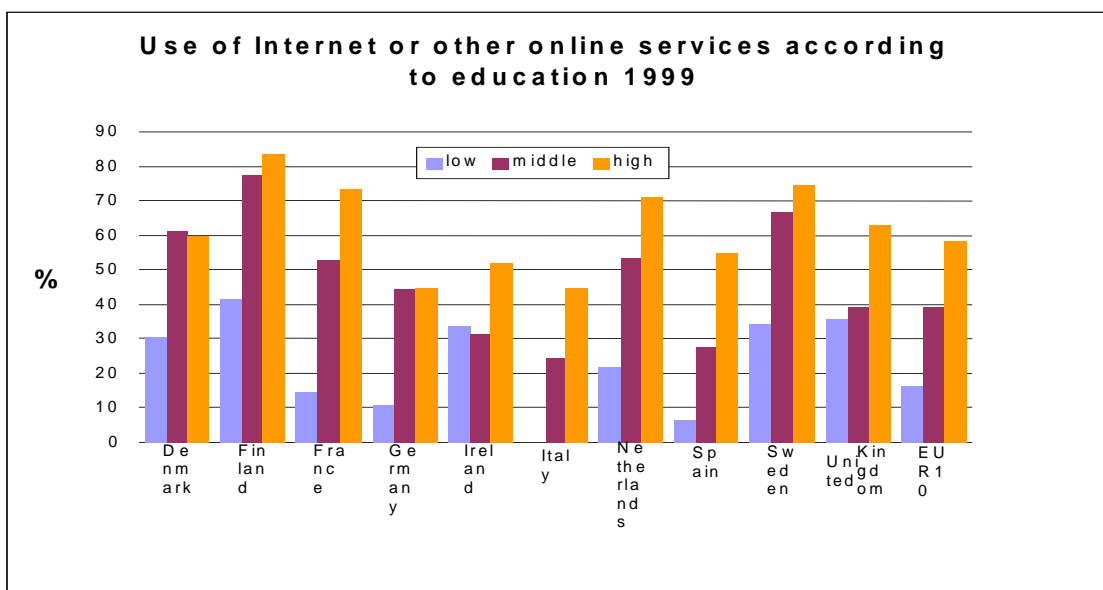
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### 2.1.1.2 Internet use by the population, according to age, sex and educational level

The typical profile of today's Internet user in Spain is a male between the ages of 18 and 40, most likely living in either Madrid or Catalunya. He is college educated, works in a company, and receives a monthly salary of between 150,000 and 350,000 pesetas (the average salary in Spain). He prefers to use the Internet at home, but also connects in the office or at school, and most commonly uses it for e-mail and the World Wide Web.

Use of the Internet or an Other Online Service (Overall) According to Age (in %)					
	<18	18 - 29	30 - 49	50 - 64	>64
Denmark	100,0	80,7	62,5	30,9	5,9
Finland	96,1	93,2	68,6	33,3	8,5
France	61,5	66,5	51,6	38,6	17,2
Germany	60,2	53,2	39,7	22,3	6,0
Ireland	62,5	70,5	31,1	18,7	3,8
Italy	36,4	44,4	27,7	6,1	1,9
Netherlands	73,9	75	61,6	31,3	10,7
Spain	36,4	41,3	18,2	9,5	2,3
Sweden	95,9	92,0	74,8	42,0	8,6
U.K.	75,0	69,8	44,7	28,7	9,9
<i>EUR10</i>	<i>57,2</i>	<i>57,7</i>	<i>40,9</i>	<i>22,8</i>	<i>8,0</i>
Base: All respondents (n = 7.700), weighted					
© empirica 1999					

It is necessary to point out that this profile of the current Internet user will change considerably in the future, due both to the continually larger presence of the Internet in schools and homes and to state policies that mandate the availability of access to the Internet in all levels of education. As previously stated, those that use the Internet are generally young men between the ages of 18 and 40 with a college level education. This can be partially explained by the fact that it is in the universities and work places where one can find the easiest access to the Internet, and where the use of new technologies is fostered. On the other hand, among those younger than 18, only 36.4% access the Internet, because up until now there have not been any state policies that promote the use of information technology in places other than universities and the work place.



That having been said, we also come to the conclusion that in Spain the use of the Internet is still more associated with those parts of the country that are more developed and appears to be reserved for a social elite. As seen below, females are still not significantly represented in the Internet user statistics (1999, males 4.5 million, females 2.2 million). This can be predominantly explained by the fact that compared with women in other European countries, women in Spain have had a much slower integration into every aspect of society, though this is expected to change quite rapidly.

Use of the Internet or an other online service According to Gender 1999 & 2001 (in Millions)				
	male 1999	male 2001	female 1999	female 2001
Spain	4,5	6,9	2,2	4,8

## 2.1.2 Online activities with relevance for electronic commerce: online shopping and banking by the population

### 2.1.2.1 Online shopping

Nineteen ninety-eight was considered the beginning of electronic commerce in Spain. Small businesses have bet the most on the Internet, and have begun seeing it as a new market that can offer them numerous advantages, namely lower prices, faster delivery, and other fringe benefits.

Business-to-consumer electronic commerce still has not taken hold in Spain due to the misgivings that people have with respect to the security of transactions. It is necessary for governing authorities and companies to establish a framework of security guarantees to

reassure potential online consumers, as well as a plan to help familiarize the general populace with the Internet as a tool for electronic commerce.

Use of Online Shopping (in %)							
	regular users 1999	occasional users 1999	overall users 1999	additional users 99-01	overall users 2001	ranking 1999	ranking 2001
Denmark	9,9	9,3	19,2	23,3	42,5	4	3
Finland	9,9	8,0	17,9	26,0	43,9	5	2
France	9,5	10,4	19,9	15,4	35,3	3	5
Germany	6,2	7,6	13,8	12,7	26,5	7	8
Ireland	7,3	5,1	12,4	17,1	29,5	8	7
Italy	3,6	4,7	8,3	9,4	17,7	9	9
Netherlands	11,4	11,0	22,4	18,8	41,2	2	4
Spain	2,1	3,8	5,9	9,1	15,0	10	10
Sweden	12,2	13,5	25,7	28,5	54,2	1	1
U.K.	9,3	7,7	17,0	15,4	32,4	6	6
<i>EUR10</i>	<i>6,9</i>	<i>7,4</i>	<i>14,3</i>	<i>13,7</i>	<i>28,0</i>		
Base: All respondents (n = 7.700), weighted							

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Although Spain is placed last in the table in regards to online shopping (only 2.1% of the population are regular users), one must take into account that electronic commerce has only just begun to take off in Spain. The online shopper, whose profile responds to a city-dwelling, middle-class male, whom has used the Internet for at least 2 years, has stated to be satisfied with the majority of purchases conducted over the Internet. A somewhat higher percentage of Internet users have participated in online shopping at least once.

Acceptance of Online Payment Methods (in %)									
	Transmitting credit card/ account number			Cash on delivery			Internet currency/ E-cash		
	Would accept	Unsure	would not accept	Would accept	unsure	would not accept	Would accept	unsure	would not accept
Denmark	30,6	7,1	62,3	86,2	3,1	10,6	33,3	21,1	45,5
Finland	27,1	14,1	58,8	78,1	6,1	15,7	41,2	29,0	29,8
France	31,5	0,6	67,9	63,8	1,5	34,6	39,2	3,3	57,5
Germany	33,1	5,3	61,6	64,9	2,5	32,6	36,8	16,6	46,6
Ireland	47,1	9,2	43,6	91,0	2,9	6,2	56,7	18,0	25,3
Italy	41,2	17,1	41,7	80,7	7,8	11,5	55,1	20,6	24,3
Netherlands	31,2	5,6	63,1	84,7	2,4	13,0	34,6	13,0	52,5
Spain	42,1	11,2	46,7	78,9	6,6	14,5	53,9	16,7	29,3
Sweden	17,3	2,5	80,1	83,3	2,1	14,7	36,1	18,5	45,5
U.K.	43,2	8,5	48,3	85,5	2,1	12,4	42,3	23,6	34,1
<i>EUR10</i>	36,0	7,3	56,7	75,0	3,4	21,7	42,4	16,2	41,4
Base: All users of online services and respondents interested in online shopping (n = 3.655), weighted									

In regards to methods of payment, cash on delivery is the first choice of respondents (78% would accept), probably because the majority of online shoppers are buying from foreign web sites, and would therefore prefer to pay once their merchandise has arrived. This choice is preferable to both electronic cash and an Internet currency (53%) and credit cards (42%.)

