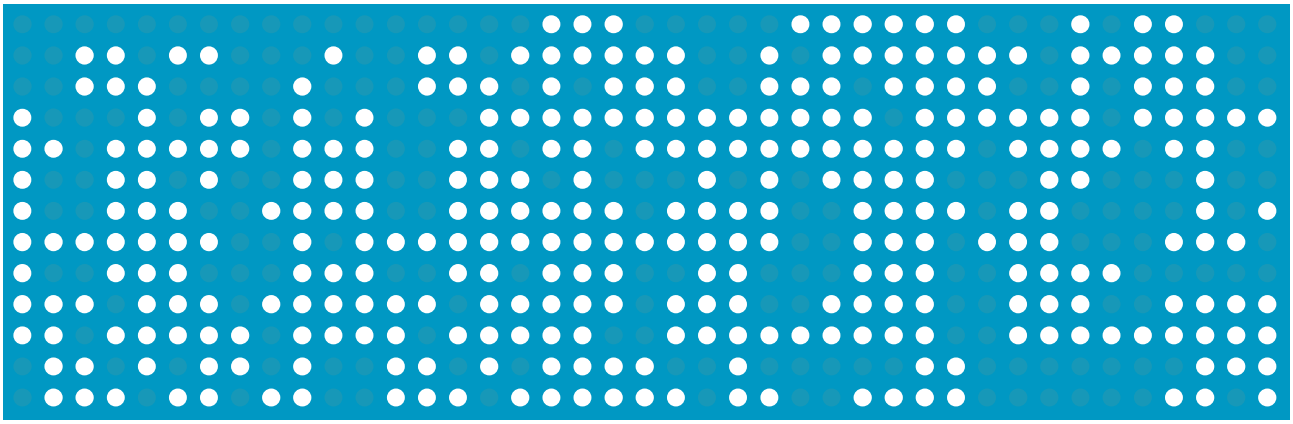
The Networked Society 2008 Annual Report. 2009 Edition



October 2009

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FOREWORD

Information and communication technologies (ICTs) contribute decisively to enhancing citizens' quality of life and to driving productivity and competitiveness in companies. The study "The Networked Society 2009" (La Sociedad en Red 2009) reveals the intensification in the use of these technologies in Spain in recent years, including the incorporation of new users as well as the transformation and specialisation of the activities of existing users.

Spanish society is therefore already an information society, and citizens and companies in Spain increasingly perceive the benefits derived from them more clearly. This process is clearly illustrated with examples shown in this report, such as the significant growth in the use of tools such as digital signatures, the integral management of procedures via e-Administration, the high growth rate of mobile broadband, ICT support in healthcare systems, education on the internet and the higher number in the number of companies in the sector in the last three years, to name but a few. Even in those areas where there is still room for development, such as e-Commerce, in many business sectors Internet-based transactions account for an increasingly relevant part of their total sales.

Against this backdrop of trust and consolidation in new technologies, the Spanish government's Avanza2 Plan considers the role of ICTs as being an essential element to Spain's economic recovery, strengthening infrastructures, trust, security and accessibility, technological training, digital content and services and ICT industry development, in addition to introducing new priority thematic lines, such as the development of intelligent networks, remote metering and action, the future Internet and the "Internet of Things".

"The Networked Society 2009" (La Sociedad en Red 2009) study, prepared for the second consecutive year, is the result of the continuous monitoring and analysis of the Spanish information society and ICT sector carried out by the State Secretariat for Telecommunications and the Information Society. This year is also the first in which, using a single official source and the strictest methodological approach, ICT sector data is offered in its entirety, with historical series that track the growth of this sector that has been strategic to our economy and society over the last few years. This has transformed this report into a valuable consultation tool to assist entrepreneurs, managers, institutions and administrations in the decision-making process, which will be progressively enriched by forthcoming editions. Thanks to this work and the constant updating of sector data, we can say that Spain currently has one of the most exhaustive and up to date information frameworks on the development of the Information Society in Europe.

Francisco Ros Perán

Secretary of State for Telecommunications and the Information Society

1. INTRODUCTION

This annual report, published in 2009 by the Spanish Observatory for Telecommunications and the Information Society (ONTSI), which reflects the development of the "networked society" in 2008, continues the report published for the first time in 2008. These ONTSI reports bring together indicators from different national and international sources, together with other proprietary indicators drawn from its studies, which cover areas as yet unexplored by other research sources, such as barriers to Internet use or citizens' opinions and attitudes toward new technologies, among others. Finally, they analyse and interpret information regarding the spread and use of Information and Communication Technologies (ICT).

This year's report includes an initial chapter that sets out the scope and the main elements of the Plan Avanza, the cornerstone for Spanish investment and efforts in driving forward the Information Society over the last few years, from 2005 to 2008 (Avanza2 Plan started in 2009).

After examining the global outlook for ICTs, with an overview of the Information Society in the world by continent and region, it focuses on the situation in Spain after comparing its position in the European Union as a whole.

The analysis of the networked society in Spain, the main subject of this report, in turn includes a detailed study that starts with the analysis of the ICT sector. It continues with a look at ICT access and use in households and among individuals, including B2C electronic commerce, and provides a detailed analysis of access and use by autonomous region. It starts off with the residential segment moving on to the business sector, including chapters on SMEs, large companies and micro-companies, and ends with the status of the e-Administration.

With regard to the results of the comparative analysis, the new advances recorded and reflected in this report reveal the progress of information and knowledge society, in addition to areas to be developed. In Spain there is now a critical mass of citizens in the residential segment, one of the largest markets in terms of the number of Internet users. Spain also boasts extensive broadband coverage, the widespread development of the networked society in the corporate sector and advances in new e-Administration applications and services.

The report also highlights areas with room for development, emphasising aspects such as differences in the development process between segments and social groups, or due to different variables such as company size, which still involve future challenges for Spain that need to be studied, and development areas for the State Secretariat for Telecommunications and the Information Society.

2. EXECUTIVE SUMMARY

THE INFORMATION SOCIETY IN THE WORLD

Access to information and communication technologies (ICT) is a first step towards a society that is capable of taking advantage of the benefits of new technologies and one that is integrated in an increasingly globalised world. In developed countries, access to telephony and the Internet is by and large generalised, with slow growth rates due to the situation of maturity and stability. As far as infrastructure is concerned, opportunity in these countries with advanced economies now lies in the development of high speed networks, both landline and mobile, and in mobile devices with innovative features, interactive television, etc.

Landline telephony on a world scale, according to the International Telecommunications Union, continues to lose ground, with 19.1 landlines per 100 inhabitants in 2007 compared to 19.5 in 2006. However, the degree of evolution varies depending on the region since they do not all start with the same number of fixed telephony lines.

Fixed telephony lines in the world by region

Region	Fixed telephone lines (thousands)		% growth 2002 - 2007	Fixed telephone lines / 100 inhabitants - 2007
	2002	2007		
Africa	22,793	30,593	34.2%	3.2
North America (USA and Canada	209,872	181,411	-13.6%	53.6
Rest of America	88,400	101,622	15.0%	17.8
Asia	428,515	622,013	45.2%	15.6
Europe	320,677	328,812	2.5%	40.8
Oceania	12,499	11,953	-4.4%	35.1
World	1,082,756	1,276,403	17.9%	19.1

Source: ITU. ICT Indicators Database 2008

In countries with a high proportion of fixed telephony lines among the population, having achieved almost full coverage, the number of subscribers has started to fall as people switch to mobile telephony lines. This is doubtless the reason why mobile telephony has exceeded, for the first time, the figure of 50 subscribers per 100 inhabitants (21.6% more than in 2006).

Mobile telephony subscribers in the world by region

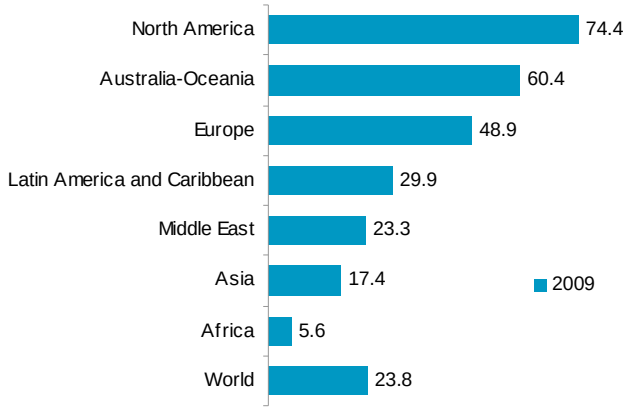
Region	Mobile telephony subscribers (thousands)		% growth 2002 - 2007	Mobile subscribers / 100 inhabitants - 2007
	2002	2007		
Africa	36,924	274,068	642.3%	28.4
Asia	443,937	1,497,254	237.3%	37.6
America	255,451	656,918	157.2%	72.2
Oceania	15,459	27,011	74.7%	79.2
Europe	405,448	897,516	121.4%	111.3
World	1,157,219	3,352,767	189.7%	50.1

Source: ITU. ICT Indicators Database 2008

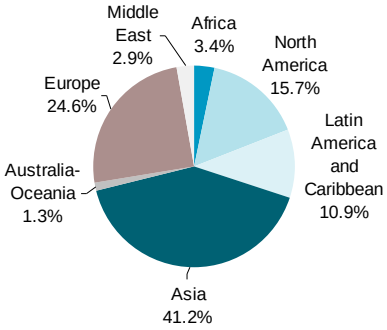
In 2008 there were 1.596 billion Internet users in the world, representing a penetration of 23.8%. The highest penetration rate of 74.4 Internet users per 100 inhabitants was recorded in North America, while Asia had the highest percentage of Internet users, reaching 41.2% of the total.

Internet users in the world, penetration and distribution by region, 2009

Internet users per 100 inhabitants



Distribution of total Internet users



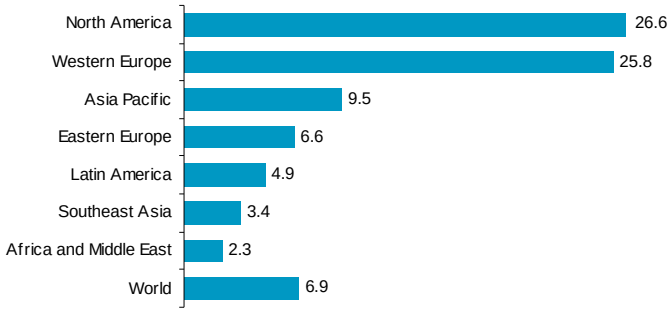
Source: Internet World Stats March 2009

The penetration of broadband in the world is 6.9 subscribers per 100 inhabitants, which means that at the end of the third quarter of 2008 there were 398.4 million broadband subscribers worldwide. This represents a growth of 19.5% compared to the previous year.

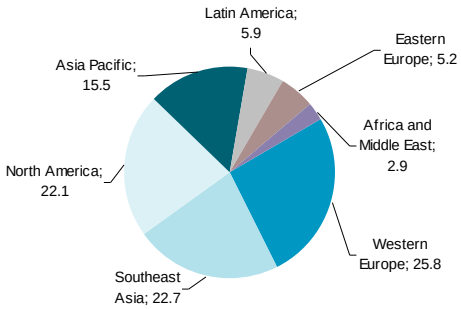
There are significant differences between regions; North America and Western Europe have the highest penetration rates, exceeding in both cases the figure of 25 broadband subscribers per 100 inhabitants.

Broadband subscribers in the world, penetration and distribution by region, third quarter of 2008

Subscribers per 100 inhabitants



Distribution of total subscribers (%)



Source: Point Topic. 3Q 2008

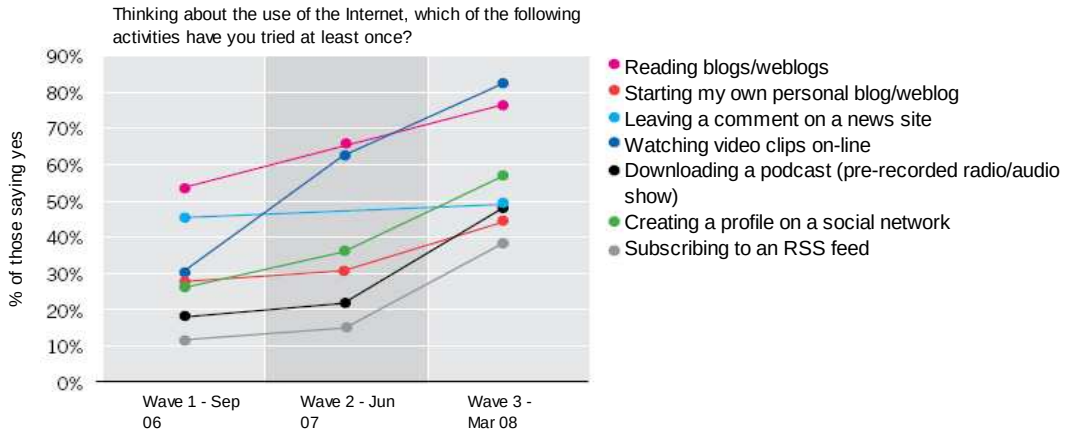
The value of the ICT market in 2008 reached €2.74 billion, an increase of 4.8% compared to the previous year. This growth has slowed in the last year and is primarily driven by the evolution of services, specifically those of telecommunications, software and computing, as well as television.

Meanwhile, the digital content industry has grown non-stop in the last few years in Spain and worldwide. It stimulates increasing interest among the population daily, especially among entrepreneurs and other associated agents. This indicates that companies all over the world are adapting their business models to what has already become a new paradigm for information exchange, service provision and customer relations.

Included in the digital content industry, comprised mainly of the audiovisual (TV and radio), publications, advertising and film sectors, is the digital content generated by Internet users themselves. This can mean that in some cases there is no specialised industrial sector or that it is very incipient.

Activities such as reading blogs or weblogs were performed at some time by more than 70% of active Internet users in 2008; creating or managing a profile on a social network almost doubled in percentage in two years, reaching almost 60% of all users in March 2008. This data shows that the number of people capable of activities based on exchange of their own digital content has accelerated its growth rate.

Evolution of active Internet users who have performed the following activities at some time



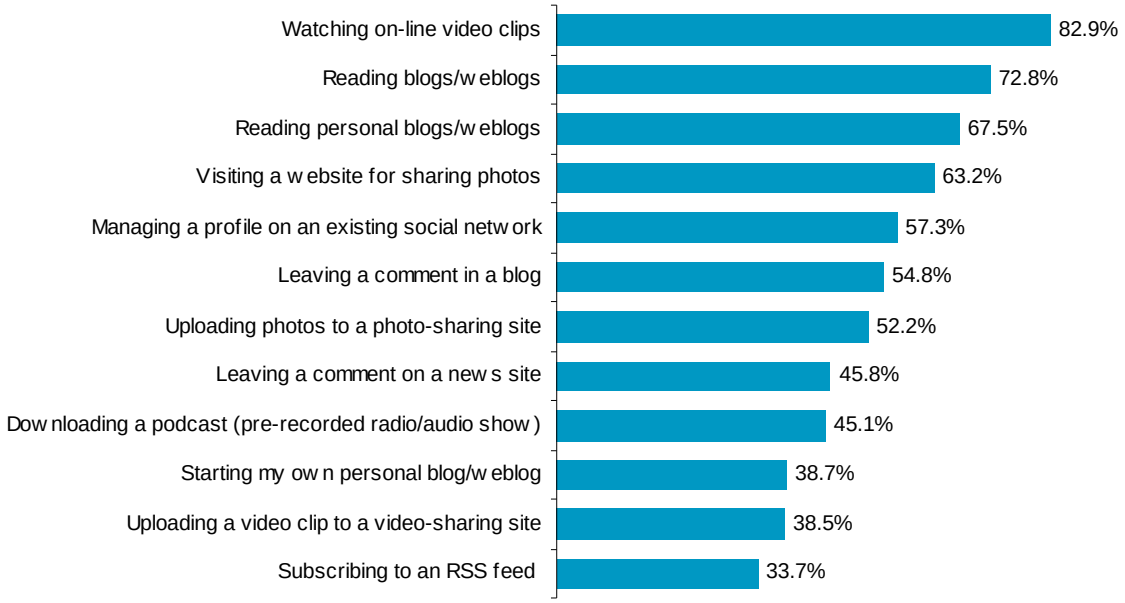
Base: Active Internet Users (accessing the Internet daily or every two days)

Source: "Power to the people – Social Media Tracker Wave 3", Universal McCann 2008

Collaborative digital content can be divided into the main groups of video repositories, social networks, collaborative websites (wikis), blogs, (blogs, moblogs, photoblogs), comment and monograph repositories and geographic and cartographic contents. Social networks establish personal or professional relationships between users who share knowledge and experiences supported by open websites under constant construction. These social networks have expanded throughout the Internet at high

speed and are the most noteworthy example of what is called Web 2.0, the philosophy of which is collaboration and shared knowledge management.