#### 2.1.2.2 Barriers to online shopping

One finds in both the Spanish and other European markets many questions concerning the setbacks in development of electronic commerce. The situation in Spain can seem confusing. The main barriers are:

**Security of the network and Fraud :** The majority of the respondents consider the Internet to be an insecure means of shopping given that they do not know to whom exactly they are giving their information. But they forget that almost nobody has a problem giving their credit card to a waiter in a restaurant, apparently because they are physically present during the transaction. Thus, the lack of physical contact, as well as the

lack of information regarding security protocols and laws governing the Internet, brings about this mistrust.

**Not everything is sold on the Internet (Product characteristics)** : While information concerning numerous products can be found using the Internet, limitations such as weight, volume, distance, and the consequent costs of distribution can impede the online purchase of many products.

#### 2.1.2.2.1 *Other reasons in the Spanish market*

**Habits of the consumer:** This primarily encompasses the people's lack of familiarity with information technology, which carries with it the low penetration of computers in the home and the consequent scarce number of Internet users.

**Communications in Spain are slow and expensive:** This is one of the reasons that the number of connections in Spain is fewer than that of the majority of countries in the European Union. The sluggishness of the online experience can be a huge barrier that prevents people from carrying out purchases on the Internet, raises connection costs for the average individual, and can ultimately result in the abandonment of the medium.

**Insufficient use of the Internet in Spain and a scarce habit of electronic purchasing:** This is one of the primary problems encountered when discussing the advance of electronic commerce in Spain. There are few Internet users as it is, and when you take into account Spaniards need to buy things in person, the resulting market for online shopping is very small.

**The Internet does not speak Spanish:** This is a very important reason for electronic commerce's set back in Spain, and in general, other Spanish speaking countries. With these countries being somewhat behind technologically and slow in their adoption of the Internet, there is a lack of Spanish web pages with respect to other languages. The fact that English dominates the Internet makes it difficult for someone who does not speak the language. In Spain, the majority of people do not speak any languages other than their own, which serves as a major barrier when looking to buy foreign products over the Web.

#### 2.1.2.3 Advantages of online shopping

In Spain, it is mostly the small businesses that are setting up shop on the Internet. These companies have still not truly discovered the advantages that the Internet can offer them, and are using it, as are Spanish individuals, mostly out of curiosity.

Advantages of Online Shopping (in %)					
	<b>More interesting things to buy</b>	<b>Faster</b>	<b>Less Effort</b>	<b>Money savings</b>	<b>None of these</b>
Denmark	55,5	36,6	58,2	34,0	17,1
Finland	47,0	46,0	70,4	33,5	15,7
France	43,5	49,8	46,5	37,7	22,5

Germany	69,4	58,8	72,2	38,8	11,7
Ireland	75,4	67,0	79,3	46,5	7,2
Italy	68,2	68,7	79,9	31,8	8,8
Netherlands	46,2	63,1	64,1	27,2	16,6
Spain	67,4	69,1	83,6	33,6	8,2
Sweden	60,3	71,9	63,9	41,0	11,8
U.K.	58,5	58,0	73,1	40,1	13,7
<i>EUR10</i>	<i>59,5</i>	<i>59,3</i>	<i>68,4</i>	<i>36,8</i>	<i>13,9</i>
Base: All users of online services and respondents interested in online shopping (n = 3.655), weighted					

### Advantages for the customer

Saves time and avoids having to leave the house: As can be seen in the table, 83% of Spanish respondents prefer online shopping because it requires less effort. Not having to leave the house not only is a benefit to the actual consumer, but also consequently lessens traffic, along with the noise and traffic it causes.

Saves money: One must realise that the previous advantage must also be complimented by the saving of money, given the Spanish idiosyncrasy that going shopping is not a necessity, but rather entertainment. Thus, saving money is a key reason for shopping online, with 33.6% of respondents saying it is their primary motivation.

It is a means of obtaining and comparing prices of articles from all over the world: Sixty-seven percent of respondents felt drawn to online shopping due to the type of products they could find, many of which are not sold in the stores of their cities.

#### 2.1.2.3.1 *Advantages for the retailer*

**Allows access to new markets:** The most prosperous businesses on the Web are those that have put into action an Internet strategy in order to draw additional business from new sources.

Works as a great marketing platform: A large majority of companies use the Web to inform potential customers about their business, products, and services, given the Web's easy and cheap way of making information available.

Saving money on physical infrastructure: This is a very important advantage, but is only relevant to those companies that solely conduct business on the Internet.

#### 2.1.2.4 Online Banking

As seen in the table, Spain occupies the final spot insofar as the use of online banking in Europe. The fundamental reasons are the reduced penetration of PCs among the general public, which is much higher in neighbouring countries, and the higher costs of navigating the Internet, both of which affect the number of users willing and able to bank online.

Yet given these facts, today banking entities are fuelling the implementation of new technologies. Home banking has started to become a reality here in Spain, with lower costs, personalised services, and 24-hour availability representing some of the pledges made by the new way of banking. In Spain, the Internet bank has advanced more quickly than expected, pushed forward by initiatives from banks such as Bankinter, Argentaria and BSCH. The pace of the establishment of electronic banking has been dizzying since 1994. In Spain, the pioneer in offering balance inquiries via the Internet was Banesto, which implemented this service in 1995. Today, nearly all Spanish commercial banks and savings banks have a presence on the Web, and of these, 14 allow the execution of inquiries and transactions. The offerings vary among banks, but the typical is a service that is free of charge and available 24-hours a day.

The 21<sup>st</sup> century promises to be a new financial era, for customers as well as for banks, which are being forced to modify their business models and internal structures in order to keep other banks from potentially any part of the world from taking their existing customers. Spanish banks are among those first out of the starting blocks, and have played the lead in some of the most innovative initiatives in Europe, such as Uno-e ([www.uno-e.com](http://www.uno-e.com)), the entirely virtual bank of BBVA (80%) and Terra Networks (20%).

Only Spanish banks are participating in this type of banking, which will put Spain above the majority of the rest of Europe in this ranking. Users are increasingly demanding more and more types of online services, and the advantages for the banks are potentially enormous. To start with, costs should diminish radically, given that an average traditional bank transaction carried out through a bank's call centre costs double that of a completely electronic transaction. Furthermore, the bank's fixed costs related to personnel as well as maintaining physical branches will also greatly be reduced. Banks will also have the opportunity to increase revenues, given that "with the Internet, there is no limit to the market, the world is your market."

Use of online banking (in %)							
	Regular users 1999	Occasional users 1999	All users 1999	New users 1999-2001	All users 2001	Ranking 1999	Ranking 2001
Denmark	9,9	2,8	12,7	19,4	32,1	4	4
Finland	22,5	4,2	26,7	15,6	42,3	1	1
France	7,2	5,0	12,2	15,5	27,7	5	5
Germany	6,5	1,3	7,8	12,2	20,0	6	7

Ireland	2,6	0,4	3,0	13,9	16,9	9	8
Italy	0,9	0,9	1,8	8,6	10,4	10	9
Netherlands	13,3	4,4	17,7	17,9	35,6	2	3
Spain	1,5	2,0	3,5	6,6	10,1	8	10
Sweden	10,4	5,0	15,4	26,6	42,0	3	2
United Kingdom	3,0	2,2	5,2	15,6	20,8	7	6
<i>EUR10</i>	<i>5,1</i>	<i>2,4</i>	<i>7,5</i>	<i>12,9</i>	<i>20,4</i>		
<i>base: all respondents (n=7.700)</i>						© empirica	
1999							

Furthermore, the Internet can help banks achieve customer loyalty, increase revenue with new clients and services, and make themselves available to new markets. The majority of Spanish banks have begun to offer some financial services over the Internet, from verifying balances and deposits to buying shares on the stock market.

In spite of recent advances, there is still much ground to be made, not only for Spanish banks, but for other European ones as well. In the majority of cases, it is still not possible to secure a loan or establish credit over the Internet, nor open a new customer account. But there is no doubt that in the long term, a virtual financial supermarket will be available with a broad range of services.

### 2.1.3 E-mail usage, Internet and online services access and their usage by establishment

Information technology and computers began being used merely as an ancillary means of helping manage a company. Nowadays, technology is an essential, every-day tool used by virtually all companies. As shown in the table, a much larger percentage of medium and large companies provide their employees with access to e-mail, their Intranets and the Internet.

Use of e-mail, Intranets and the Internet in Spanish establishments according to size of organisation in 1999 (in %)					
	0 to 9	10 to 49	50 to 199	200 to 499	500 and more

e-mail	25,4	39,9	65,0	55,0	84,3
Internet-user	37,0	60,2	95,5	95,6	89,7
Intranet-user	7,5	17,2	56,8	60,0	78,4
<i>Base: All establishments (n = 4.158), weighted</i>					

We see a more equal distribution among different sized companies in regards to providing Internet access to employees than in providing the other services. Hence, in small companies (0-9 people with 37% using the Internet), as in large companies (200-499 people with 95% using the Internet), there is a high percentage of employees using the Internet. E-mail usage is also present in companies of all sizes, though is relied upon much more heavily in large organisations (0-9 people firms have 25.4% using e-mail vs. Companies with 500 or more people have 84.3%). As for Intranet usage, it is clear that large companies use them to a much greater extent than small companies, generated by the need for various company branches to communicate and collaborate among themselves. Larger firms may also have employees separated by geographical boundaries, further necessitating Intranet usage.

### 2.1.3.1 Online and electronic commerce activities by establishment

The Spanish market has followed the same guidelines as its European neighbours in regards to which products have been best adapted to electronic commerce and which have the highest sales. The sectors of the Spanish market with the most presence on the Internet are automobiles, communications, publishing, finance, and computers. Nevertheless, those sectors that are realising the most sales online are the media, publishing, computers, and distribution.

Presence on the Internet or Other Online Service According to Industry Sector (in %)								
	Manufacturing etc.		Retail, transport & communication		Financial and business services		Public sector etc.	
	users 1999	additional users 2001	users 1999	Additional users 2001	users 1999	additional users 2001	users 1999	additional users 2001
Denmark	47,8	24,2	62,3	16,3	58,6	17,1	56,3	20,0
Finland	56,3	26,2	60,8	15,7	62,3	9,0	82,0	13,4
France	30,2	21,8	22,8	18,7	35,2	27,1	17,6	23,6
Germany	52,9	17,3	40,9	26,2	42,0	16,0	47,4	32,9
Ireland	43,4	18,9	43,4	11,5	46,6	24,0	58,1	17,2

Italy	26,8	22,7	17,7	14,5	26,9	16,0	22,6	19,7
Netherlands	33,7	25,8	65,7	11,4	57,1	21,4	33,3	22,5
Spain	37,9	21,2	35,7	21,8	61,3	14,4	49,8	16,8
Sweden	40,4	28,8	52,0	16,2	70,9	9,2	58,6	15,5
U.K.	52,2	19,0	43,7	21,4	71,2	11,6	63,6	14,8
<i>Total sample</i>	41,8	21,7	39,7	18,6	49,4	18,3	49,1	19,6
<i>EUR10</i>	42,4	20,5	35,3	20,3	46,6	18,2	43,3	22,1
<i>Base: All establishments (n = 4.158), weighted</i>								

Given that the majority of companies in Spain are small businesses, it is a positive sign that these companies are beginning to include electronic commerce in their business strategies. They are using the Internet as a platform to reach new and larger markets, especially those abroad. Large companies are also investing in the Internet, while using it for publicity and promotional campaigns. Other companies are not using electronic commerce initiatives as part of their business strategies, primarily dabbling in the Internet in an experimental way.

While certain industry sectors have a larger presence on the Web, it should be pointed out that more than half of all Spanish companies directed to the end consumer have Web sites, and about half of those companies have established the use of electronic commerce. As has been previously stated, very few companies use the Internet medium to its full potential, though many hope to in the near future. The primary motives that these companies have in setting up Web sites are to improve their company image and to improve customer service.

### 2.1.3.2 Barriers to online sales procurement

For the most part, Spanish companies have a common problem, that being the lack of a definitive online strategy, instead implementing haphazard approaches to the Internet. Furthermore, in Spain there is a scarcity of professionals who can articulate a true understanding of electronic services.

The principal barriers are:

**No Need** :Many Spanish companies still do not consider the Internet as genuine way of opening and augmenting their markets, rather they believe it is only a means of providing publicity, and thus, to not see the necessity of investing in electronic commerce, so they think that they do not need this channel to improve their sales.

**Demands a new strategy, new business plan, and the ability to select products well:**  
As previously stated, in Spain Internet sales are primarily due to the extensions of already existing stores. The majority of these stores do not have new strategies or business plans to truly take advantage of the Web.

**Logistics:** Companies that are interested in selling online underestimate this aspect. They concentrate more in mere selling and pay little attention to the delivery, and it is here where customer satisfaction and loyalty are established. In this manner, companies that do not commit equal resources to the completion of orders as they do to sales, fail in their attempts at using electronic commerce because clients do not return and expenses are not covered.

**Demands an electronic infrastructure:** This infrastructure is the factory that makes possible the sale of goods, any many companies are unaware of the investment necessary, proving a major barrier to potential electronic businesses.

In summary, it is evident that the majority of Spanish companies do not conduct business over the Web. Nor are they going to start to conduct business over the Web while they still maintain the following characteristics: lack of vision for the business, inability to plan for the global market and lack of sufficient investment. Spanish companies continue to lack the aggressiveness of American firms in their valuation of technology investment.

## 2.2 Telework

### 2.2.1 Penetration and Growth of Teleworking

*The boom of teleworking in Europe has not arrived in Spain.*

Currently more than six million Europeans conduct their jobs outside of their traditional workplaces using new information technology (computers interconnected via telecommunication connections.) These are the habitual teleworkers, those that take part in this new way of working at least one entire day a week. But the attractiveness of teleworking brings in another three million Europeans who work at home every once and a while, although without reaching the frequency of once a week. They are the occasional teleworkers, whom when taken together with the regular teleworkers, amount to eight million teleworkers in EU 10.

Number of Teleworkers in Europe 1999			
	regular teleworkers	supplementary teleworkers	total including supplementary
Denmark	176.000	104.000	280.000
Finland	229.000	126.000	355.000
France	499.000	136.000	635.000
Germany	1.562.000	570.000	2.132.000
Ireland	26.000	35.000	61.000

Italy	584.000	135.000	720.000
Netherlands	593.000	451.000	1.044.000
Spain	259.000	97.000	357.000
Sweden	313.000	282.000	594.000
UK	1.273.000	754.000	2.027.000
<b>EU 101</b>	<b>5.515.000</b>	<b>2.690.000</b>	<b>8.205.000</b>

The table puts the total figure of teleworkers in Spain at 357,000. Focusing on the regular teleworkers, they can be categorised as consisting of 75% that work in their own homes (63% salaried employees and 12% self-employed) and 25% that are mobile teleworkers. These figures state that a mere 2.8% of the Spanish workforce telework, as compare to 6% of the European workforce.

Teleworkers in Europe 1999 in % of Workforce			
	regular teleworkers	supplementary teleworkers	Total including supplementary
Denmark	6,58	3,90	10,48
Finland	10,80	5,96	16,77
France	2,25	0,61	2,87
Germany	4,43	1,61	6,04
Ireland	1,88	2,56	4,44
Italy	2,92	0,67	3,59
Netherlands	8,25	6,27	14,53
Spain	2,04	0,77	2,81
Sweden	7,98	7,19	15,17
UK	4,78	2,83	7,62
<b>EU 10</b>	<b>4,11</b>	<b>2,01</b>	<b>6,12</b>

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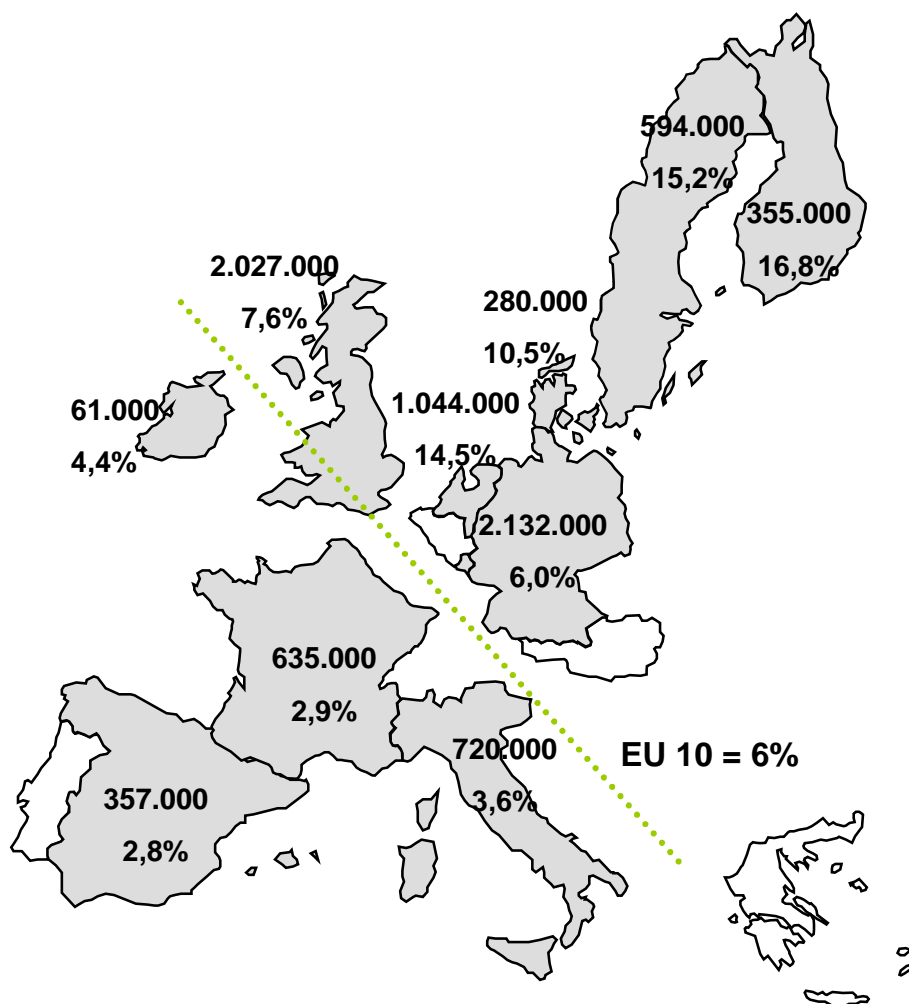
**1** These figures represent the average of the 10 European countries included in the study

According to the data obtained, Spain is the country where this form of working has least implanted itself, though in relation to the size of its workforce, its figures are nearly the same as those of France.