Active Internet Users who have performed the following activities at some time, Wave 3 - March 2008



Base: Active Internet Users (accessing the Internet daily or every two days)

Source: "Power to the people – Social Media Tracker Wave 3", Universal McCann 2008

The growth experienced worldwide in the last few years by industries generating digital content has been positive, with the video games sector recording the highest average annual growth in the period 2003-2007 (15.4%). This sector is currently experiencing strong growth. In second place, the audiovisual sector is growing annually at a rate of 6.8%, while the publishing, film, video and music sectors growth is less than 3%.

It is predicted that new music distribution channels, such as the mobile or pay online channel, should show significant growth, thus compensating the music sector's short and medium term drops in revenue.

The audiovisual market volume recorded an average annual growth of 6.8% for the period 2003-2007. New channels, such as TV by mobile telephony, interactive DTT services and television over ADSL represent a great opportunity for the various sector agents.

With respect to the digital side of the publications market, the online newspapers sub-sector is the most developed and records significant growth in both revenue and readership, with advertising as the sole source of income. However, online advertising still represents a very low percentage of the sector total.

The role of the Internet in the advertising sector will be reinforced with the proliferation of digital channels and media because the population will reduce to some extent the time spent on leisure using traditional media such as the television in favour of the Internet. This will change the weight of the media in advertising activities and investment. For the advertising market, the Internet is regarded as an economical medium with good prospects with regard to use.

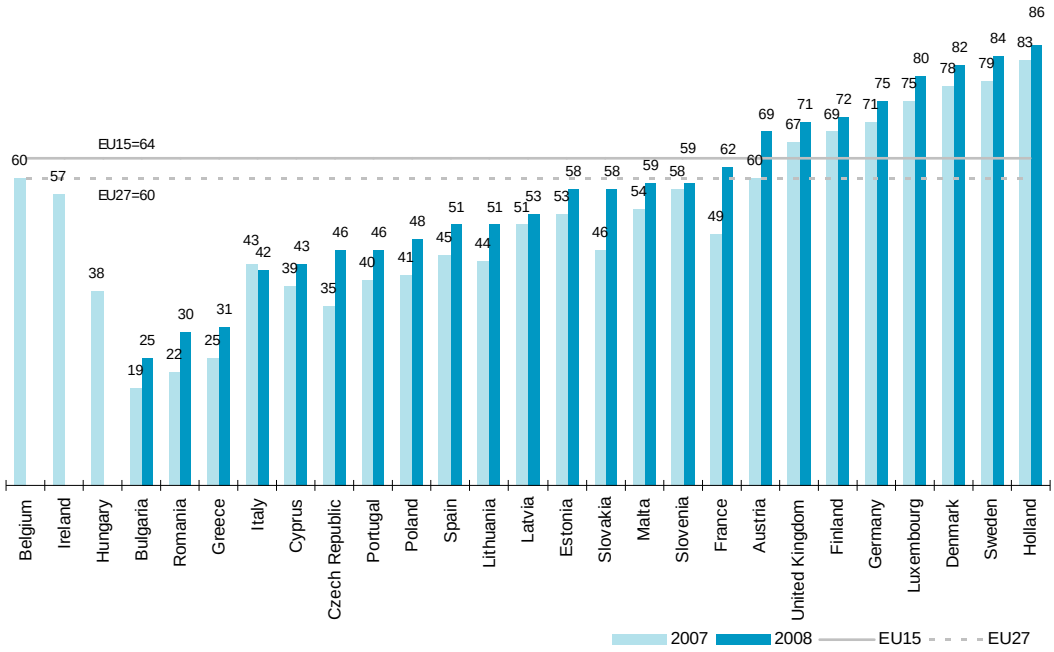
The main source of income in the film sector continues to be the box office, although the number of viewers has been slowly declining in Europe. Technological progress and changes in lifestyle in which Internet-based business models are increasingly predominant point to traditional business models being replaced in the future, at least in part.

The Information Society in Europe

The incorporation of ICT into European households and their use by citizens maintained a high rate of growth, as shown by the majority of the indicators referring to infrastructure, equipment and use patterns. The number of home Internet users is growing, the number of broadband lines is increasing and the Internet is increasingly being used for activities with the administration. These are some of the main conclusions that can be drawn from the data published by Eurostat, the European office of statistics.

To a greater or lesser extent, the presence of the Internet has increased in households in European Union countries over the last few years. The percentage of households connected to the Internet in the EU-27 reached 60%, four percentage points less than in the case of the EU-15.

Households connected to the Internet in the European Union (%)



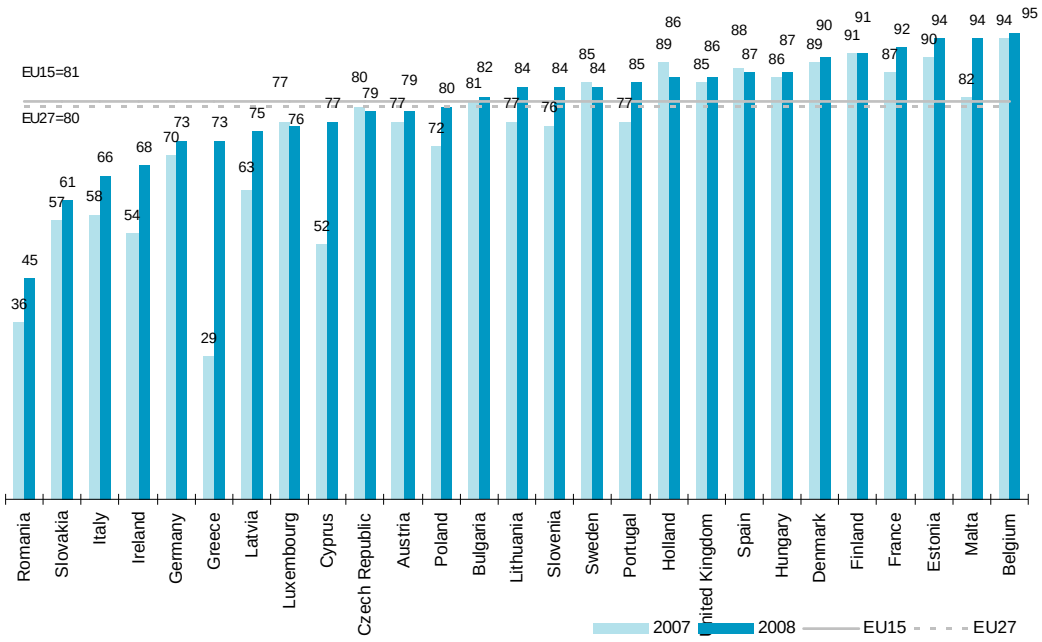
Base: Total households

Source: Eurostat

Holland, Sweden and Denmark head the list, in that order, in the ranking of countries against this indicator, with percentages exceeding 80% in all three cases. Romania and Bulgaria are in last place with values of 30% and below. The dynamics of expansion have been remarkable in France, Slovakia and the Czech Republic, with percentage increases in double digits (13, 12 and 11 percentage points more, respectively). Spain has shown important growth of 6 percentage points.

Regarding infrastructure and access technologies and in the context of the residential market, another of the most representative indicators of the degree of adoption of ICT is the percentage of households connected to the Internet by broadband (mainly ADSL and cable).

Households with broadband Internet access (%)



Base: Total households

Source: Eurostat

The advanced development of broadband at European level can be seen in the percentage of households with Internet access via this technology. In this case, the difference between the EU-15 and EU-27 is negligible (81% compared to 80%, respectively). Belgium (95%), Malta (94%) and Estonia (94%) have the highest percentages, with France, Finland and Denmark close behind with percentages of 90% or higher. Spain lies in eighth position, included in the group of countries exceeding the EU average.

THE ICT SECTOR AND AUDIOVISUAL SERVICES IN SPAIN

The ICT and audio-visual sector in Spain, comprised of information technologies, telecommunications, digital content and audio-visual services, has a positive impact

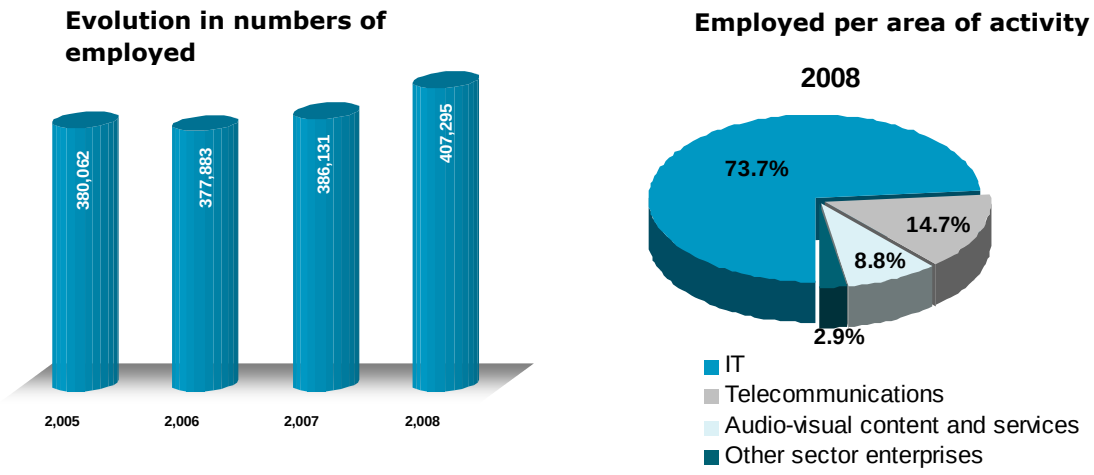
on the economy and employment of the country, as well as facilitating the transformation of other sectors and the creation of innovative services.

The total gross added value generated by ICT and audio-visual content, which includes its indirect induced effects and those derived from taking external network factors[1] into account, amounted to €246.16 billion, representing 22.5% of the Spanish GDP in 2008. Similarly, also taking into account the indirect effects and the external network factors, it is estimated that ICT and audio-visual services provided more than 1.5 million jobs, approximately 7.5% of the total Spanish workforce recorded for the aforementioned year.

The number of enterprises in the ICT and audio-visual services sector reached 28,259 in 2007, with a growth of 27% since 2005.

Turnover of enterprises in the ICT and audio-visual services sector in 2008 reached €114.32 billion, equivalent to an increase of 1.5% on 2007. The rate of staff growth in these enterprises is still higher, with more than 400,000 people working in the sector in 2008, an increase of 5.5% compared to 2007.

Employment in the ICT and Audiovisual Services sector, evolution 2005-2008, and distribution in 2008



Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society)

Investment by the sector in 2008 totalled nearly €13 billion, while the gross value added at market prices rose to more than €64 billion, equivalent to 5.8% of Spanish GDP in the same year.

[1] Particular type of value multiplier effect, which is generated when each new user adds value to a product by simply joining the user community. The value of the network grows quadratically with each new user that joins. This higher value of the connection is directly derived from the fact that the number of possible connections that we can access increases when the number of subscribers increases, and is indirectly derived from the greater incentives that exist to develop more sophisticated tools and applications the more people that are connected.

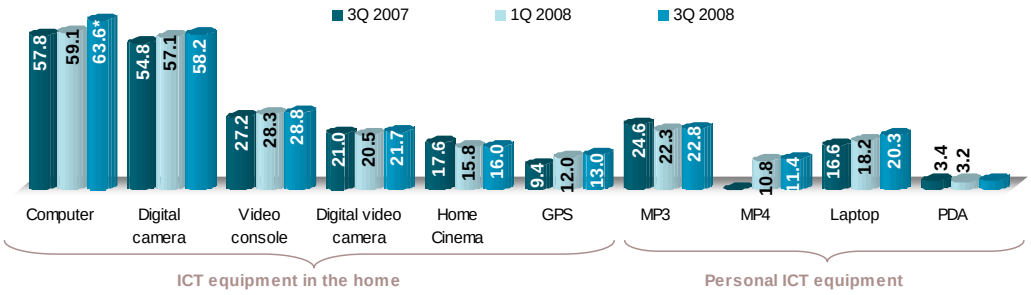
ICT IN SPANISH HOUSEHOLDS

During 2008, the development of the Information Society in Spain experienced new encouragement characterised by significant growths in access and use of Information and Communication Technologies (ICT) in households and by citizens. The importance of achieving a fully networked society is founded on the direct effects exercised by ICT on citizens' quality of life and also on productivity and improvement of the economy.

Technological equipment continues to increase and the extension of services and devices both in the homes and among individuals maintained a positive trend, with at least one computer in the majority of households: around 63.6% of households had some type of computer, either desktop, laptop or both, which suggests that the number of households connected to the Internet will continue to rise.

The increase in penetration of the computer is mainly based on the growth in numbers of laptops, which continued the high growth rate of recent years. In 2008 around 1.2 million households had a laptop, amounting to a penetration of 28.5%. This marked upward trend ensures that one out of every five individuals, some 20.3% of the population aged 15 and over now have access to a laptop.

ICT equipment penetration in households (%)



*** INE 2008 data**

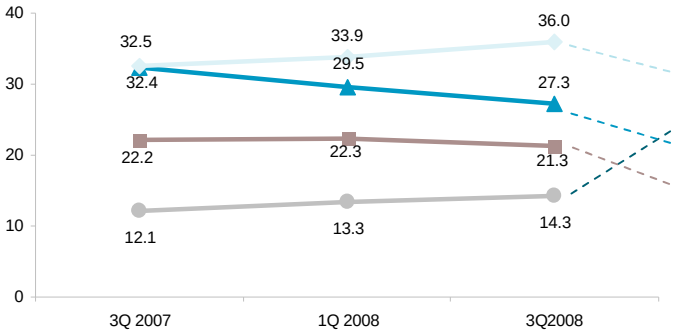
Source: **Household Panel, *ONTSI***

Together with the role played by the computer as a leisure tool, there are a whole series of other digital leisure devices that are increasingly reinforcing the incorporation of households and the integration and participation of individuals in the Information Society. However, among the various ICT devices, the highest increase in penetration in the last year was recorded by the flat screen television, with an increase of around 10 percentage points to 24.4%, which means that there is one in every four households.

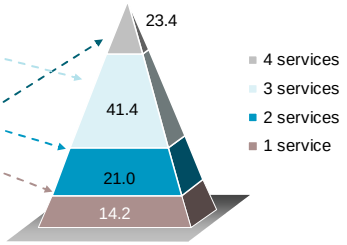
The distribution of households according to the number of ICT services that they have (fixed telephony, mobile telephony, Internet and pay TV) reflects the important growth in the equipment present in Spanish households in the last few years.

ICT service expenditure distribution according to number of services signed up to (%)

Percentage of *households* by number of services



Percentage of *expenditure* by number of services



Source: **Household Panel, *ONTSI***

In particular, 2008 was the year in which there was a predominance, probably a lasting one, in the proportion of households with three contracted services, the typical equipment profile of which now includes the Internet among the services available.

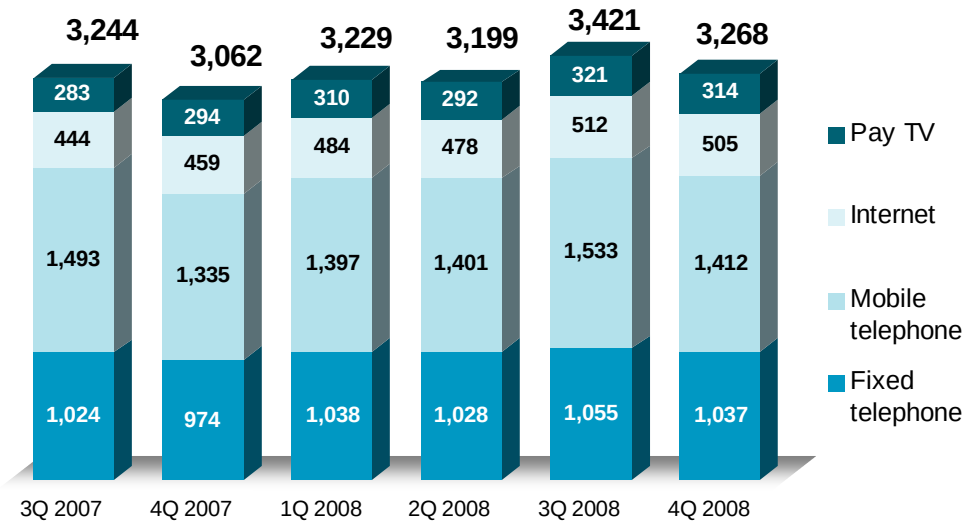
The progressive increase in equipment in Spanish households can be seen more clearly in the increases in the third quarter of 2008, in which the percentage of better equipped households, those with 3 or 4 services, exceeded half (50.3%) of the total Spanish households.

The corresponding expenditure on ICT services in 2008 by Spanish households rose to €13.117 billion, a rise of 6.3% compared to the previous year.