There are significant differences between the majority of European countries in regards to the level of penetration of teleworking. Looking at the figures, the 10 countries studied can be placed into two groups according to the penetration of teleworking:

those countries with a significant amount of the workforce teleworking, figuring above the European average. Within this group, Germany would be at the lower limit, coinciding with average figure.

those countries with a scarce amount of teleworking, with figures that reside well below the European average. Spain, together with France, Italy and Ireland would be part of this group.



### 2.2.2 Potential Interest and Knowledge in Teleworking

*Teleworking is still a little-known phenomenon in Spain.*

While there may be a few people who are teleworking and do not even know it, this is probably not true in the majority of cases. What is true is that only 57 out of 100 workers in Spain are aware of teleworking, while in all of Europe the figure is 72.

The majority of Spanish workers do not consider the possibility of teleworking

According to figures provided by EcaTT, only 13% of those Spanish workers who are aware of teleworking say they have considered teleworking themselves, while 44% do not consider it a good alternative to the traditional way of working in the office.

People with Awareness and Consideration of Teleworking in % of Workforce			
	Aware and already considered	Aware but not considered	total
Denmark	32,2	49,9	82,1
Finland	44,8	49,0	93,8
France	13,9	55,0	68,9
Germany	17,9	52,0	69,9
Ireland	16,7	40,1	56,8
Italy	31,4	43,2	74,6
Netherlands	39,4	48,6	88,0
Spain	13,5	43,9	57,4
Sweden	35,1	58,8	93,9
UK	19,4	39,9	59,3
<b>total</b>	<b>24,7</b>	<b>47,7</b>	<b>72,4</b>

### *Teleworking raises little interest in Spain*

The level of interest that has been roused in teleworking in Spain is about 65%, the lowest level in the 10 European countries studied and 5 percentage points below the European average.

Interest in Telework Overall in % of Persons in Paid Work and Looking for Work			
	in paid work	looking for work	both

Denmark	70,93	87,07	72,18
Finland	74,49	66,58	73,88
France	64,78	78,05	66,79
Germany	64,75	73,56	65,82
Ireland	71,80	81,49	73,17
Italy	69,48	79,13	71,46
Netherlands	75,35	78,13	75,63
Spain	60,56	76,26	64,98
Sweden	86,47	95,48	87,05
UK	64,75	74,77	65,77
<b>total</b>	<b>69,02</b>	<b>77,66</b>	<b>70,22</b>

The interest in teleworking manifested in Spain shows itself to be consistently lower than that in other European countries in all variables considered. Nevertheless, there are two aspects which call for a little optimism:

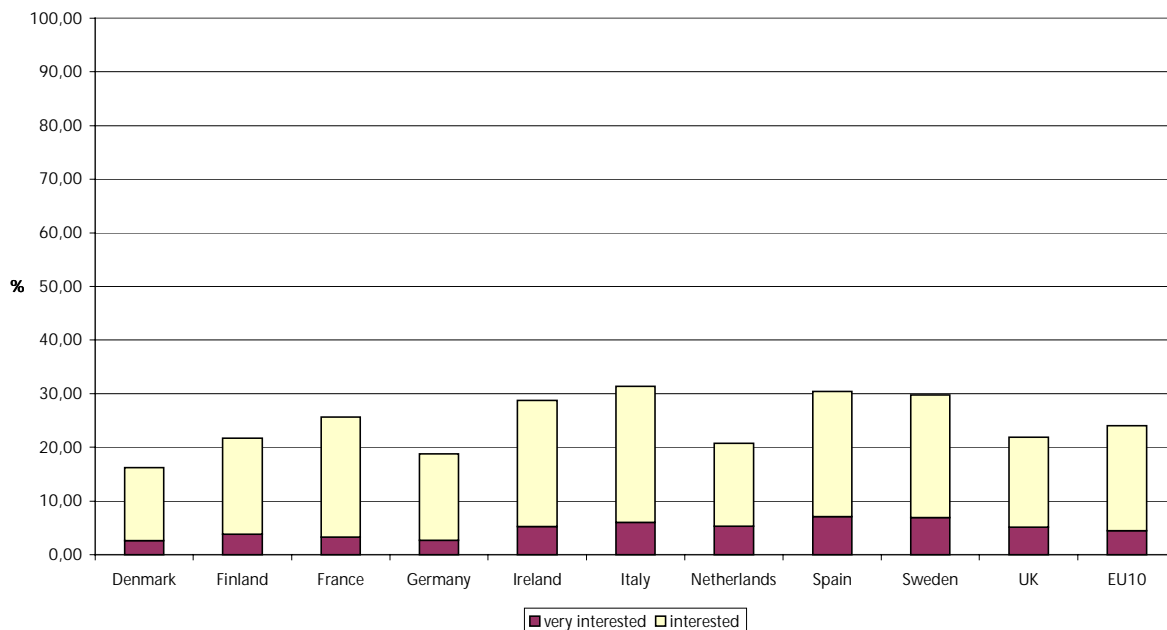
#### **The interest expressed towards teleworking for those people looking for jobs.**

This group not only approaches interest level figures of the European average, but also surpasses the levels of such countries as Finland, Germany, and the United Kingdom. This represents a definite potential for the development of teleworking in Spain.

#### **Interest in working in telecentres.**

Although Spanish workers do not seem to be particularly interested in the different forms of teleworking from the home, there is strong interest in the possibility of working in telecentres. Spain, together with Italy, has the highest levels of interest in the study.

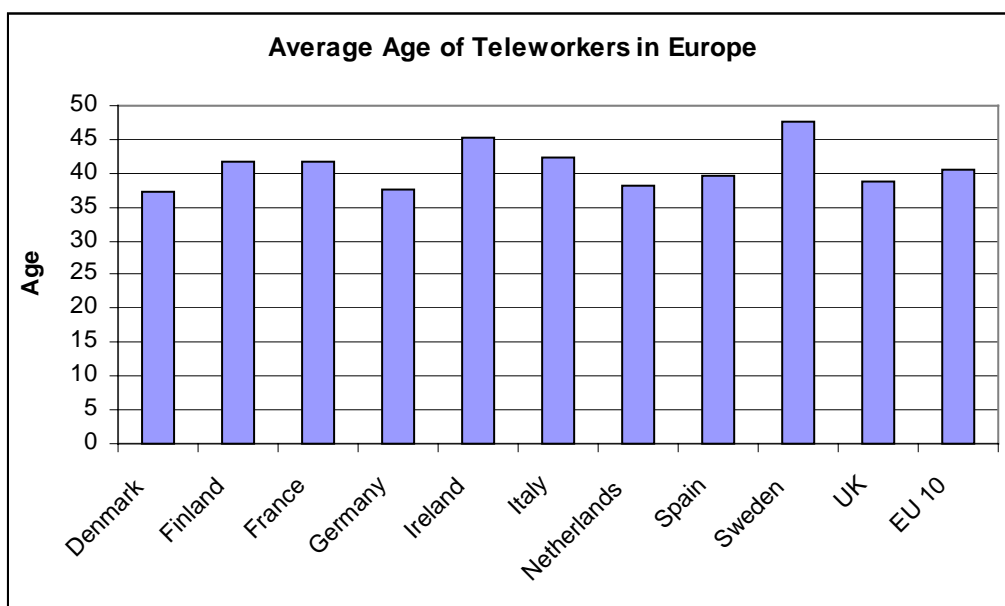
Interest in Work in Telecentres in % of Workforce