The majority of the expenditure, 43.8%, was on mobile telephony. Despite remaining unchanged in penetration and expenditure overall, over the last few years fixed telephony has gradually been achieving less weight percentage wise, dropping to 31.7% of the total expenditure on ICT services in 2008. Expenditure on the Internet amounted to 15.1% of the total expenditure on services, reaching approximately €2 billion, and expenditure on pay television was below 10% of the total expenditure (9.4%).

At the beginning of 2006, mobile telephony exceeded fixed telephony in the residential sector; since then and up to 2008, it remained stable quarter by quarter with penetration levels reaching around 83% of households. On the other hand, the downward trend in the number of households with indirect and preselection access to fixed telephony accelerated, standing at 9.2% of households compared to 11.3% of the previous year .

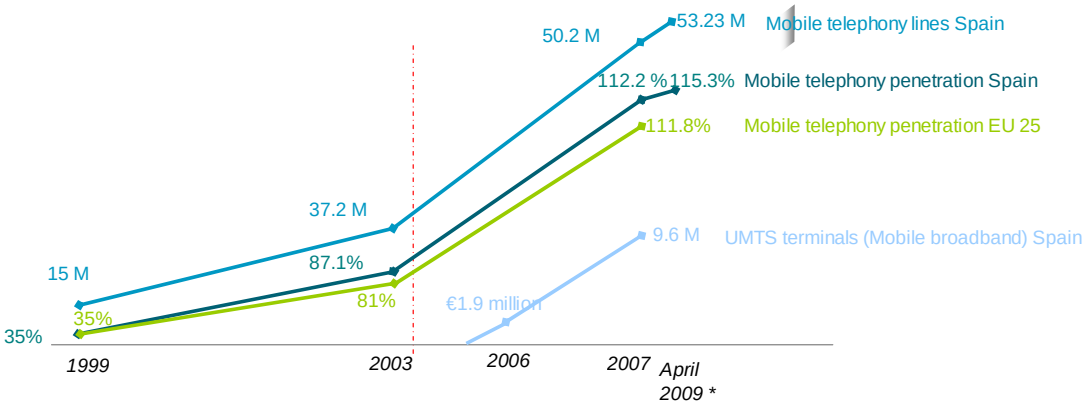
Total ICT expenditure on end services (€ millions)



Source: **Household Panel, *ONTSI***

Mobile telephony is confirmed as a universal service among the Spanish population, although it is still showing a degree of growth, increasing by 6% in a little over a year. Thus, in April 2009, there were more than 53 million mobile telephony lines in Spain. Contract mobile telephony continues to gain ground over prepay services. The main uses of mobile telephony, such as receiving and making calls, continue to rise, reaching penetrations of 73.6% and 70.1% respectively among those who have a mobile phone.

Number of mobile telephony customers and penetration (millions and %)



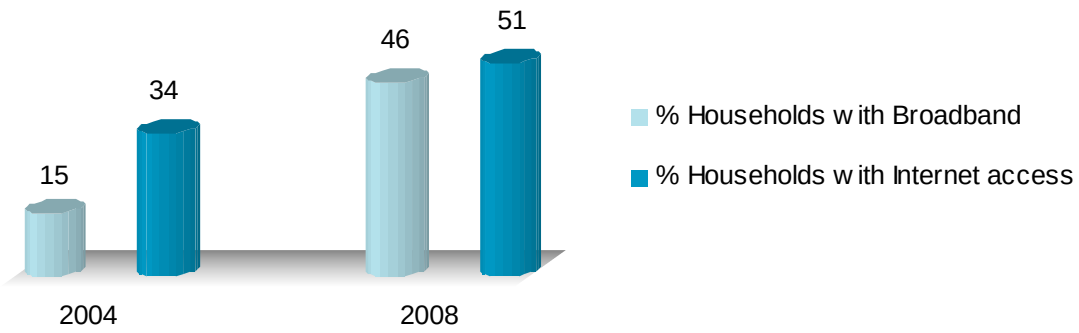
*** lines to telemetry and/or telecontrol (M2M) services are included to allow comparison with the European Union**

Source: Report on the development of the Information Society in Spain SETSI (State Secretariat for Telecommunications and Information Society)

The mobile telephone services with the highest added value include the camera, which is the most common and the most used as well as the most desired for future handsets, together with Bluetooth.

In 2008, 51% of Spanish households were connected to the Internet. Connections by broadband reached 46% of households, close to the EU average (49%).

Percentage of households with Internet access and broadband in Spain(%)



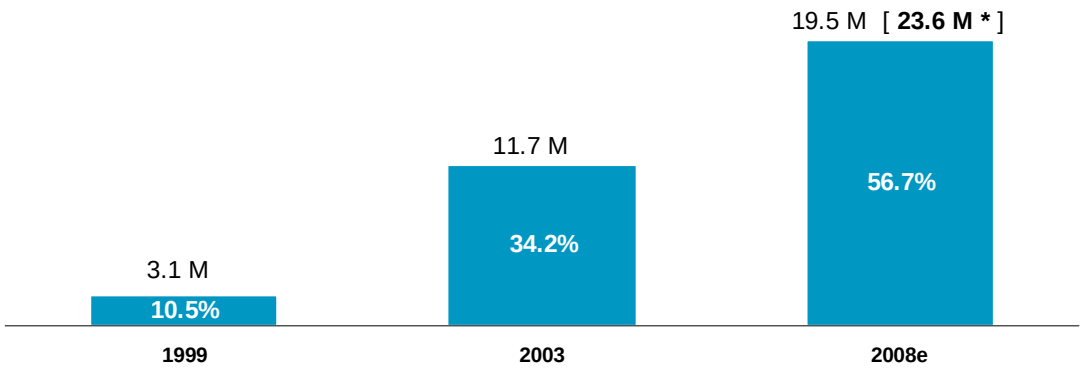
Source: Report on the development of the Information Society in Spain SETSI
(State Secretariat for Telecommunications and Information Society)

Consequently, expenditure on the Internet continued to grow, reaching a total of €1.979 billion in 2008, which constitutes a year on year increase of 13.2%.

The average monthly expenditure per household on the Internet at the end of 2008Q4 was €26, including VAT, in a context where the ADSL market has been increasing its share and accounts for more than three quarters (76%) of the total expenditure on the Internet.

With a sustained year on year growth rate in the last few years (around 9 or 10%), in 2008 the number of people aged ten and over who had used the Internet at least once reached 23.6 million. Taking into consideration the population aged 15 years and over, this figure is almost 20 million people, representing 56.7% of the population.

Percentage and number of Internet users



* including individuals aged from 10 to 15
e: estimated
Base: individuals aged 15 and over

Source: Report on the development of the Information Society in Spain SETSI (State Secretariat for Telecommunications and Information Society)

But it is not only the number of Internet users that is growing. An increase in the frequency of use and the trend to more regular use has also been observed; the year on year increase in the Internet user population is mainly among those people who use it daily, that is, who use the Internet at least five days per week.

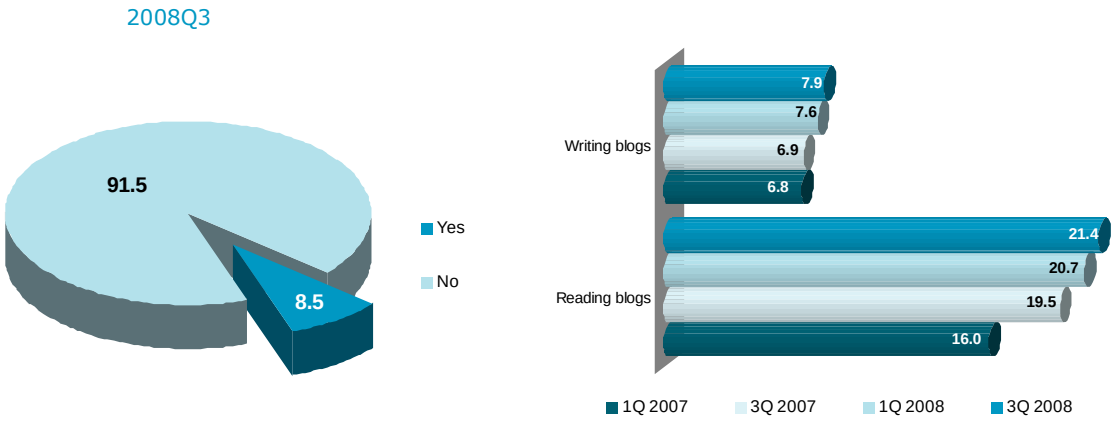
When stratified by social-demographic variables, the user profile for the highest penetration of Internet use is as follows: male, aged under 45, in active employment and with university or second stage secondary education.

Although the predominance of the desktop computer as the equipment for accessing the Internet has remained practically unchanged (it is present in 83.5% of connected households), access via the laptop computer has been steadily growing, with a very significant year on year increase in the order of seven percentage points, reaching 34.5% of households in 2008. The predominant place of access, the home, continues increasing and was the most common place of access for 74.5% of individuals.

While implementation of the most common Internet security precautions has grown among individual users, a relatively generalised upturn has been observed in overall security problems experienced by all users. An exception to this trend are intrusions into services such as electronic mail, which has reduced, and fraud in online accounts, which has remained stable at minimum and residual levels.

The most common uses of the Internet include communication, with electronic mail in first place as the most frequent, followed by instant messaging; both of these uses are on the rise. Also growing are the trends in the use of search engines, reading news, Internet based games, FTP file transfer - which was receding in recent years -, reading blogs, looking up account balances and, to a lesser extent, financial and banking operations, followed finally by B2C purchasing, specifically for books, music and films.

Having a personal blog and activities of writing/updating and reading blogs in the last three months among intensive Internet users(%)



Base: Internet users in the last week
Note: Activities performed during the last three months

Source: Household Panel, ONTSI

By contrast, downloading files in general has been decreasing, especially between peers, or P2P, as well as downloading music. However, downloading activities for use in the last week, whether shared between individuals or from suppliers' websites, continued at the same levels as the previous year. A possible major trend towards the use of streaming or constant flow data transmission could be the underlying cause of the stabilisation or reduction in files downloading.

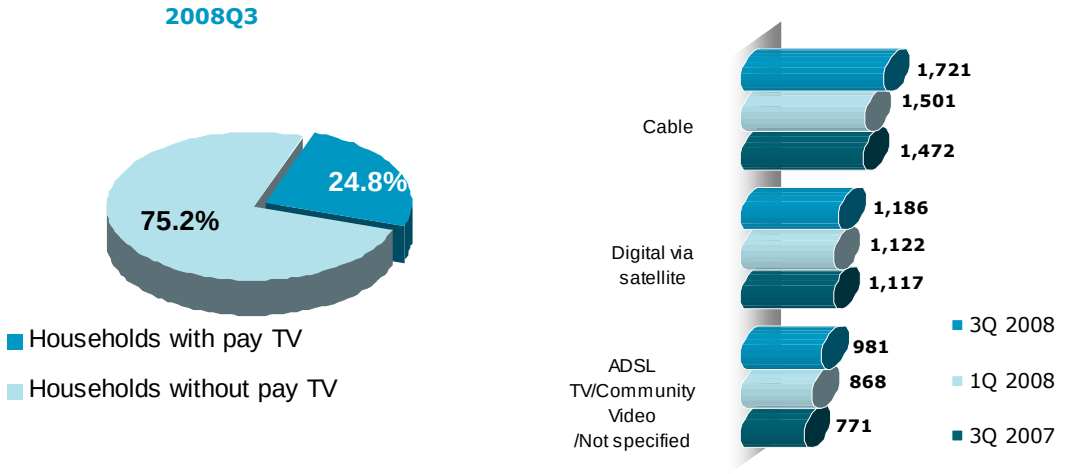
The availability of electronic mail has also increased, reaching 77.4% of those who have used the Internet at least once, the percentage increasing to 90.8% when referring to those who accessed the Internet in the last week, with an overwhelming predominance in personal e-mail addresses over company addresses.

Among the various provisions of the what is known as the social web or Web 2.0, blogs are probably the most complete platform for the creation of user content.

In the third quarter of 2008 in Spain, more than one and a half million people had their own blog, that is, 8.5% of intensive Internet users (those who accessed the Internet in the last week). In 2008, just as in 2007, both reading of other people's blogs (21.4%) and writing or updating their own blogs (7.9%) recorded upward trends in terms of the number of people who carried out these activities.

As regards the audiovisual sector, both for pay television and digital terrestrial television (DTT), 2008 was a year of growth at levels to which we have not been accustomed in the last few years. This becomes particularly relevant due, on one hand, to the proximity to the "analogue switch-off" in 2010 and, on the other, to the change in the trend towards revitalisation of a market that is tightly linked to digital leisure and is fundamental to the development of the Information Society from the point of view of the content.

Homes with Pay TV and distribution by type of technology (% and thousands)



Source: **Household Panel, *ONTSI***

The strong increase in penetration of pay television in 2008, which reached 24.8% of households, that is, close to four million and recorded a relative year on year increase in the third quarter of 2008 of 16%, was marked by a generalised growth in the different technologies without exception. The biggest increase in absolute numbers corresponded to the most widely used technology, that of cable, with an increase of 250,000 households (relatively, 17%) while growth in the ADSL segment was 27% with a little over 200,000 new households receiving this service. Digital satellite reception also showed similar vitality, though growth in this segment was a little more moderate.

In accordance with the progressive generalised development of the networked society, there continues to be a favourable attitude towards new technologies, as in previous years, with recognition of the role they play in education and the work environment and their use in solving common problems, or their contribution towards making life easier and more comfortable. The importance of these technologies for social integration and individual and collective success is also understood and this significant role is incorporated in the need for public administrations to contribute to raising awareness about and promoting these technologies.

Overall, the most outstanding feature of 2008 in terms of year on year variations in attitudes was the increase in the importance attributed to the use of the new technologies for social relationships. This is the aspect that has experienced the greatest increase among the entire population; a year in which could say there has been a real boom in social networks.

The Internet continues to be the most highly valued service in price-value ratio, although last year it lost ground in terms of positive evaluation, with 50.3% of

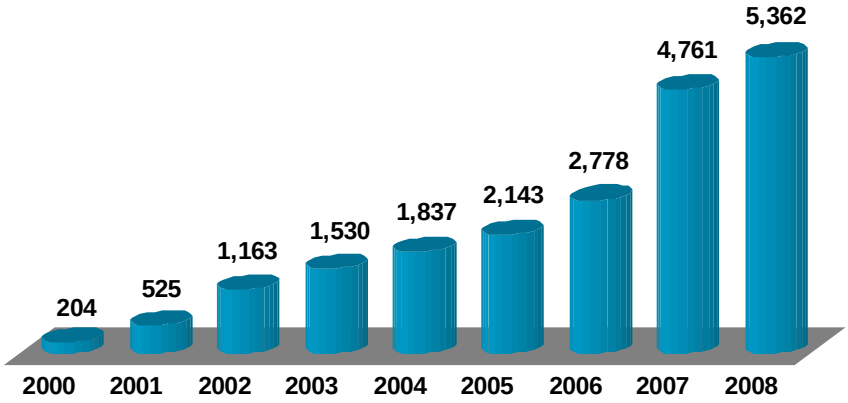
individuals considering that they received a lot or sufficient for what they paid for the Internet. After the Internet, the service considered best value was pay TV, with 50% of individuals satisfied with what they received for what they paid.

Also, and specifically in relation to the Internet, analysis of ease of use and expectations of use are the indictors that show the most positive valuation among users. A total of 89.4% of Internet users said that it was easy or very easy to use and 86.7% considered that the Internet had met or exceeded their expectations (59.4% declared it fulfilled their expectations and 27.3% that it exceeded them).

ELECTRONIC COMMERCE B2C

The business volume generated by electronic commerce B2C in 2008 exceeded €5.3 billion, an increase of 12.6% compared to 2007.

Volume of B2C e-Commerce



Source: ONTSI (Spanish Observatory for Telecommunications and Information Society)

The main engine of this growth has been in the increase in the number of Internet users, which went from 53.5% to 58.3% of the population of those aged 15 and over. Due to this increase, and with a proportion of purchasers that went from 39.8% to 40.3% of Internet users, the absolute number of online purchasers increased by almost 900,000 individuals, with a resulting total of 8.9 million Internet users who made a purchase in 2008. This figure, linked to an average expenditure of €604, gave a business volume of €5.361 billion in 2008.

The Internet users who made purchases via the Internet in 2008 demonstrated a more intensive use of the Internet. The clearest indicators are the following:

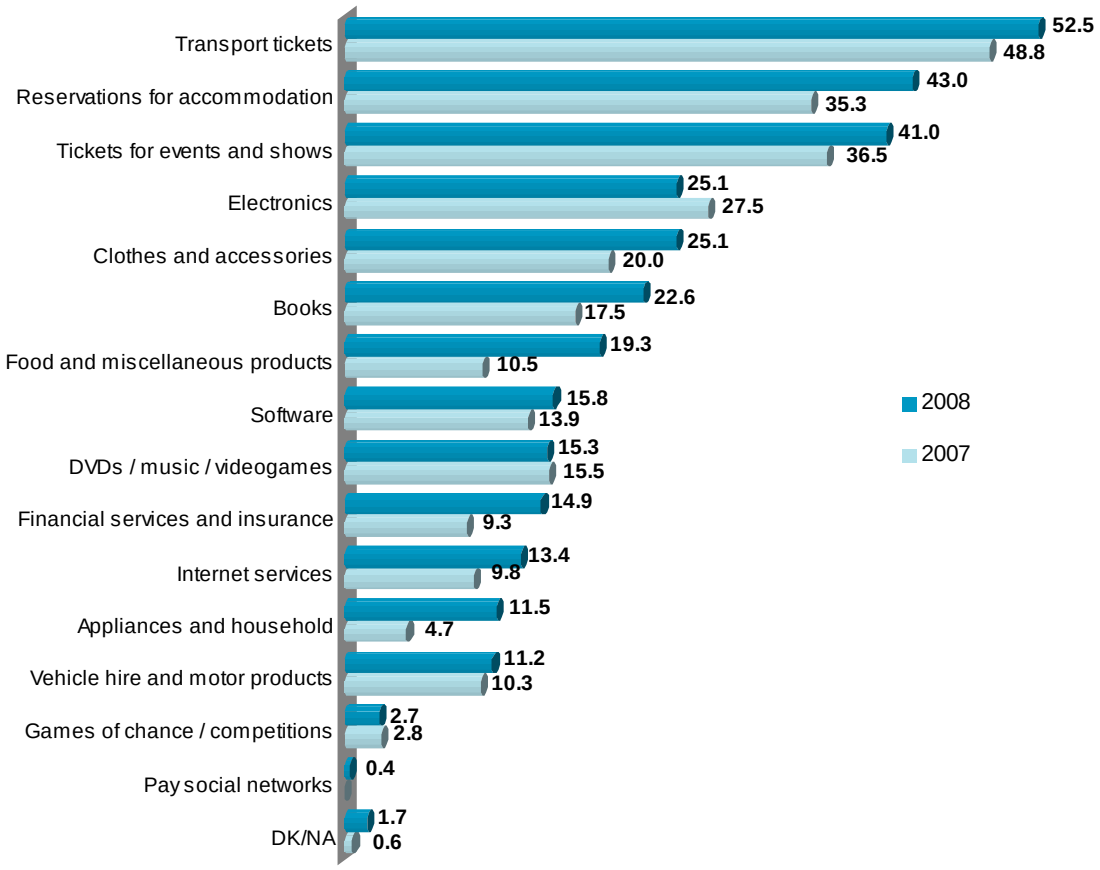
A higher proportion of purchasers declared that they connected to the Internet for the first time more than 3 years ago (77% compared to 59% of non-purchasers).

Of the total Internet purchasers, 86% had accessed the Internet in the last week, compared to 63% of non-purchasers.

Of the total Internet purchasers, 79% had broadband compared to 60% of non-purchasers.

The electronic commerce star products in 2008 were travel tickets (52.5% of Internet purchasers), accommodation reservations (43%) and show and event tickets (41%), all of these with more customers than the previous year. The categories experiencing the highest growth compared to 2007 were food and general items (up by 9 percentage points to 19.3%), accommodation reservations (up by 8pp) and household appliances and home furnishings (up by 7 points to 11.5%).

Goods and services purchased on the Internet (%)



Base: All Internet purchasers

Source: ONTSI (Spanish Observatory for Telecommunications and Information Society)

Among the purchasers, 83% (compared to 77% in 2007) had at least one year's experience of purchasing via the Internet and 43% (30% in 2007) had made their first purchase more than 3 years ago.

The home and the workplace were reinforced as the place where most online purchases were made, with the predominance of the first increasing: 90% of online purchasers acquired goods or services from their home in 2008, while 14% did so from work, compared to 84% and 13%, respectively, in 2007.

Purchases from virtual stores that also have a physical establishment were the most frequent (70% of purchasers visited a website with these characteristics) while shops selling exclusively on the Internet (53%) took second place. However, during 2008 the offer on the Internet diversified, with the manufacturer's website taking a larger share, which almost doubled, going from 23% in 2007 to 45% in 2008, whilst buying and selling portals almost tripled their sales (7.4% vs. 20.8%) and the online auction sites also increased (16% vs. 25%).

With respect to the place of purchase of travel tickets and accommodation, two important trends have emerged. On one hand, virtual travel agencies prevail over traditional travel agencies with Internet presence, the former being used three times as frequently as the latter. On the other hand, it can be seen that the Internet has enabled a degree of disintermediation (cutting out the middle man) in favour of the direct channel, such as the websites of airlines, terrestrial transport companies and hotels.

Within the general increase in the ways of finding out about the virtual shops, general search engines were not only the most frequent means of finding out amount the shops (85%) but they were also the route most frequently used for accessing the shop (82%). In second place, the most frequent means of finding out about a web page was recommendation from other people, which increased in 2008 to 68%, compared to 37.5% in the previous year, an increase that could be related to the rise of the incidence of the Web 2.0.

In addition to the significant rise in recommendations, this year a more mature and experienced use of purchasing channels was registered, as indicated by the significant number of people already knew about the page (61.4%) or had it stored in their favourites (45.4%). Lastly, various other forms of advertising are very important, both off line and online, direct and indirect, including the use of electronic mail as a form of advertising. The percentage of online purchasers who learned via such means about the virtual shop where they made their purchases has doubled or tripled.

Half of all purchasers preferred to pay for online purchases by credit or debit cards (mainly credit). The preference for payment on delivery has increased in the last few years to take second place with 29%.

ICT IN SPANISH HOUSEHOLDS BY AUTONOMOUS REGION

The difference in penetration of mobile telephony by autonomous region is one of the lowest identified among the set of equipment and services considered. The high penetration rates linked to an almost inexistent 'divide' reveal the universality of this service throughout Spain.

In fixed telephony, the Basque Country and Aragon recorded the highest penetrations with values of 92.6% and 90.1%, respectively. Ceuta (66.1%) and Andalusia (73.5%) showed the lowest penetrations.

With respect to television, specifically that received over cable, Asturias was at the head of the list where more than 34% of selected households had this technology, together with the Basque Country, where more than 30% of households (31.6%) had it. Other access technologies to pay television showed smaller territorial differences. The highest percentages of households with DTT were recorded in Catalonia, Canary Islands and Madrid, exceeding 65.5% in May 2009.

Madrid and Catalonia headed the list of regions with the highest percentage of households with the Internet, with values exceeding 60% in both cases (62.3% and 60.1%, respectively). Thus it was observed that the Northeast and the centre areas of the country had the highest penetration of Internet service per household. A part of the north of the country made up of Asturias, Cantabria, La Rioja and Aragon, together with the Canary Islands were in second place in terms of highest penetration. Next came the south, comprising Andalusia, Ceuta, Melilla and Valencia. In the centre, Extremadura, Castilla & Leon, Castilla-La Mancha, together with Galicia are the regions with the lowest percentages. Similarly, Madrid and Catalonia showed highest penetration of broadband, with percentages of 57% and 52.1%, respectively. The gap with respect to the region with the lowest penetration was a little over 27 percentage points (pp).

Although there are regional differences in the use of mobile telephony, it was observed that the use of this service was extensive in all autonomous regions. All regions recorded daily users of mobile telephony with percentages exceeding 60%.

Madrid, Catalonia, Balearic Islands, Basque Country and Navarre recorded the highest percentages of Internet users. However, despite the differences that do exist, it should be noted that the level of penetration of the Internet in Spain is high, with no region registering a penetration of less than 40%.

ICT IN SPANISH SMES AND LARGE COMPANIES

In Spain, there are almost 3.4 million companies, of which 94.1% are considered micro-companies as they have less than 10 employees. The remaining 5.9%, employing 10 or more people, are considered SMEs (small and medium sized enterprises) and large companies.

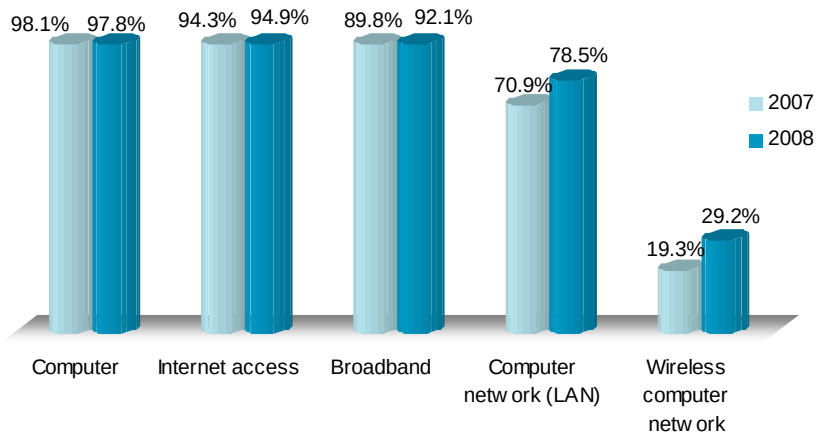
Of the total companies with 10 or more employees (more than two hundred thousand), 96.8% are SMEs who have between 10 and 199 employees, and only 3.2% are large companies with 200 or more employees.

The level of access to Information and Communication Technologies in SMEs and large companies reached percentages over 90% in the cases of Internet access, mobile telephony and broadband.

For the more advanced technologies, such as local area networks within the company (LAN[2]) or wireless LAN, although the penetration percentages were significantly lower, the increases experienced in the last year are noteworthy, with 7.6 pp and 9 pp, respectively.

With respect to the availability of the Internet for internal use, 18.2% of companies with 10 or more employees have an Intranet[3] and 9.1% have a connection from the outside to the Intranet (extranet[4]).

Evolution in the main ICT indicators



Base: all companies with 10 or more employees

Source: ONTSI using INE 2008 data

Of the SMEs and large companies that access the Internet, 94.9% use it mainly to search for information (97.2%) and to access banking and financial services (86%). The uses of the Internet that have grown most in the last year among SMEs and large companies are post-sale and pre-sale services and market monitoring, with rises of 11 pp and 6 pp respectively, reaching percentages of around 38% in both cases.

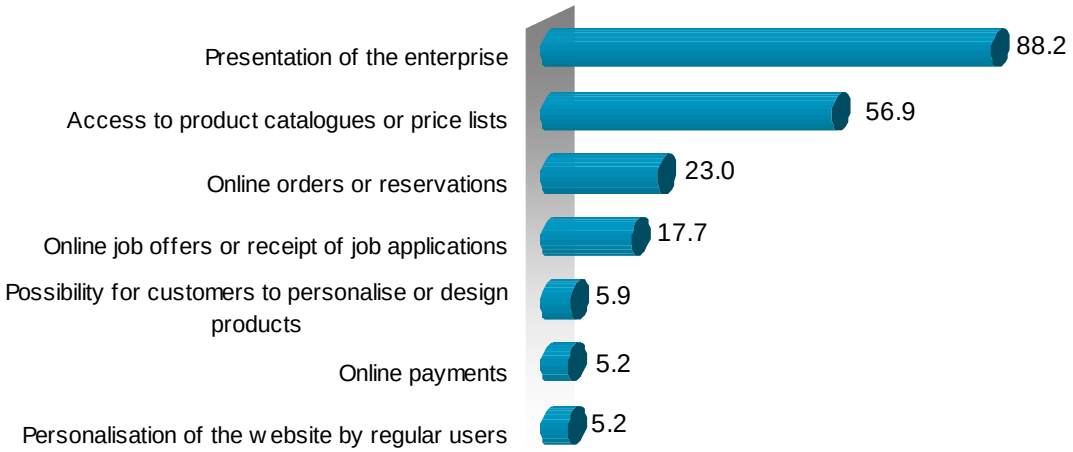
Among companies with Internet access, the most significant increase has been in the availability of a company website, an increase of 5 pp, reaching 57.5% of companies. This percentage is 72% among medium sized companies and for the first time over 50% among the small companies (54.1%).

[2] Local Area Networks (LAN):): Communication network between computers located in the same building or nearby buildings that enables users to exchange data and share resources.

[3] Intranet: Internal network of an organisation that provides content and services for the exclusive use of the organisation, usually based on Internet standards.

[4] Extranet: Secure extension of the Intranet enabling an external user to access some parts of the organisation's Intranet.

Objectives / services of the company website 2008 (%)



Base: companies with 10 or more employees with Internet access and website

Source: ONTSI using INE 2008 data

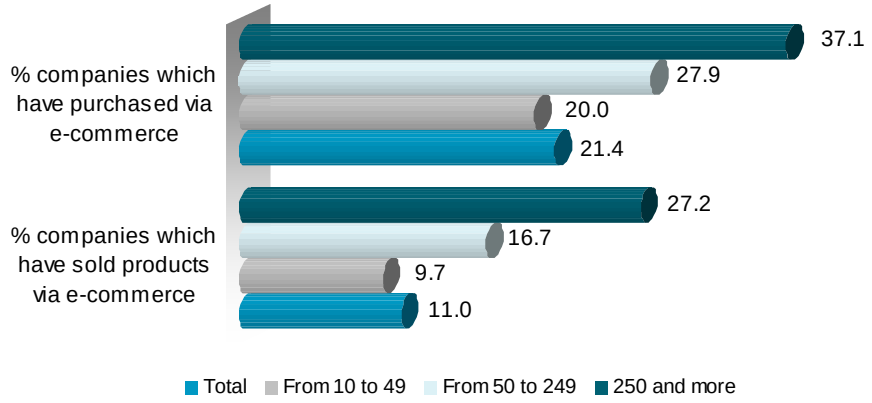
Among the main objectives and services provided by the website of companies with 10 or more employees the most common is the presentation of the company, giving information about the company and the type of products and services offered.

Providing access to product catalogues or price lists has shown an important rise of 12 pp compared to the previous year, with 57% of the companies including this aspect on their websites. Though of lesser significance the facility for placing orders or making reservations online is now possible on the websites of 23% of companies.

In the last year, there has been a significant reduction in computer security problems in companies, the figures for this aspect dropping by more than a half if considered over the last three years. The percentage of SMEs and large companies that have experienced security problems in the last twelve months was 11.2%.

There is a difference of 10.4 pp between companies purchasing and selling over the Internet. 21.4% of companies of 10 or more employees made purchases by electronic commerce in 2007 compared to 11% that made sales. In both cases, the rise in the last year was about 2 pp.

Companies purchasing and selling by electronic commerce 2007 (%)



Base: all companies with 10 or more employees

Source: ONTSI using INE 2008 data

The proportion of purchases over the Internet by SMEs and large companies compared to total purchases was 12.6%. The proportion of online sales compared to total sales was 8.3%; that is 4.3 pp less. This difference is reduced to half if one considers only those companies that made purchases or sales by electronic commerce, with percentages of 30% and 28% respectively.

ICTS IN SPANISH MICRO-COMPANIES

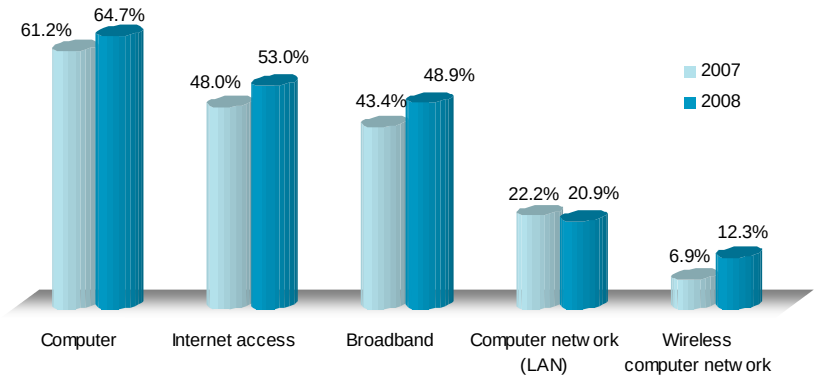
Of the total number of companies in Spain, 94% are micro-companies, that is, those with fewer than 10 employees: in 2008 there were a total of 3,219,393 such companies. Of all micro-companies, 84% had a maximum of two hired employees.

The incorporation of new technologies into micro-companies is mainly motivated by their usefulness and the benefits they provide within their business activity. Therefore, functions such as Internet connection, incorporation of logistics management applications or electronic commerce, either to buy or to sell, are incorporated depending on the economic sector to which the companies belong.

Basic computing and communication devices such as the computer and mobile telephone reached penetrations levels in micro-companies of 64.7% and 69.1% respectively. With respect to communication networks, for the first time more than 50% of micro-companies had an Internet connection.

The use of electronic mail and broadband showed similar percentages to that of Internet connection and 20.9% of micro-companies had an internal computer network (LAN).