### 2.2.3 Characteristics of teleworking and teleworkers

*Teleworking is not only a phenomenon for the young.*

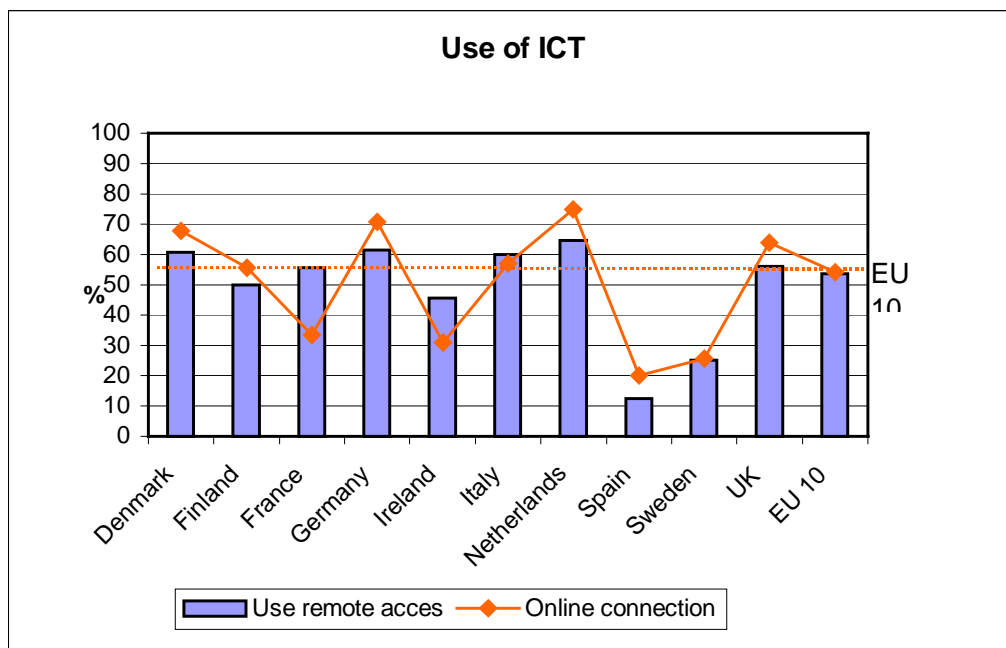
European teleworkers, as well as those in Spain, on average, are about forty years old. Although the average age of teleworkers in each European country varies, these differences are not particularly significant. The extremes find themselves in Sweden, where the average age is closer to fifty, and Denmark and Germany, where the teleworkers are the youngest, with an average age of thirty-seven.



There is an underutilisation of new information and communication technology on the part of Spanish teleworkers.

Continuing technological advances in the fields of communications and information technology are major factors in the development of teleworking. As teleworking continues to be adopted by companies that give their employees the option of working at home, these companies will need to redefine many operational and organisational aspects of their business.

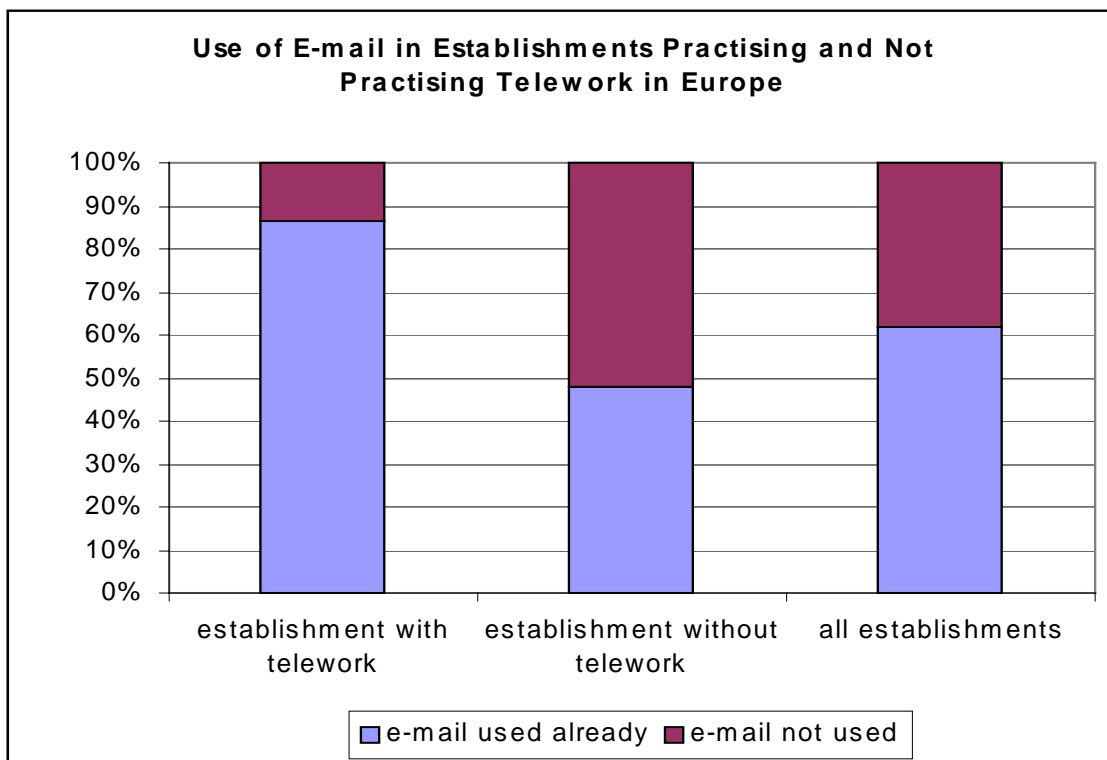
The use of online connections and remote access are two applications of new communication technology that are inherent in teleworking, providing the ability to work in the home, in telecentres, hotels, airports and even on the highway.



According to the results of the EcaTT survey, Spanish teleworkers barely use these new forms of communicating and obtaining information. Only 13% use remote access and 20% use online connections, figures that prove Spain to be a great distance from the usage levels of other European nations studied.

Email has been widely accepted in Spain.

Another breakthrough to emphasise is the development of email. Although it is true that email usage is widespread regardless of whether or not a company takes part in teleworking, it is those companies that use teleworking where email is predominant.



The use of email in this example has a double significance:

as a representation of the up-to-date position of companies en regards to modes of communicating in the global society

as a key aspect in teleworking and the new communication needs that make it feasible

Spanish companies find themselves at a competitive level in regards to email usage, above average in companies as a whole, and in companies that use teleworking. Sixty-five percent of Spanish firms use email as a regular form of communication, a figure that puts them above their French, Italian, and German counterparts. Among companies that take part in teleworking, this percentage jumps to ninety percent.

Use of E-mail in Establishments (in %)		
	Establishments with e-mail in %	establishments with telework using e-mail in %
Denmark	85,18	97,72
Finland	87,58	95,42
France	39,90	60,65
Germany	61,18	91,79
Ireland	76,02	91,15

Italy	50,83	83,26
Netherlands	75,00	92,75
Spain	65,14	89,98
Sweden	83,20	93,33
UK	75,32	91,81
<b>EU10</b>	<b>61,73</b>	<b>86,48</b>

## 2.2.4 Telework practise by establishments

### *Spanish companies barely practise teleworking*

Telework has still not caught on in the mentality of Spanish employers, as indicated by the small proportion of establishments that are putting it into practise. Only one in six establishments uses telework on a regular basis, while one in five uses it occasionally. This puts Spain in ninth place in the ranking of European countries in regards to the level of penetration of teleworking in their companies, ranking above only Italy.

Establishments Practising Telework in Europe 1999 (in % of All Establishments)				
	supplementary excluded		supplementary included	
	%	ranking	%	Ranking
Denmark	47,16	2	57,88	3
Finland	48,16	1	59,33	2
France	31,69	7	35,00	7
Germany	25,45	8	29,90	8
Ireland	32,60	6	39,09	6
Italy	15,25	10	17,21	10
Netherlands	35,67	5	46,00	5
Spain	17,59	9	20,02	9
Sweden	43,25	4	61,65	1
UK	43,47	3	54,98	4

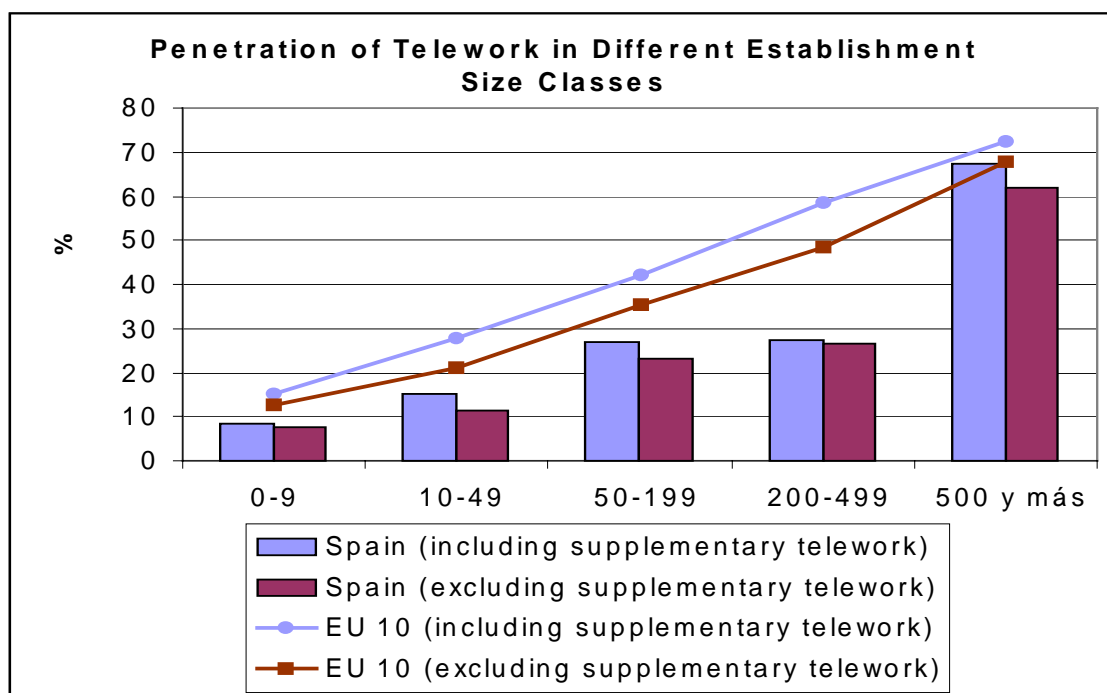
EU 10	29,70		35,80	
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This scarce presence of teleworking in Latin companies is reflected in almost all of the variables considered in the survey conducted by EcaTT, with the lowest figures according to:

- the type of telework
- the business sector
- the type of region
- the number of years having used teleworking
- the size of the companies

The only variable that breaks the rule is in regards to assignments carried out by means of teleworking. When it comes to IT and programming, Spanish companies continue to have a low penetration with telework; but in the rest of the assignment types considered in the survey, Spain surpassed other European countries, especially in distribution and customer service.

It is also necessary to point out another standout from the trend in relation to telework and the size of companies: the practice of teleworking in Spanish and Italian companies with more than 500 employees is greater than that of companies of the same size in other European countries.



One should recognise that although the current practice is scarce, telework has begun to spark interest in Spanish employers as a whole. According to the information obtained, eleven in every one hundred business owners has expressed interest in introducing

teleworking in his/her company, a figure almost equal to that of European business owners.

And in many cases, this interest is not only a declaration of good intentions, but rather concrete plans for introducing telework. In Spain, half of the companies who expressed interest have already started to plan telework projects. This significant proportion is only surpassed by Germany, Denmark and Holland.

Interest in Telework (Incl. Supplementary Telework) in % of All Establishments in Europe 1999			
	concrete plans for introduction	Interest in introduction only	total interest
Denmark	5,27	6,02	11,29
Finland	1,54	9,19	10,73
France	4,43	7,02	11,45
Germany	5,61	11,57	17,18
Ireland	3,58	8,68	12,26
Italy	2,34	7,95	10,29
Netherlands	5,00	7,67	12,67
Spain	4,49	6,06	10,55
Sweden	2,17	4,47	6,64
UK	2,08	3,75	5,83
<b>Total</b>	<b>3,70</b>	<b>7,25</b>	<b>10,95</b>
<b>EU10</b>	<b>3,90</b>	<b>7,61</b>	<b>11,51</b>

### 2.2.5 Barriers to telework

*The development of telework goes hand in hand with a change in mentality on the part of business owners*

Problems concerning the security of information constitute the primary obstacle for the advancement of telework. Yet, given the current accelerated rate of innovative technology development, a solution to this problem should not be too long in coming. Nevertheless, there exists a much larger barrier related to attitudes and behaviour that takes a greater amount of time to change than technology.

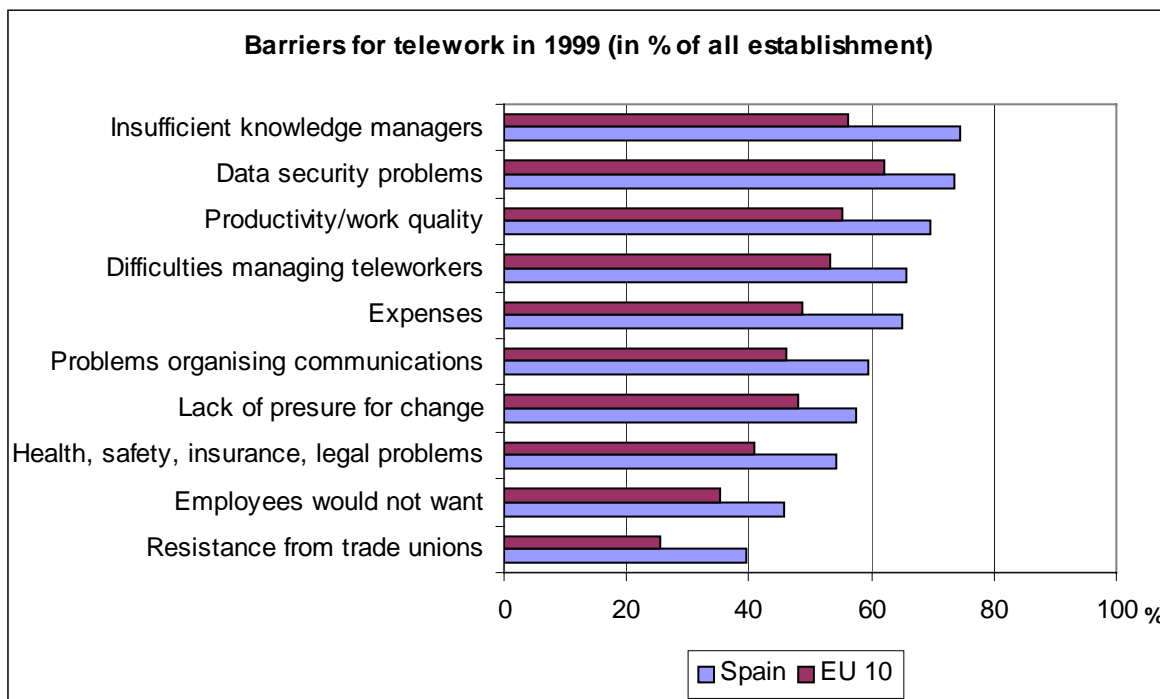
Teleworking carries with it an alteration in the way of working and relating with people, from management and supervision to planning and communication, requiring some type of restructuring of the organisation. With these changes can emerge security doubts, lack of trust, and ultimately, a resistance to change.

There always appear new ways of doing things, which would have one assume that new skills would also appear to cope with and confront them with success. The unfamiliarity with new management skills is exactly one of the arguments given by employers as a reason for not implementing telework. The lack of trust in the quality of work done by employees, as well as the difficulty in managing teleworkers from afar, are other claims used as barriers to introducing these new forms of working in a company.

Barriers for Telework in Europe 1999 (in % of All Establishments)										
	insuffi- cient know- ledge mana- gers	expen- ses	Produc- tivity/ work quality	diffic- ul- ties man- a- ging tele- wor- kers	pro- blem s orga- ni- sing com- mu- nica- tion	health , safety , insu- rance, legal pro- blems	data securi- ty pro- blems	lack of pres- sure for chang- e	Emplo- -yees would not want	resis- tance from trade union s
Denmark	45,61	46,33	38,22	36,01	36,59	30,34	51,47	31,76	33,46	15,53
Finland	44,45	38,25	39,01	40,73	34,60	22,48	52,96	45,18	23,14	12,34
France	60,69	55,81	66,94	66,92	62,92	52,96	77,12	60,97	50,37	47,44
Germany	37,93	42,26	42,00	41,83	34,72	27,83	52,53	50,11	40,35	13,68
Ireland	68,11	58,26	66,94	66,18	54,63	49,97	63,99	52,55	33,65	25,28
Italy	62,77	39,93	51,94	48,97	41,42	35,10	58,35	42,30	26,18	31,07
Netherlands	51,00	32,67	59,33	50,00	42,33	38,33	54,33	41,00	23,00	18,67
Spain	74,43	65,02	69,70	65,58	59,46	54,18	73,38	57,53	45,70	39,50
Sweden	55,28	47,01	52,75	49,60	37,48	44,64	67,65	39,61	37,15	26,65
UK	55,16	52,38	58,58	58,93	45,78	45,26	61,16	49,19	31,01	15,40
<b>Total</b>	56,24	48,72	55,28	53,40	45,93	40,82	61,96	48,08	35,39	25,59
<b>EU 10</b>	<b>54,1</b>	<b>48,1</b>	<b>54,9</b>	<b>53,5</b>	<b>45,7</b>	<b>40,3</b>	<b>61,8</b>	<b>50,0</b>	<b>37,0</b>	<b>25,4</b>