Evolution in the main ICT indicators

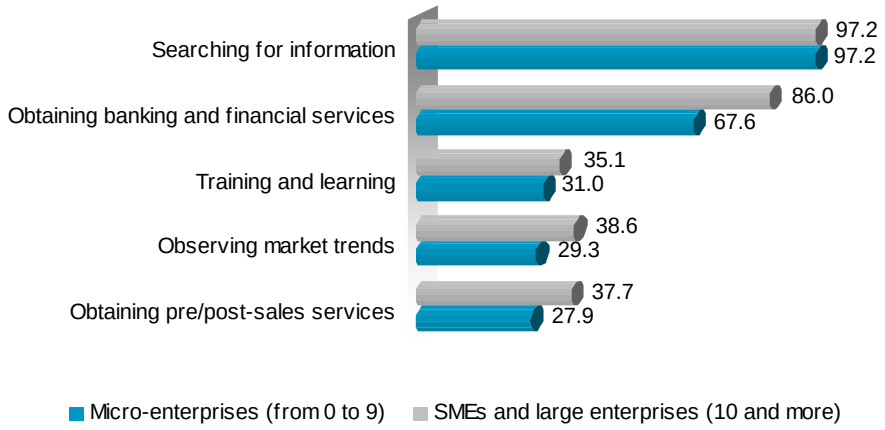


Base: All micro-enterprises

Source: ONTSI using INE 2008 data

The main uses of the Internet by micro-companies were searching for information on the Internet (97.2%) and access to banking and financial services (67.6%). The biggest increase in the last year, 8 pp, was in the use of the Internet to obtain post-sale and pre-sale services, important for 27.9% of micro-companies.

Main uses of the Internet 2008 (%)



Percentage of companies with Internet

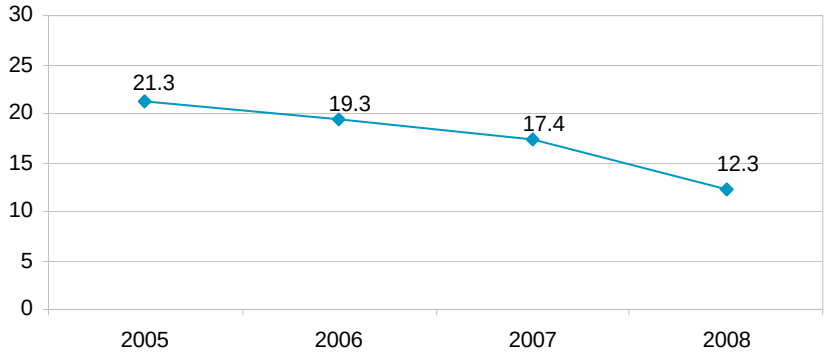
Source: ONTSI using INE 2008 data

One fifth of micro-companies with Internet access had their own website where the company was presented and access was provided to product catalogues and price lists. The availability of a website among companies with 10 or more employees was

higher than that among micro-companies, but the latter offered more services on their websites than the former.

The proportion of micro-companies with some type of security problem in the last 12 months dropped significantly in the last year, falling more than 5 pp to 12.3%.

Evolution in the percentage of companies that had some type of security problem in the last 12 months (%)



Base: micro-companies with Internet connection

Source: ONTSI using INE 2008 data

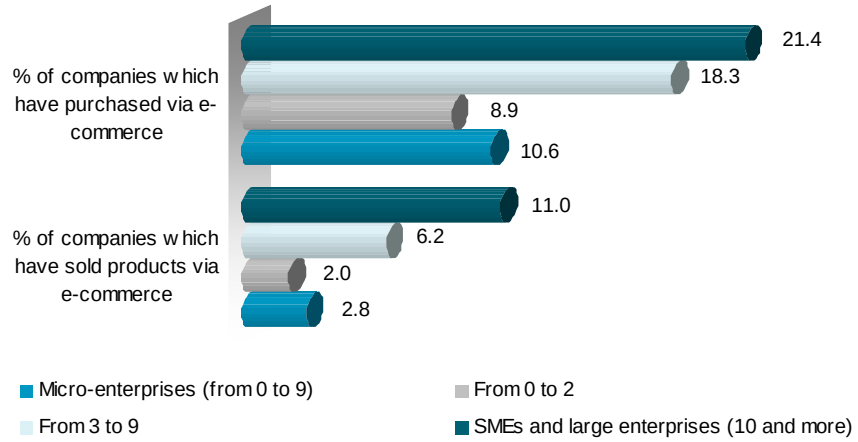
The use of the digital signature by micro-companies is common in a quarter of them, most frequently to communicate with the Public Administration (81.8%) and to a lesser extent with customers or suppliers (26.9%).

Ten percent of micro-companies had carried out automated data exchange[5] with other external ICT systems, with banks (6 out of every 10) and with the Public Administration (5 out of every 10). Regular electronic data exchange[6] with suppliers and customers was carried out by 9% of micro-companies to share information on the status of shipments (63.5% with suppliers and 45.7% with customers).

[5] Automated data exchange between the company and other external ICT systems consists of the exchange of information (e.g. orders, invoices, payment transactions or product descriptions) over the Internet or other computer networks, in an agreed format that enables automated processing (e.g. XML[5], EDIFACT[5], etc.). Manually written e-mails are not included in the concept of automated data exchange.

[6] Through telematic networks (Internet or other connections) excluding hand-written electronic mail.

Companies purchasing and selling by electronic commerce 2008 (%)



Base: all companies

Source: ONTSI using INE 2008 data

One out of every 10 micro-companies made purchases by electronic commerce and 2.8% made sales. The percentage of micro-companies with 3 to 9 employees that made purchases via the Internet reached very similar percentages to SMEs and large companies, amounting to around 20%.

The analysis of electronic commerce by sectors highlighted that of micro-companies related to computing and telecommunications, as around 46% (four times the average) had made purchases by electronic commerce. With respect to sales, the hotel sector and travel agencies headed the list with a percentage of 19.8% (seven times the average).

ELECTRONIC ADMINISTRATION

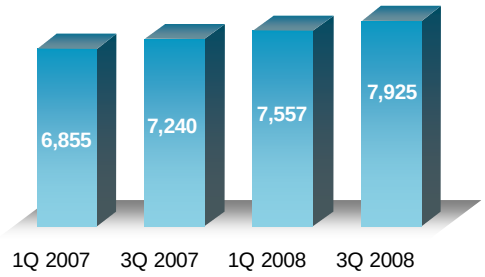
Local administrations show an unequal evolution with respect to modernisation and consolidation of electronic administration. Local bodies have implemented ICT, firstly directed towards improving their own management and then evolving towards providing services to citizens and companies via different channels and in accordance with the needs of the current Information Society. In the context of notable development, differences between local administrations - analysed by population size, economic resources (industrial, financial, etc.) and the budgets they have available - are summarised below, distinguishing between municipal and supramunicipal bodies.

In the case of town councils, the following are the most significant aspects: more than 80% of the computers available have an Internet connection; externalisation of ICT services is increasingly generalised, especially technical support and maintenance; services for citizen participation (especially making complaints and suggestions and participation in forums and surveys) are more common than the possibility of accessing files and personal data; the majority of councils with systems for electronic procedures enable online submission formalities, although there are few that can complete the whole administrative process.

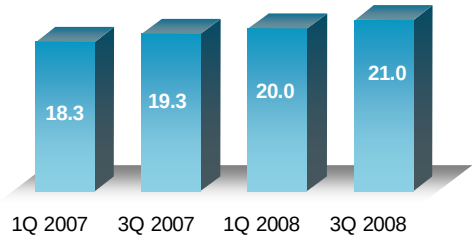
Referring to supramunicipal bodies (regional councils, island councils, etc.) the most significant aspects are: they play an important role in the process of modernisation and incorporation of ICT owing to their function of supporting and collaborating with the municipalities; there is a high degree of outsourcing, especially in the development of applications; all the bodies have a local network, with a high degree of connection between offices; almost all bodies have systems for financial management, HR management and files entry and dispatch records; they offer a variety of ICT services and support to the municipal councils with an unequal degree of implementation between segments and other types of services.

With respect to the relationship of citizens with e-Administration, it was observed in 2008 that 21% of the population had contacted a public administration (national, regional or local) via the Internet at least once, reaching a total of eight million users, 685,000 more than in the same period the previous year.

Individuals who have contacted a public administration via the Internet



Thousands of individuals aged 15 and over



Percentage compared to the total number of individuals aged 15 and over

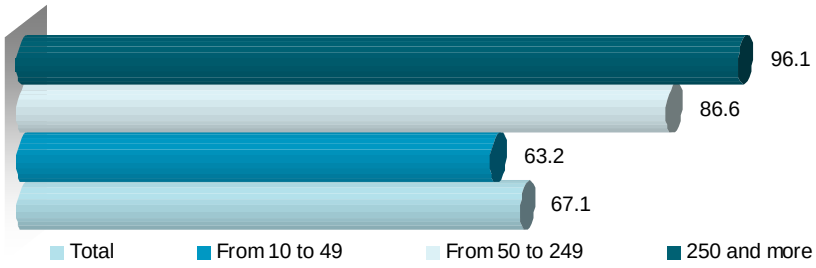
Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society)

Looking up information, the most common use of e-Administration by citizens, was most frequent for questions about taxes (performed by 62% of Internet users), followed by enquires about grants and financial aid (40%), and enquires related to healthcare services (33%). Downloading of forms was carried out by a similar proportion of Internet users, but fewer than those looking up information.

Among the operations requiring a higher degree of interactivity, or more complete interactivity, payment of taxes and requests for documents were the procedures performed by the highest percentage of citizens who were users of e-Administration, 37.5% and 31.8% respectively. These were followed by the presentation of applications and the presentation of complaints, around 13% and 10%, respectively.

Lastly, as regards electronic administration and companies, the most important aspects of their evolution during 2008 are shown below, depending on whether they are SMEs and large companies (10 or more employees) or micro-companies (from 0 to 9 employees).

Companies of 10 or more employees that interacted with the public administration over the Internet (%)



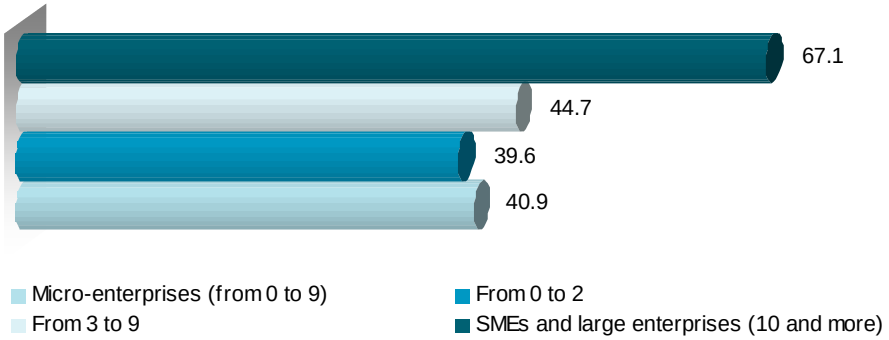
Base: All companies of 10 or more employees with Internet access

Source: ONTSI using INE 2008 data

Among companies of 10 or more employees, two out of every three interact with the public administration via the Internet. With an annual increase of more than 5 pp, 67.1% of companies interacted with the public administration via the Internet, with an additional significant improvement of the percentage of companies that have achieved complete electronic management (from 27% in 2007 to 42% in 2008).

Among micro-companies, four out of every ten interacted with the public administration via the Internet (40.9% of micro-companies with Internet connection) reflecting an important improvement compared to the previous year, which translates into 5.5 pp more in one year. In addition, the activities performed by micro-companies on the administration website have been increasing in specialisation: with an increase greater than 6 points, 21.4% of micro-companies returned completed forms and 17% fully completed all the procedures required via this route. Business support activities (agents, consultants, real estate, etc.) are noteworthy in this respect with 55% of these micro-companies interacting with the public administration via the Internet.

Micro-companies interacting with the public administration via the Internet (%)



Base: Micro-companies and other companies with Internet connection, by number of employees

Source: ONTSI using INE 2008 data

The Networked Society 2008
Annual report

3. Plan Avanza

3. PLAN AVANZA

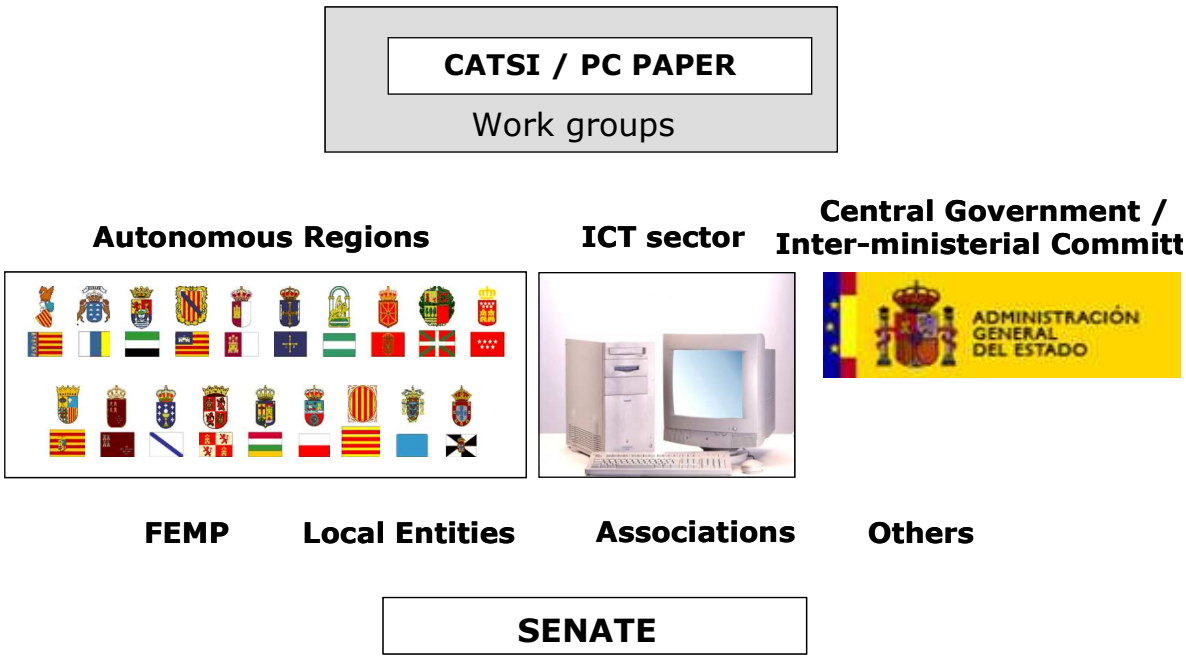
3.1. Introduction

Plan Avanza is a historical landmark in the development of information and knowledge society, since it represents the Spanish government's and society's first real commitment to this objective.

The Plan Avanza was approved by agreement of the Spanish Council of Ministers on 4 November 2005 and was designed to put Spain in a preferential position within information and knowledge society, to improve economic productivity and the welfare of all Spanish citizens.

Plan Avanza2 was presented to the Council of Ministers on 30 January 2009, with the aim of consolidating the milestones achieved in the Avanza project and to reinforce and define new measures based on identified priorities. The main objectives of the Plan Avanza2 include promoting the intensive, productive and generalised use of ICTs which will benefit the country's economic recovery.

Headed by the Spanish Ministry of Industry, Tourism and Trade, the Plan Avanza was drafted with the agreement of all central government ministries and the social agents involved:



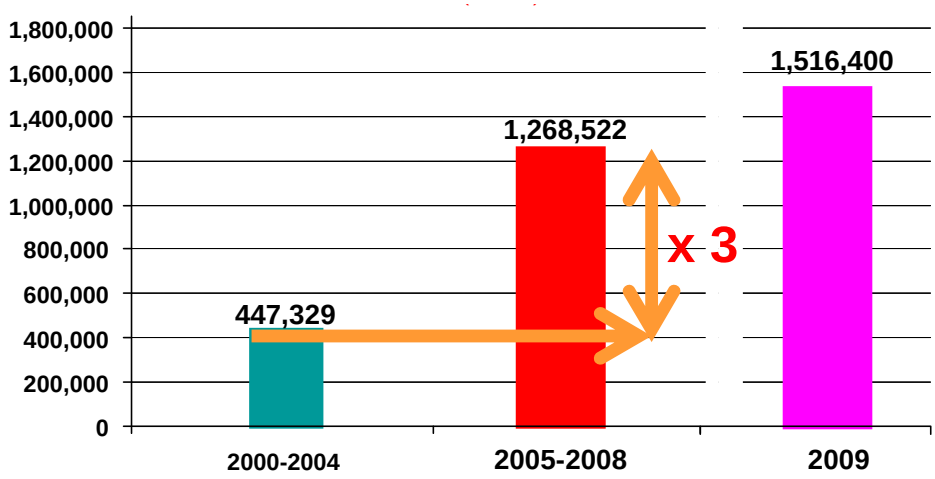
Allocated funds:

Avanza includes a series of legislative measures and initiatives for direct action with a specific budget.