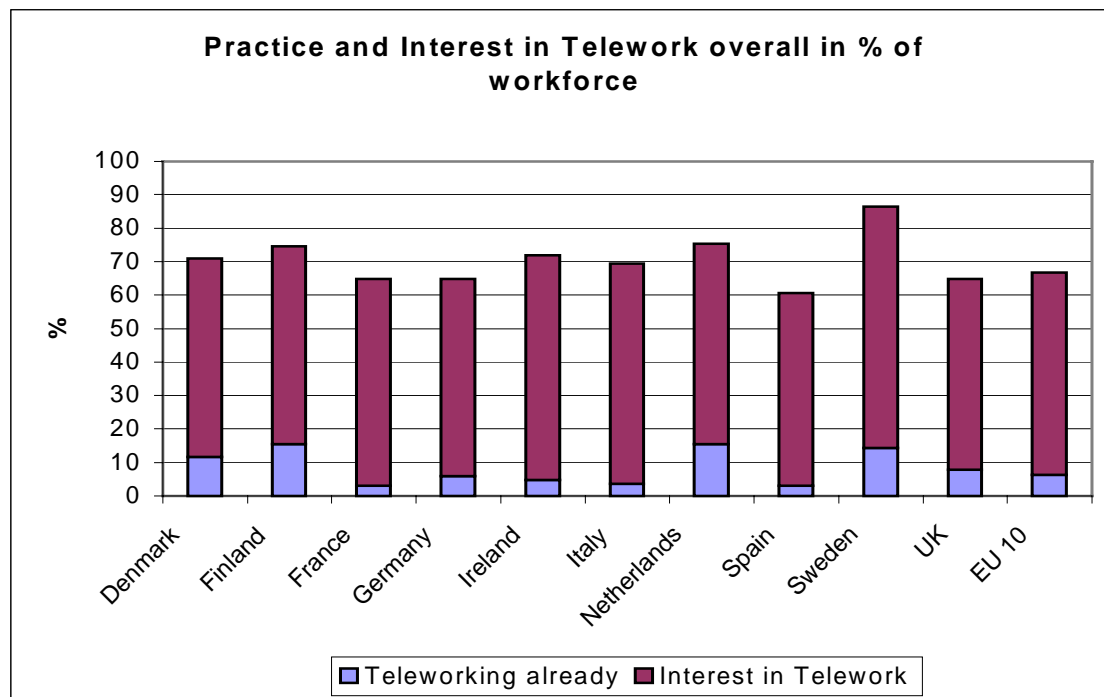
*The barriers to teleworking are greater in Spain than in the rest of Europe*

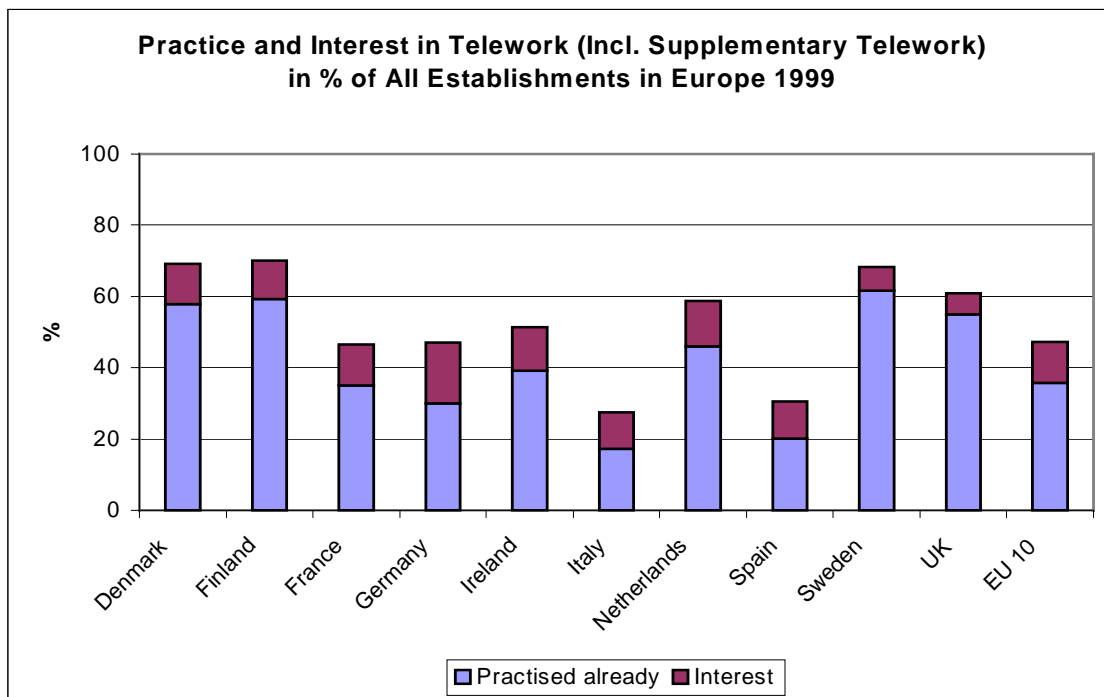
The fears and resistance towards telework are manifested to a greater extent in Spain than in its European neighbours, though in some aspects, France measured equally or higher.



### 2.2.6 Potential, Tendencies, and Prognosis of Telework

Telework's great leap in Europe still has not truly become a reality, although the possibilities are numerous given the interest expressed by workers and companies alike.





Both the present (current use) as well as the future (expressed interest) of telework are very different in each European country, depending upon how long the practice of teleworking has been in place in the country. In this move towards telework, begun a few years ago, the Nordic countries find themselves at the top with while Spain is still on the tail end of European countries.

With the goal of improving the advancement of teleworking in Europe, certain barriers must be knocked down, among them:

A greater development of the technology that will promote trust in the system, both in regards to security as well as quality.

A change in mentality of all parties involved: the employees who are potential future teleworkers; businessmen and officials, in charge of making the decisions necessary to successfully implement telework programs; the trade unions, who must rethink their role in the new work world; and in the state agencies, in charge of establishing an adequate legal framework for teleworking.

## 3. CONCLUSIONS

### 3.1 E-Commerce

There are more than 150 million Internet users in the world, and two and half million in Spain. Regardless of the Internet being called the medium of the masses for the 21<sup>st</sup> century, it is evident that the supposed “boom” of electronic commerce only exists in the United States, and that European countries, especially Spain, have a long way to go.

In Spain, the acceptance of the Internet is taking longer than in other European countries, especially among the general public. It will be some time before new generations, with an education more oriented towards information and communication technology, become true electronic consumers. It will also take a while until the Internet’s potential as an efficient channel for exchanging goods and services meets the expectations of those Spanish firms that have begun to invest in electronic commerce.

It is thereby necessary to make the Spanish public computer literate, and allow them to see the innumerable advantages and services that the Internet makes available to them.

The Internet phenomenon in Spain began in about 1993, but it was not until 1998 that there was a clear takeoff. But in 1999 Spain has reached the most important and definitive step: the majority of companies that have an active presence on the Web are now planning to sell the products and services over the Internet.

It is the medium-sized and large Spanish companies that are actually betting on online sales. The companies appreciate the Web primarily as an ideal channel in which to broaden their target markets, and secondly as a means of improving customer service, especially during non-business hours. Spanish companies’ investment levels in the Internet is marked by various phases, from a purely informational Web page, to a Web page that provides certain simple services, to a fully interactive Web page that augments the client-company relationship.

While investment in electronic commerce infrastructure is increasing, there are still a number of barriers that need to be overcome to mount a true Internet explosion. For the most part, Spanish companies lack a concrete business plan adapted for electronic commerce, while others merely dabble in Internet technology, seeing it as a small way of complimenting their traditional business. Other barriers include the low quality of the network infrastructure, making access slow and expensive, the scarce number of PCs connected to the Internet, and the lack of technological know-how of many businessmen.

Finally, electronic commerce in Spain has only been around for relatively little time, and while the current figures show Spain to be somewhat behind its European neighbours, Spain has the means and organisations available to greatly advance during the next couple of years. It is agreed upon by firms that use electronic commerce that there will not be an explosive growth in Internet commerce in Spain, but rather a more gradual growth that will largely depend upon future generations’ acceptance and adoption of an Internet society.

## 3.2 Telework

From an employee perspective, they not only take little part in practising telework but also show a lack of interest or even knowledge of its existence, leaving Spain far from the average of European countries studied. The employers themselves do not fare much better. Telework projects are scarce, and there is much ground to be made in the mentality of companies, especially small and medium-sized businesses, if teleworking is to become a feasible alternative to traditional working.

Nevertheless, there are reasons to be optimistic. Firstly, while the numbers may be small now, there is increasing interest in the possibility of teleworking, from employees and employers alike. Secondly, the dynamic growth in the telecommunications sector in Spain in the last few years will establish a favourable atmosphere and adequate infrastructure for putting teleworking into practice. Finally, the increasing importance of technology in everyday life, as exemplified by the explosion of Internet use, email, and mobile telephones, will undoubtedly plant the necessary seed for the growth of teleworking in Spain.

In Summary:

Telework is a little-known phenomenon in Spain, among both the public and business owners. The interest in teleworking that seems to have been aroused in Europe still does not seem to have caught on very strongly in Spain, with its growth rate somewhat below that of its neighbours.

The development that telework is having in Spain is centred around two principal stances: one theoretical (pilot projects defined by community initiatives) and one practical (independent teleworkers, due to the growth of self-employment in Spain.)

The existence of teleworking is not given much notice in Spanish companies. Only in some larger companies, primarily multinationals, are they putting in practise the option of teleworking. In the majority of small and medium-sized Spanish companies, business owners either lack the information necessary to implement teleworking, or are unwilling to modify their organisations or management approaches, greatly slowing the spread of teleworking in Spain.

Business owners and employees alike have shown substantial resistance to modifying their current models of working. Nevertheless, among those workers who have begun to change their mindset, the possibility of teleworking is becoming increasingly more attractive.

While teleworking is mostly done by the self-employed, it is also starting to take hold among workers who are company-dependant, in cases where the company is attempting to retain personnel or save money.

In Spain, the availability of communication services and computer equipment is greater every day, with prices continuing to fall. Yet this situation will have to continue to progress, especially in regards to speed and capacity, for telework to become more widespread.

The institutional support in Spain that favours the extension of telework has proven fruitful, especially in regards to advanced telecommunications services in underprivileged regions and the push for a creation of networks for small businesses. These actions should

be continued with the assurances of involvement from the private sector, to be used as an initial push, but also as a way to eliminate the “subsidy culture” so deep-rooted in Spain.

Telework and self-employment, a common combination in the Spanish case, demand a high level of qualification and imply the appearance of new professional and personal competencies. Continued training in these competencies will be fundamental in the future development of telework in Spain.

## 4. ANNEX

### 4.1 E-COMMERCE

#### SHOPS

- Fundación García Lorca  
[www.garcia-lorca.org](http://www.garcia-lorca.org)
  
- Esquí Barrabés  
[www.barrabes.com](http://www.barrabes.com)
  
- Mango  
[www.mango.es](http://www.mango.es)
  
- Gastón y Daniela  
[www.gastonydaniela.com](http://www.gastonydaniela.com)
  
- **Index of Virtual Shops in Spain**  
[www.tingloop.com/tingloop/tiendas.htm](http://www.tingloop.com/tingloop/tiendas.htm)

#### MUSIC

- Música  
[www.musicpark.com](http://www.musicpark.com)
  
- Guía MP3  
[www.members.xoom.com](http://www.members.xoom.com)
  
- MUSICES.COM  
[www.musices.com](http://www.musices.com)

### AUCTION

- Netxum.com, subastas inversas

[www.netxum.com](http://www.netxum.com)

- Ansorena Subastas

[www.ansorena.es](http://www.ansorena.es)

- Castellana Subastas

[www.castellanasubastas.com](http://www.castellanasubastas.com)

- The Globe Gallery

[www.theglobegallery.com](http://www.theglobegallery.com)

### ART

- María Manzanera

[www.xli.net/manzanera](http://www.xli.net/manzanera)

- MAGIC WORLD

[www.members.estripod.de/kuk](http://www.members.estripod.de/kuk)

### NEWSPAPERS

- Digital Newspaper

### PORTALS

- Terra

[www.terra.es](http://www.terra.es)

- Airtel

[www.navegalia.com](http://www.navegalia.com)

- Jazztel

[www.ya.com](http://www.ya.com)

- Retevisión

[www.alehop.com](http://www.alehop.com)

### GAMES

- Todojuegos

[www.todojuegos.com](http://www.todojuegos.com)

- The Sibilas Game

[www.ciberjob.org/sibilas/sibilas.htm](http://www.ciberjob.org/sibilas/sibilas.htm)

### ON-LINE BANKS

- BBV

[www.estrelladigital.es](http://www.estrelladigital.es)

[www.bbv.es](http://www.bbv.es)

- El País

[www.elpais.es](http://www.elpais.es)

- BCH

[www.bch.es](http://www.bch.es)

- El Mundo

[www.elmundo.com](http://www.elmundo.com)

- Argentaria

[www.argentaria.es](http://www.argentaria.es)

- Internet Newspaper AUI

[www.aui.es](http://www.aui.es)

- Banesto

[www.banesto.es](http://www.banesto.es)

- Spanish Poetry

[www.personal2.redestb.es/ea5cph](http://www.personal2.redestb.es/ea5cph)

- Banco Popular

[www.bancopopular.es](http://www.bancopopular.es)

- Uno-e

[www.uno-e.com](http://www.uno-e.com)

## SPANISH GASTRONOMY

## WOMEN

- Information Spanish Wine Centre

[www.elvino.com](http://www.elvino.com)

- Spanish coordinator for European Women Lobby

[www.celem.org](http://www.celem.org)

- TRICO

[www.trico.com.mx](http://www.trico.com.mx)

- Women on the NET

[www.nodo50.ix.apc.org/mujeresred](http://www.nodo50.ix.apc.org/mujeresred)

- A Fuego Lento

[www.afuegolento.com](http://www.afuegolento.com)

## BOOKSHOPS

- Crisol: the spanish amazon

[www.crisol.es](http://www.crisol.es)

- Librería virtual española

[www.interbook.es](http://www.interbook.es)

## EXPERTS IN E-COMMERCE LAW

- Stephenson Harwood

Expert: Mr. Beltrán Domecq

[beltran.domecq@stephensonharwood.com](mailto:beltran.domecq@stephensonharwood.com)

Expert: Mr. Jason Flint

[jason.flint@stephensonharwood.com](mailto:jason.flint@stephensonharwood.com)

## TOURISM

- [www.turismoyaventura.com](http://www.turismoyaventura.com)

- Tourism youth office TIVE

[www.comadrid.es](http://www.comadrid.es)

- [www.madridhoy.es](http://www.madridhoy.es)

- Ocio guide of Spain

[www.lanetro.com](http://www.lanetro.com)

- Andalusian Shop

[www.andalucianshop.com](http://www.andalucianshop.com)

- OCIOTECA

[www.ocioteca.com](http://www.ocioteca.com)

## 4.2 TELEWORK

### ASOCIATIONS

- Spanish Asociation of Telework (A.E.T.) <http://www.ciberteca.es/aet>
- Catalan Association of Telework <http://www.interfad.es/act/index3.htm>
- Spansish Forum of Telework <http://www.festel.org/>
- teleworker Association of Extremadura <http://www.abaforum.es/pibarra/ate/>
- ASETRA, Spanish Association of employment, self-employment and Telework (Asociación Española de Empleo, Autoempleo y Teletrabajo) <http://www.arrakis.es/~grinco/>
- AVIT- Virtual Telework Association of Castilla y Leon <http://www.fueva.uva.es/avit>

### SEARCH OF TELEWORK

- Virtual Agency of employment (Project Temple) <http://www.teleempleo.org>
- Employment Offerts <http://www.essodo.com/teletrab/>
- Work <http://teleworkmatica.cin.es/>

### FOROS

- "telework and virtual organitation" <http://www.rediris.es/list/info/teletrabajo>
- Spanish Forum of Telework <http://www.ciberaula.com/teletrabajo/conten ts/TOC.htm>
- Forum español de Teletrabajo <http://www.festel.org>

## GENERAL RESOURCES

- European Telework Initiatives in Spain

<http://www.eto.org.uk/nat/es/indexesp.htm>

- MIRTI Project

<http://www.telework-mirti.org>

- Fondo Formación Asturias

<http://www.cfnti.net/horizon/ditic>

## REDIRIS

<http://listserv.rediris.es/archives/teletrabajo.html>

- Teleworks Courses

<http://www.fortel.org/>

- Labour Information

<http://www.lainter.net/teletrabajo/>

- general Information

<http://www.unisys.es/customer/telework.htm>