From the outset, the Plan has followed a policy of "shared effort", through agreements and joint financing with all social, public and private agents. In total, Avanza has allocated the following funding:

- The 2005-2008 Avanza Plan budget is over €5.076 billion, of which more than 99% has been allocated.
- Agreements with all autonomous regions worth €1.297 billion, of which the autonomous regions have contributed €188 million .
- Additional funds allocated in 2006-2007 of more than €3.8 billion

Figure 1. Average annual budget for the development of the Information Society (thousands of Euros)

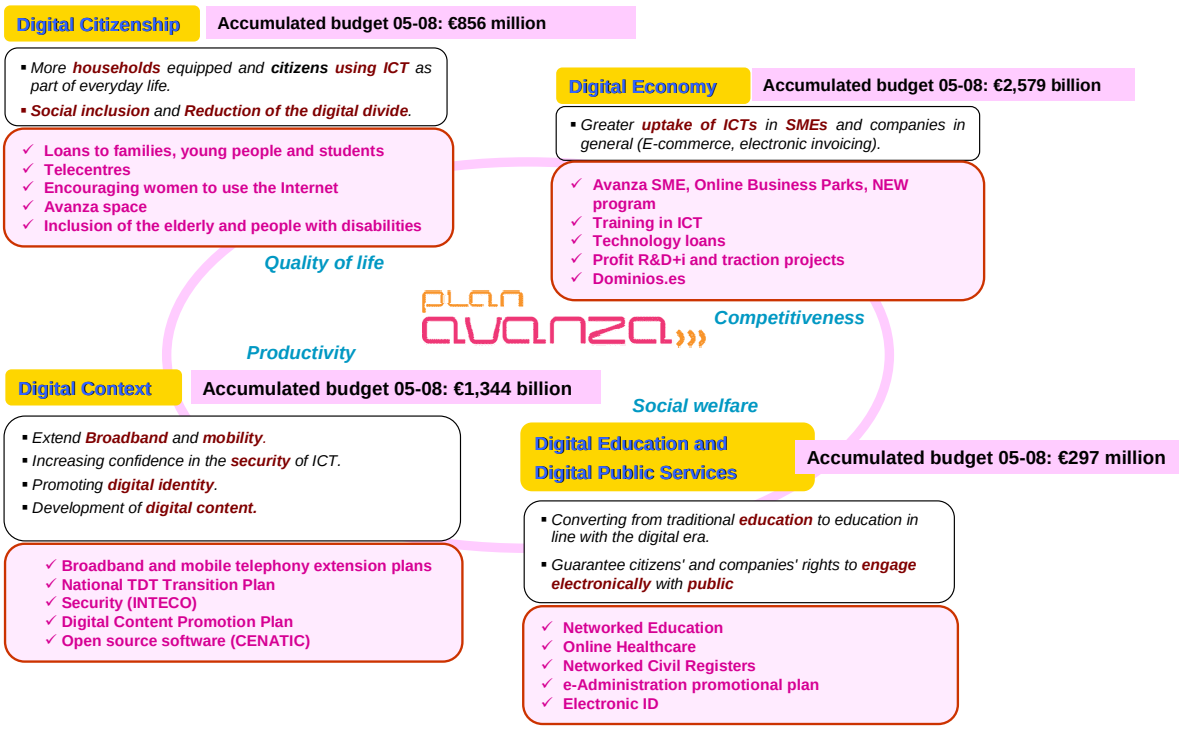


Source: SETSI (State Secretariat for Telecommunications and Information Society)

3.2. Lines of action and principal achievements

The Plan Avanza is organised into four main lines of action: Digital Citizenship, Digital Economy, Digital Public Services and Digital Context. The objectives, budget and specific initiatives of these are summarised in the following table.

Figure 2. Plan Avanza lines of action:



Source: SETSI (State Secretariat for Telecommunications and Information Society)

The main achievements of the Plan Avanza in each of its lines of action are:

Digital Economy

- Avanza has funded more than 2,760 R&D+i projects in companies, with an investment of over €1 billion.
- More than 105,000 SMEs have received 0% interest Avanza loans (€1.160 billion).
- Total funding (including credit and loans) exceeds €2.160 billion.
- Over 1,020,000 new ".es" domains.
- Over 730,000 workers have received training in ICT.

Digital Citizenship

- A total of 23.6 million citizens are connected to the Internet, 97% with broadband (in 2003 there were 11.7 million, 50% with broadband).
- A total of 188,000 families have received 0% interest Avanza loans (€228 million).
- There are now 11,256,000 Spaniards with an electronic ID (14 July 2009).

- A total of 12 million people in rural areas have received training in and access to the Internet, thanks to nearly 3,000 telecentres and 2,500 connected libraries.

Education and Public Digital Services

Networked Education

- Thanks to "Internet in the Classroom", Spain is currently the European country with the second most developed ICT support system for education.
- A total of 99.3% of schools have received ICT equipment and Internet connections, 98% with broadband..
- A total of 90% of teachers have received training in ICT.
- Six out of ten teachers use digital teaching materials and multimedia content in their classrooms.

Healthcare on the Internet

- Plan to interconnect the regional healthcare systems: over 60,000 PCs in more than 6,200 health centres, benefiting 33.5 million people and 253,000 professionals.
- Services development: interoperable health card, electronic prescription, digital medical records, online appointments, etc.
- Spain has become an example to the world

Public Services on the Internet

- A total of 70% of public services are available on the Internet, eight points above the European average.
- Avanza Local: 435 local entities with new ICT equipment and services. An investment of €314 million.
- Up to December 2008 over 26.5 million pages have been transferred to digital format in 227 civil registers and over 1,900 computers have been installed in 1,331 magistrates' courts.

Digital Context

- Broadband Extension Plan this plan has led to 99% of the population having broadband coverage (19 points more than in 2004). Public/private investment: €568 million.
- DTT coverage: A total of 96% of the population, the highest level of coverage in the world, and 19 million receivers sold (July 2009).
- Mobile telephony coverage: 99% (one of the highest in the EU).
- Digital Content Promotion Plan: €390 million in grants in 2007-2008. Success of the International Digital Content Fairs FICOD I (Nov. 07) and FICOD II (7,200 companies and professionals registered – Nov. 08).

Likewise, with regard to the protection of users' rights, since 2004 the Ministry of Industry, Tourism and Trade (MITYC) has approved an extensive series of pioneering legislation, setting a benchmark within Europe, which has led to telecommunication service users enjoying a high degree of protection.

- General legislation regulating services with additional charges: Order PRE/2410/2004 (July 2004)
- General regulation of users' rights: Universal service legislation (April 2005)
- Specific regulation for service quality: March 2006 (Order ITC/912/2006, dated 29 March)
- Regulation of procedures for claims to the SETSI (State Secretariat of Telecommunications and the Information Society) and customer support by operators: April 2007 (Order ITC/1030/2007, dated 12 April)
- Legislation regulating new services with additional charges: SMS Premium and 905 telephone numbers: February and December 2008, respectively

Furthermore, in April 2005, the MITYC set up the Office of Telecommunication Users (Oficina de Atención al Usuario de Telecomunicaciones), which has a role to process and propose solutions to disputes between telecommunications operators and users and to provide information and support to users.

3.3. Diagnosis and new priorities identified

The diagnosis of the Plan Avanza shows the creation of a critical mass in Spain in terms of market, users, acceptance of ICTs and global coverage of services.

Avanza has managed to turn the telecommunications and information society sector into a strategic sector, a driving force and a stimulus for the development of other sectors. Information society, as a necessary component in any economic or industrial activity, has a general and horizontal effect across the whole of the economy and constitutes an essential element for structuring economic recovery.

Avanza is a dynamic plan, in continual contact with the sector's agents and in constant evolution. As a consequence of the implementation of the measures of the Avanza Plan, new needs are emerging and new challenges are being identified that require existing measures to be strengthened or new measures to be defined along the following lines:

- Training in and fomenting the use of ICTs among the population: Rural population, the elderly, the disabled and special collectives.
- Training for SMEs: Internet presence, e-Business, B2B and B2C electronic commerce.
- Development and evolution of the ICT sector (SMEs): The Internet of the Future, digital content, use of the radio spectrum.
- Digital Public Services: Completion of the programmes in education, healthcare, e-DNI (e-ID), civil registers.

- Infrastructures: DTT penetration in households, high speed networks, Common Telecommunications Infrastructures (CTI).
- Confidence, security and accessibility.

Within these areas of action, new priorities have been identified, which will continue to develop, but at a pace and intensity in keeping with resources allocated to them:

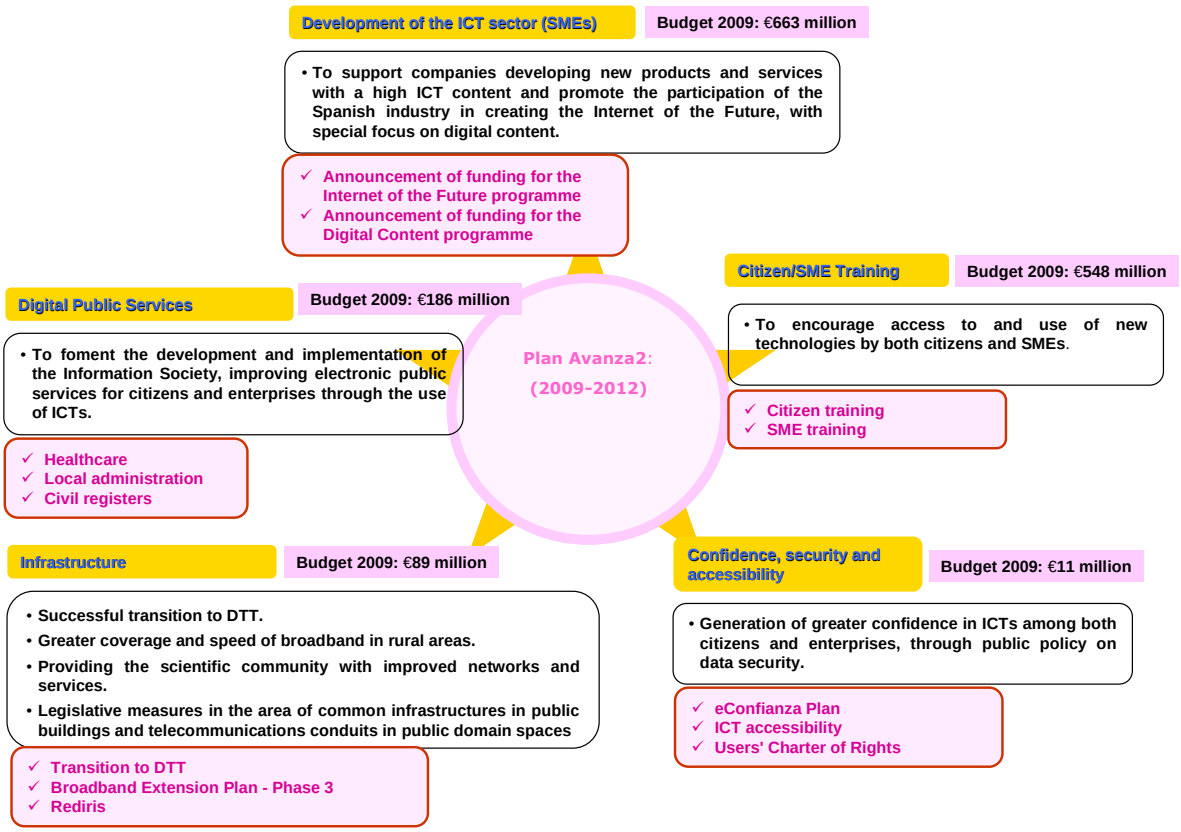
- ICT and micro-companies: Although the use of ICTs has improved substantially, there is still ample room for growth in relation to larger companies.
- Potential of the digital content industry: An accumulated growth of 45% over the last four years.
- Population and age: The use of the Internet in Spain is higher than in the rest of the EU for ages between 16-34, and is lower for the over 55s.
- Electronic Commerce: Only 10% of Spanish companies sell products on the Internet (EU average: 17%).
- DTT interactivity.
- Internet security: This continues to be the main aspect that discourages non-Internet users and checks a more advanced use by habitual Internet users.
- Encouraging the use of the electronic ID.
- Common Telecommunication Infrastructures (CTI).
- Consolidation and development of educational platforms and content .
- Implementation of new applications and content in healthcare.

3.4. Plan Avanza2

Plan Avanza2 has been defined with the aim of consolidating the milestones achieved in the Avanza project and reinforcing certain strategic lines based on the diagnosis and evaluation undertaken.

Avanza2's initiatives can be summarised into 5 major lines of action. Development of the ICT sector, ICT Training, Digital Public Services, Infrastructure and Confidence, Security and Accessibility. The objectives, main programmes and funding allocated to each line are shown in the following graph.

Figure 3. Plan Avanza2 lines of action: 2009-2012



Source: SETSI (State Secretariat for Telecommunications and Information Society)

One of the main objectives of the Plan Avanza2 is to contribute to the recovery of the Spanish economy, through the intensive and generalised use of ICTs, with special emphasis on projects that also combine sustainability and energy savings.

The challenge for Avanza2 lies not so much in revitalising supply (which has already been achieved to a large extent), but in fostering demand within society and taking advantage of the momentum of the sector's development in order to create a specialised ICT sector within the sectors identified.

3.4.1. Main programmes of Plan Avanza2

Development of the ICT sector (SMEs)
Objective: To provide support for companies that develop new ICT products, processes, applications and services. To promote the participation of the Spanish industry in creating the Internet of the Future.
Programmes and actions: ▪ **Internet of the Future and Digital Content Programs** Avanza2 **SME Digital Content programme** Objective: To encourage the creation of digital content and tools that allow their development and operation as well as the creation of digital content knowledge and reference centres. Avanza2 **R&D+i in ICTs and the Internet of the Future programme** Objective: In line with EU priority strategies, this funding aims to ensure that Spanish companies take a leading role in the transformation process of the ICT sector and the Internet, so that the "Internet of the Future" is not simply an evolution of the current net but a new concept in telecommunications network characterised by converging technologies, networks, services and content that allow new forms of communication and interaction by users. Avanza2 **Technological training of the digital content industry's future professionals in universities.**
Avanza2 **Early Demand (virtual worlds)**

Citizen/SME Training
Objective: To promote access to and the use of ICTs by citizens and SMEs.
Programmes: ▪ **Citizen training** Objective: To guarantee that citizens are incorporated into and remain part of the Information Society. Avanza2 **Citizenship**: Support for people and groups at risk of digital exclusion. ▪ Avanza2 55+, Avanza2 Internet without Barriers and Avanza2 Gender. ▪ Avanza2 Education: Internet in the classroom: ICT resources and services in schools. ▪ Avanza2 Promoting the "060.es" network through telecentres. Avanza2 **Citizen Loans** (0% interest requiring no guarantees or commissions) ▪ **SME training** Objective: Introduction of e-Business solutions, including electronic invoicing, to improve competitiveness and productivity . Avanza2 **SME** ▪ **Avanza2 SME:** Networked Companies, Risk Capital (particularly digital content). ▪ **Avanza2 SME:** Meeting multi-annual commitments 2008 Editions. Avanza2 **ICT Loans** (0% interest requiring no guarantees or commissions) Avanza2 **Training:** ICT and e-Business training for SMEs

Confidence, security and accessibility

Aims: To reinforce confidence in ICTs among citizens and companies, through public policy on data security.

Promoting ICT services that are accessible to all citizens.

Programmes and actions:

- **eConfianza Plan**

  Objective: To detect opportunities for innovation in security technologies.

  Lines of action: Protection of privacy on the Internet and protection of children, combating online fraud, support for protecting logical infrastructures (INTECO).

- **Accessibility**

  Objective: Fostering social inclusion and access to Electronic Administration through the implementation of accessibility projects.

  Lines of action: Advice on accessibility, auditing, training and dissemination (INTECO).

- **Telecommunication Users' Charter of Rights:**

  Main measures:
  - **Advertising speeds greater than are technologically possible** will be prohibited.
  - Maximum term for cancellation: to be reduced from 15 to 2 days (the same as for portability)
  - Operators to have greater obligations to guarantee effective customer service.

Infrastructure

Aims: Successful transition to DTT.
Greater coverage and speed of broadband in rural areas.
Providing the scientific community with improved networks and services.
Legislative measures in the area of common infrastructures in public buildings and telecommunications conduits in public domain spaces

Programmes:

- **Avanza2 Infrastructure**
  - **National Plan for the Transition to DTT:**
    - Objective: To extend the penetration of DTT with the aim of fully replacing analogue TV with digital TV before 3 April 2010.
    - Monitoring using quantitative indicators of the 90 technical transition projects:
      - Connecting households to DTT
      - Digital coverage
      - Adapting shared aerials
      - Decoder sales
      - DTT awareness
  - **Plan for Extending Broadband – Phase 3** ([7]Budget pending ERDF funds**)**:
    - Objective: To improve the provision and reach of broadband lines in rural and isolated areas .

[7] ERDF: European Regional Development Fund

- Actions in centres with dispersed population.
- Extending the reach of trunk fibre optic networks.

- **Regulatory measures:**
  - Shared infrastructures in buildings and telecommunication conduits in the public domain spaces.
- **Rediris**
  - New project Rediris NOVA (dark fibre network project).

Digital Public Services
Objective: To promote the development and implementation of the Information Society, improving electronic public services for citizens and companies through the use of ICTs.
Programmes: ▪ **Avanza2 Digital Public Services:** ▪ **Avanza2 Digital Public Services (Local Administration).** ▪ **Avanza2 Education - Internet in the Classroom.** Infrastructure and educational digital content. AGREGA Platform. ▪ **Avanza2 Digitisation. Civil Registers and Magistrates' Courts.** ▪ **Avanza2 Healthcare on the Internet Developing e-Healthcare.** ▪ **Open source software (CENATIC)**

3.4.2. Impact of Avanza2 measures on job creation

As mentioned, Avanza2 strengthens the momentum of business development with emphasis on key sectors in the ICT industry, such as the Internet of the Future and digital content.

Avanza has already managed to create a market in Spain for developing applications and services in e-Education, healthcare on the Internet, electronic ID, DTT, etc. This demand has revitalised the activity of companies in the sector and has generated new business opportunities, both for existing companies and for new business ventures, resulting in job creation.

Examples of the direct impact on the economy and employment include:

- The Plan for the Transition to DTT in Spain, from November 2005 to April 2010, will require more than €12 billion and will create more than 35,600 jobs.
- The new regulations for Telecommunication Infrastructures in buildings and conduits in the public domain will likewise have an impact on job creation as they will involve, among other aspects, the adaptation of urban buildings already constructed.

All together, thanks to the measures included in Avanza2, 200,000 direct and indirect jobs will be created in 2009 – 2012.

The Networked Society 2008
Annual report

4. The Information Society in the world

The figures given are the latest available to February 2009. Work is being carried out in collaboration with international entities to help speed up their publication.

4. INFORMATION SOCIETY IN THE WORLD

The Information Society is growing steadily throughout the world, both in terms of access to ICTs and the market that supports new technologies. Within this overall evolution there are differences between different geographical regions and between countries within a region, according to the socio-economic context, sector regulation and the degree of maturity already reached by the Information Society.

4.1. Access to Information Society in the world

Access to ICT infrastructure is the first step a society needs to make in order to take advantage of the benefits of new technologies and to become a part of an increasingly globalised world. In developed countries, access to telephony and the Internet is by and large generalised, with slow growth rates due to the situation of maturity and stability. As far as infrastructure is concerned, opportunity in these countries with advanced economies now lies in the development of high speed networks, both landline and mobile, and in mobile devices with innovative features, interactive television, etc.

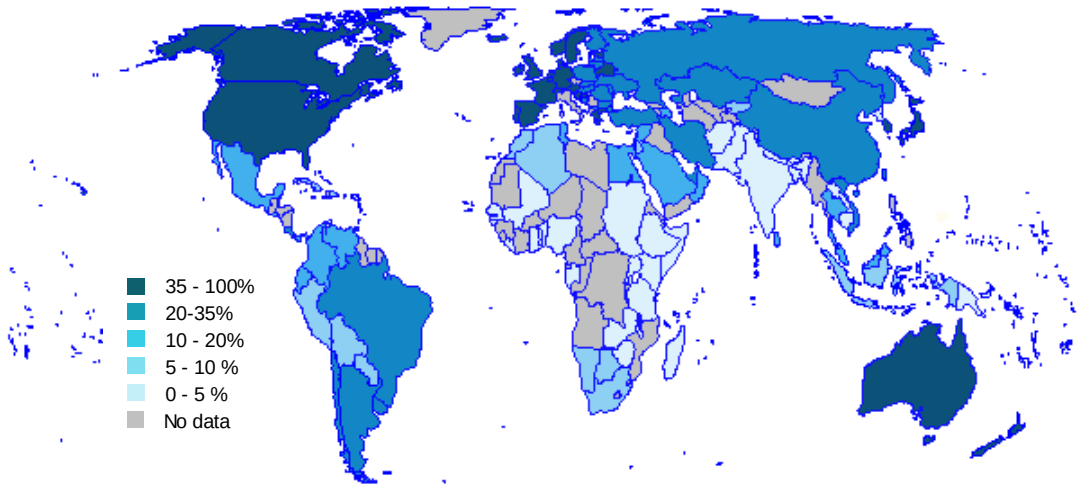
In contrast, poor and developing countries - despite having urban areas and socio-economic segments that need to maintain progress in order to keep up with more advanced economies - still need to extend access to basic voice and data communications to a large part of their populations. Mobile telephony has taken on an important role in providing voice services to a large percentage of the population who, for the first time, are able to access telephony, particularly in rural areas. However, it is important to bear in mind that the mobile coverage that reaches these areas facilitates voice communication but does not provide access to Internet services, which can lead to significant advantages for progress. Below is an analysis of the level of access to the principal technologies by world region.

Landline telephony

According to the International Telecommunications Union, landline telephony on a global scale continues to lose ground, with 19.1 landlines per 100 inhabitants in 2007 compared to 19.5 in 2006. However, three very distinct situations can be identified, according to the degree of ICT evolution within countries.

On the one hand are countries with a high density of fixed telephony among their inhabitants, such as the United States, Canada, Australia and Western European countries, among others, with values of between 35 and 65 lines per 100 inhabitants. In these countries, fixed telephony, having achieved almost total coverage, has started to see a decline in the number of subscribers as it is replaced by mobile phone lines.

Figure 4. Number of fixed lines per 100 inhabitants.



Source: UIT. ICT Indicators Database 2008.

On the other hand are the regions of Africa and Asia which, starting from very low levels, have seen significant increases over the last few years, although there are barely 3.2 fixed telephony lines per 100 inhabitants in Africa and 15.6 in Asia. Looking at the period 2002 to 2007, the number of fixed lines has risen by 34% in Africa and 45% in Asia (in both cases there was a slight slowdown in the last year). These regions also have the highest compound annual growth rate[8] (2002-2007) of between 10% and 15% (China, Indonesia, Vietnam, Sri Lanka, Nepal, Uganda, Morocco, etc.), and are home to the countries with the highest number of fixed telephone lines in the world (China, with 366 million accounts for 30% of the total).

Table1: Fixed telephony lines in the world by region

Region	Fixed telephone lines (thousands)		% growth 2002 - 2007	Fixed telephone lines / 100 inhabitants - 2007
	2002	2007		
Africa	22,793	30,593	34.2%	3.2
North America (USA and Canada	209,872	181,411	-13.6%	53.6
Rest of America	88,400	101,622	15.0%	17.8
Asia	428,515	622,013	45.2%	15.6
Europe	320,677	328,812	2.5%	40.8
Oceania	12,499	11,953	-4.4%	35.1
World	1,082,756	1,276,403	17.9%	19.1

Source: ITU. ICT Indicators Database 2008

[8] CAGR: Compound Annual Growth Rate

Finally, Latin America has experienced moderate growth over the last few years, 15% in the 2002-2007 period, and has a density of 17.8 fixed lines per 100 inhabitants, on average.

Mobile telephony

The use of mobile telephony in the world rose to over 50 subscribers per 100 inhabitants for the first time. Growth was 21.6% compared to 2006 and in 2007 the number of mobile subscribers rose to more than 3.3 billion.

The use of mobile telephony in the world rose to over 50 subscribers per 100 inhabitants for the first

Table2: Mobile telephony subscribers in the world by region

Region	Mobile telephony subscribers (thousands)		% growth 2002 - 2007	Mobile subscribers / 100 inhabitants - 2007
	2002	2007		
Africa	36,924	274,068	642.3%	28.4
Asia	443,937	1,497,254	237.3%	37.6
America	255,451	656,918	157.2%	72.2
Oceania	15,459	27,011	74.7%	79.2
Europe	405,448	897,516	121.4%	111.3
World	1,157,219	3,352,767	189.7%	50.1

Source: ITU. ICT Indicators Database 2008

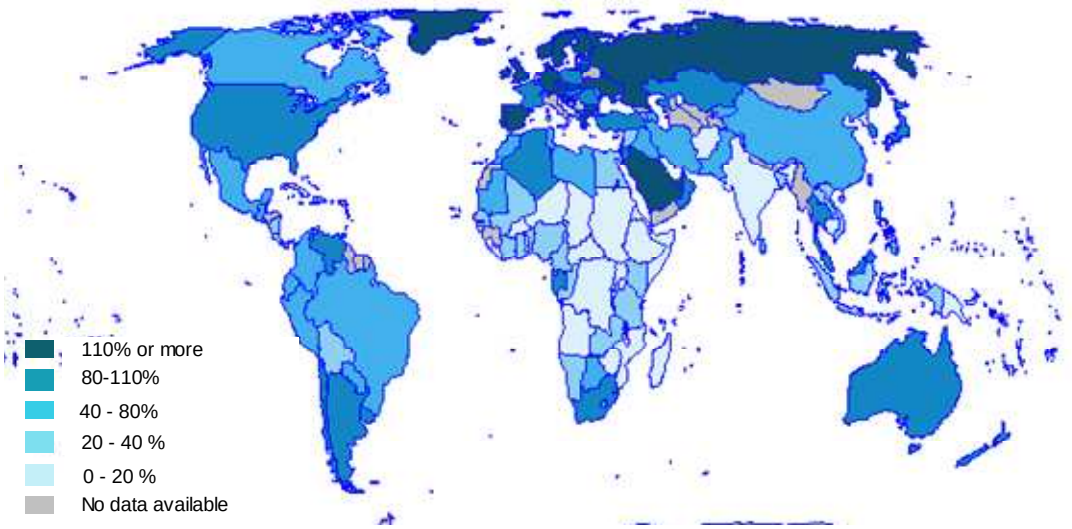
As with fixed telephony, the highest growth rates for mobile telephony were in Africa and Asia, but with values many times higher than those for fixed telephony. Africa has 28.4 mobile subscribers per 100 inhabitants and a CAGR between 2002 and 2007 of almost 50%. Asia reached a density of 37.6 mobile subscribers per 100 inhabitants, contributing almost one and a half billion mobile subscribers to the global market, equivalent to 45% of the total.

At a slower rate, but with a higher mobile telephony density, Europe, having exceed one hundred subscribers per 100 inhabitants in 2006, reached 111.3 in 2007. At the top of the ranking is Italy with 153.1 subscribers per 100 inhabitants.

Australia and New Zealand, along the same lines as Europe, have more than 100 subscribers per 100 inhabitants, while the global penetration of Oceania is 79.2 subscribers per 100 inhabitants.

In America, the number of mobile subscribers has reached 657 million, an annual increase of 16% on 2006 and a density of 72.2 mobile subscribers per 100 inhabitants. The United States is home to 39% of the region's subscribers and has 83.5 subscribers per 100 inhabitants, while Brazil is home to 18% and has 63.1 users per 100 inhabitants.

Figure 5. Mobile telephony subscribers per 100 inhabitants



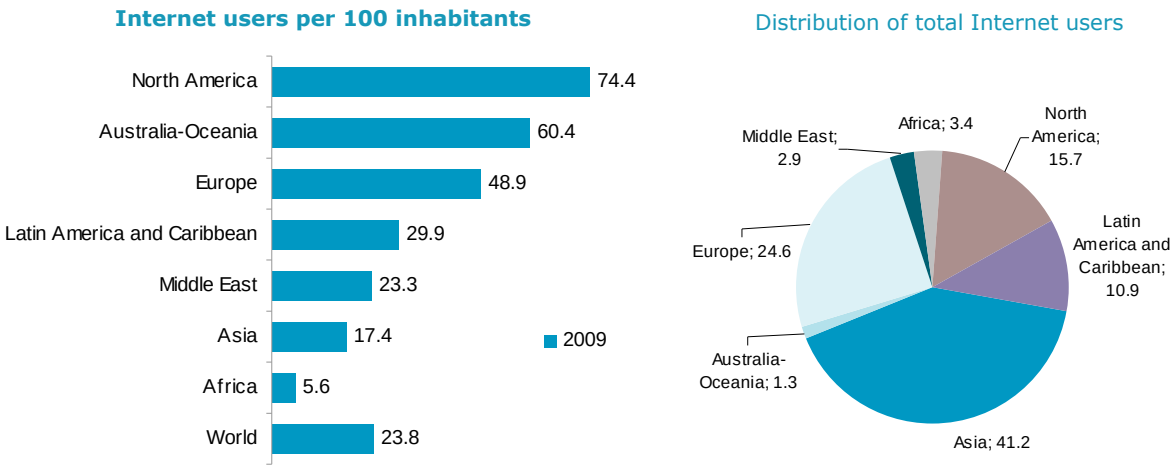
Source: ITU. ICT Indicators Database 2008

Internet

According to the ITU, 2007 saw the number of Internet users rise to almost 1.4 billion, equivalent to a penetration of 20.9%.

The most recent statistics from Internet World Stats indicate that there were 1.596 billion Internet users in the world in March 2009, a penetration rate of 23.8%. Asia has the highest percentage of Internet users, with 41.2% of the total, while Europe, in second place, accounts for 24.6%.

Figure 6. Internet users in the world, penetration and distribution by region



Source: Internet World Stats March 2009

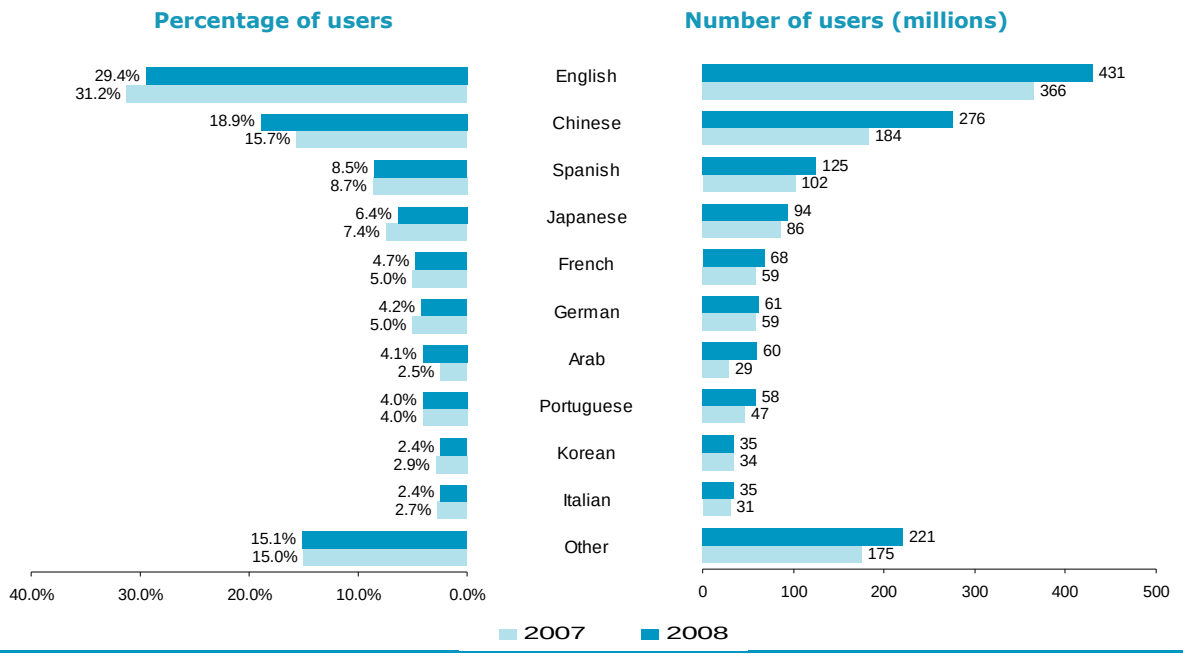
In terms of penetration by region, North America has 74.4 Internet users per 100 inhabitants, vastly exceeding the rate in all other regions. Australia has 60.4 users per 100 inhabitants and Europe has 48.9. In Asia, the Middle East, Latin America and the Caribbean, there were between 17 and 30 users per 100 inhabitants, while in Africa, the figure was no more than 6.

The most commonly used language among Internet users is still English, which has a clear lead over the rest, although it is losing ground due to the increasing incorporation of the population in Asia and other countries on the Internet, which account for the increased use of Chinese and other languages. A total of 29.4% of Internet users are English-speaking, with a 2 point fall in one year; the second language is Chinese, accounting for 18.9% and with the greatest increase of more than 3 points; and in third place is Spanish, with 8.5% of Internet users. The proportion of Spanish-speaking Internet users has remained stable over the last few years, although in absolute terms, there has been a 22% increase in numbers over the last year, rising from 102 to 125 million Spanish speaking Internet users in 2008.

The Spanish language maintains its position, with 22% of Internet users being Spanish speakers in

The second largest growth rate among the main languages has been among Arabic speaking users who, with double the number of Internet users compared to last year (60 million in 2008), increase their proportion on the Internet by 1.6 pp and now rank seventh, displacing Portuguese.

Figure 7. Internet users by language



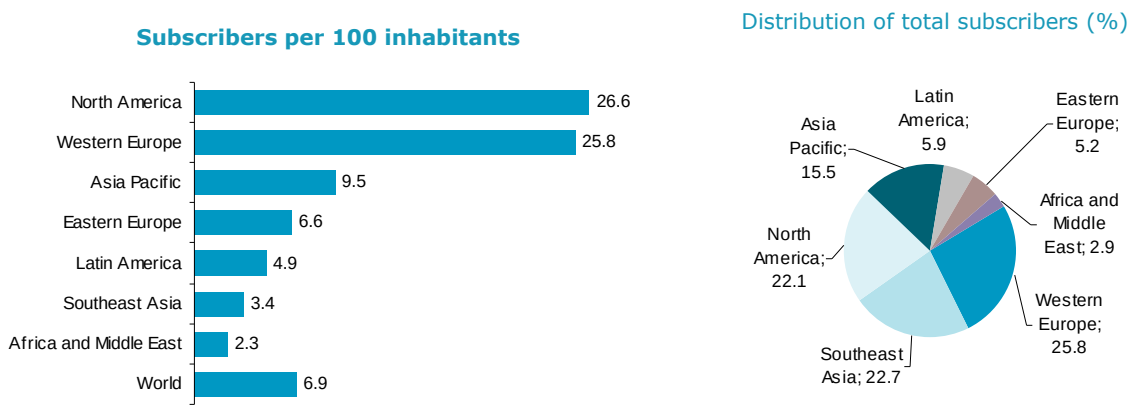
Source: Internet World Stats 2008

Broadband

According to Point Topic, at the end of the third quarter of 2008, there were 398.4 million broadband subscribers worldwide - a penetration rate of 6.9 subscribers per 100 inhabitants. Compared to the same period in 2007, there are now an additional 64.2 million subscribers, 19.5% more.

North America and Western Europe have the highest penetration rates, exceeding the figure of 25 broadband subscribers per 100 inhabitants in both cases, significantly higher than in other regions. North America had 26.6 subscribers per 100 inhabitants at the end of the third quarter of 2008 and Western Europe had 25.8 per 100 inhabitants. However, despite the growth in the number of lines in these two regions, both have lost ground in the distribution of lines on a global scale, due to the higher growth rates in other regions, particularly Southeast Asia and Latin America.

Figure 8. Penetration and distribution of broadband subscribers by region



Source: Point Topic. 3Q 2008

Asia-Pacific had a penetration rate of 9.5 subscribers per 100 inhabitants, but also lost ground in the total number of subscribers worldwide, with 15.5% compared to 16.5% in 2007.

Eastern Europe, Latin America, Southeast Asia, Africa and the Middle East have ratios of even less than 7 subscribers per 100 inhabitants, but grew in terms of the total number of subscribers worldwide. Southeast Asia is the region which gained the highest share in 2008, with 1.7 points more than in the previous year, and takes second place with 22.7% of all subscribers.

The sharpest growth in penetration was in Eastern Europe, where the figure rose from 4.7 subscribers per 100 inhabitants in the final four months of 2007 to 6.6 in the same period in 2008, and in Latin America, where it rose from 3.5 to 4.9 subscribers per 100 inhabitants.

Europe and Latin America experienced the highest growth in broadband subscriber penetration

Table3: Evolution of the distribution of broadband subscribers in the world

Distribution of total subscribers	2007 (%)	2008 (%)	Difference (percentage points)
Western Europe	26.8	25.8	-1.0
Southeast Asia	20.9	22.7	1.7
North America	23.3	22.1	-1.2
Asia Pacific	16.5	15.5	-1.0
Latin America	5.2	5.9	0.7
Eastern Europe	4.7	5.2	0.5
Africa and Middle East	2.5	2.9	0.3

Source: Point Topic. 3Q 2008

4.2. The ICT market in the global economy

The significance of the [9] ICT market in the world has remained stable in relation to the world economy for a number of years. According to IDATE, in 2008 the ICT market was worth €2.74 billion, equivalent to 6.5% of the world's GDP, similar to 2006 and 2007. The growth in the ICT market in 2008 compared to 2007 fell below 5%, with a notable slowdown in the growth figures compared to previous years.

Cases of price reductions which lead to an increased number of units being sold but a stagnation or drop in business value

There are large contrasts between the reduced growth in advanced economies and the double digit growth in emerging economies. Likewise, some advanced economies have experienced high growth in volume (number of devices sold, services subscribed to, etc.) which contrast with low or even reduced growth in value.

Table4: World ICT market

(€ billion)	2005	2006	2007	2008	Increase 2005-2006	Increase 2006-2007	Increase 2007-2008
Europe	797	831	872	902	4.3%	4.9%	3.4%
North America	739	779	816	839	5.4%	4.7%	2.8%
Asia Pacific	558	596	641	684	6.8%	7.6%	6.7%
Rest of the world*	214	247	286	317	15.4%	15.8%	10.8%
Total	**2,307**	**2,455**	**2,614**	**2,739**	**6.4%**	**6.5%**	**4.8%**

*** The "rest of the world" includes Latin America, Africa and the Middle East**

Source: IDATE. DigiWorld 2009

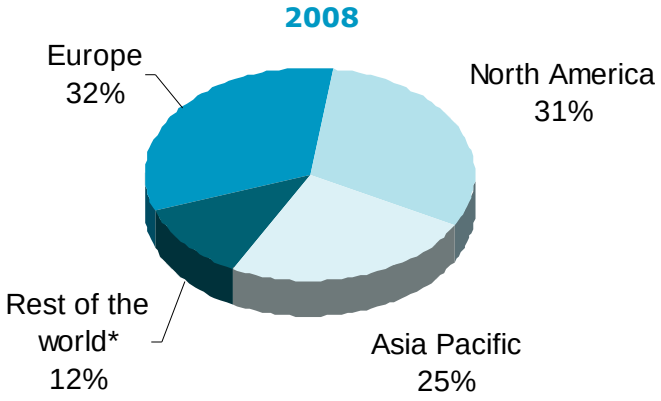
[9] The ICT market or DigiWorld (according to the definition given by IDATE), comprises the sectors which are already based - or are on their way to being based - on digital technologies: Telecommunications services, telecommunications equipment, software and computer services, hardware, audiovisual services and consumer electronics.

The main growth areas by region from 2007 to 2008 are in Asia Pacific and in the countries included in the "rest of the world" (Latin America, Africa and Middle East) group with 6.7% and 10.8% respectively. In these regions, especially in emerging countries, there is a high potential for future development.

At the other end of the scale, growth has slowed in Europe and North America, with figures of 3.4% and 2.8% respectively. These two regions accounted for 63% of the market in 2008.

When evaluating the market we should take into consideration the level of equipment in each country or region, the price of materials and above all the services on offer in the different markets. Likewise, the average values for each region may mask significant differences between countries in the same region and between activity segments.

Figure 9. Distribution of the ICT market in the world



*** The "rest of the world" includes Latin America, Africa and the Middle East**

Source: IDATE. DigiWorld 2009

4.3. Evolution by type of ICT market

The average rate of growth of the ICT market of 4.8% (2007 to 2008) is mainly driven by consumer electronics, with an increase of 7.5%. Television and computer services grew by around 5%. At the other end of the scale, the lowest rise was in the computer hardware segment, at 3.4%. In 2008, telecommunications services and equipment experienced intermediate growth rates of 4.2% and 4.5% respectively.

Almost 70% of the growth in the ICT market in 2008 was due to the increase in revenues from service activities, mainly telecommunications and computer services which grew to €40 billion and €32 billion respectively. Within telecommunications services, mobile services represented 54% of the total and accounted for the entire growth experienced within this sector.

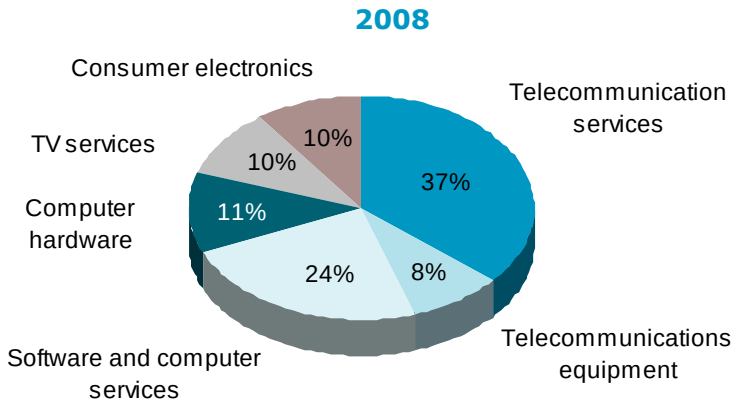
Table5: ICT market in figures

(€ billion)	2005	2006	2007	2008	Increase 2005-2006	Increase 2006-2007	Increase 2007-2008
Telecommunication services	851	901	957	997	5.9%	6.2%	4.2%
Telecommunication equipment	196	206	222	232	5.1%	7.8%	4.5%
IT services	544	581	622	654	6.8%	7.1%	5.1%
Computer hardware	270	281	296	306	4.1%	5.3%	3.4%
Television services	234	249	263	277	6.4%	5.6%	5.3%
Consumer electronics	212	236	254	273	11.3%	7.6%	7.5%
Total	**2,307**	**2,455**	**2,614**	**2,739**	**6.4%**	**6.5%**	**4.8%**

Source: IDATE. DigiWorld 2009

In 2008, the distribution of the ICT market by sector has remained virtually unchanged. Telecommunications and computer services accounted for 61% of the global ICT market. Each of the following sectors accounted for around 10%: IT equipment, television and consumer electronics services. Finally, 8% of the market volume corresponds to the telecommunications equipment sector.

Figure 10. Distribution of the global ICT market, by sector



Source: IDATE. DigiWorld 2009

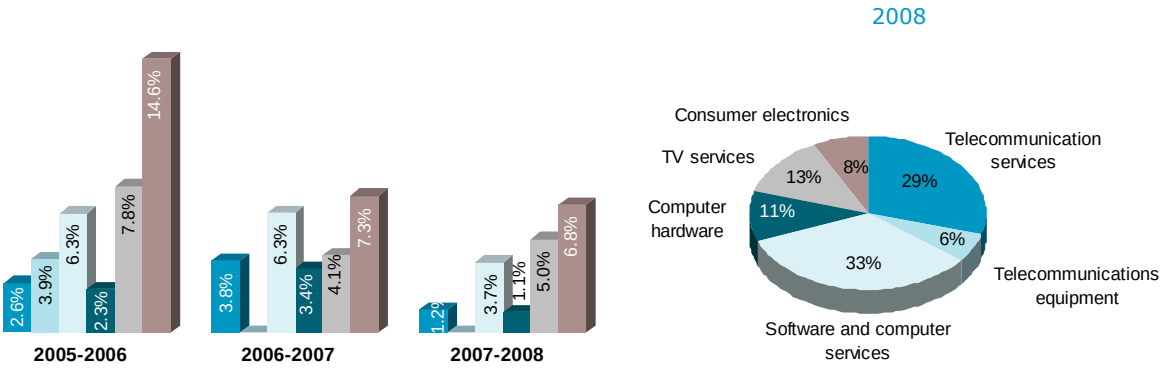
At the start of 2008, the consumer electronics market experienced sharp growth which, despite its slowdown during the second half of the year, made this the sector which progressed the most during this period. Its leading product is the flat screen television, whose volume has increased moderately this year but whose prices have fallen significantly, keeping its market volume almost unchanged.

The most notable slowdown has been in the IT equipment sector, which grew by only 3.4%. This slowdown has mainly affected desktop computers, while the laptop market has faired better against the economic difficulties. The sharpest declines in the sector were in the United States and Japan; Europe has faired slightly better but has also experienced losses. Only the emerging regions have managed to maintain a sustained level of growth.

4.4. The ICT market by region

North America accounts for 31% of the world ICT market, with a value of €839 billion in 2008, and an annual growth rate of 2.8%, which is expected to slow down even more due to the current economic climate. In this region telecommunications services and computer and software services each account for approximately 30%.

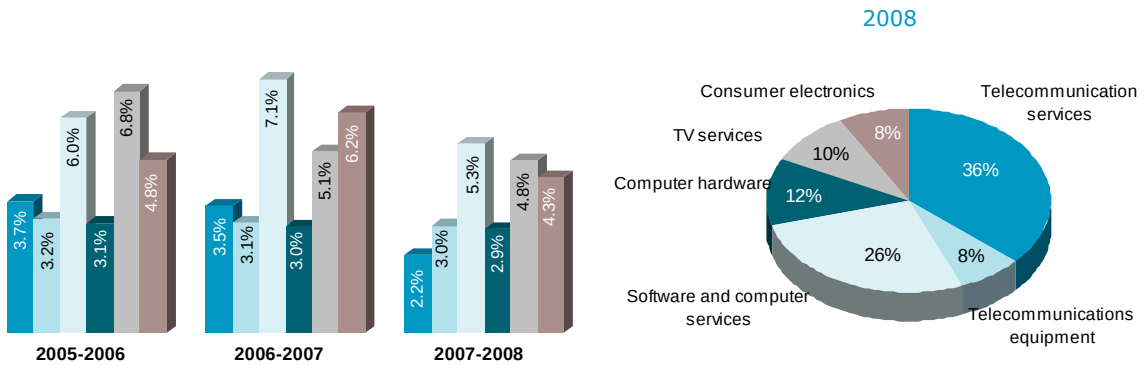
Figure 11. Growth and distribution of the ICT market in North America



Source: IDATE. DigiWorld 2009

The largest ICT market is in Europe: it accounts for 32% of the world market worth €902 billion in 2008. Its annual growth rate sits at 3.4%, slowing down since 2006 when it reached 4.3%. This slowdown is mainly due to the decline in the telecommunications market (services and equipment), which makes up 44% of its ICT market. In 2008 the telecommunications services market grew by 2.2% and telecommunications equipment by 3%.

Figure 12. Growth and distribution of the ICT market in Europe



Source: IDATE. DigiWorld 2009

The maturity of the markets, especially mobiles with a density of over 120% but also to a lesser extent, broadband, has automatically led to a slowdown.

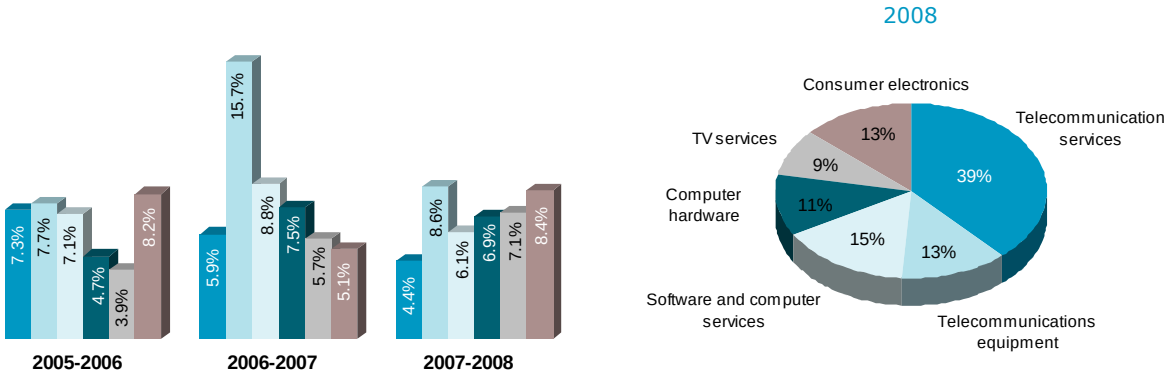
In North America, computer and software services account for 33% of the ICT market. The highest annual growth rate in the European ICT market was in computer and software services, with growth of 5.3% in 2008, while the computer hardware market grew at a slower rate (2.9%).

The Asia Pacific region accounts for 25% of the world ICT market, worth €684 billion in 2008, and the second highest growth rate of 6.7%. However, this dynamic group masks stark differences between the advanced countries (mainly Japan and South Korea) and the emerging countries (China and India), but also numerous medium-sized countries, where development is also in full swing).

Japan on its own accounts for 40% of the region's sales, way ahead of China (23%). These two countries, together with South Korea and India, account for 80% of the region's total market.

Japan and Korea have an advantage over a large number of other industrialised countries, specifically in telecommunications. They have the largest numbers of third generation customers with a total of 120 million between the two countries at the end of 2008 (85% of the mobile market in Japan and 75% in South Korea), and they account for almost a third of the world's customer base. Likewise, both countries currently support more than 40% of all broadband connections.
China has continued to equip itself at an incredible rate in 2008 with 100 million new mobile customers and 18 million new broadband subscribers.

Figure 13. Growth and distribution of the ICT market in Asia Pacific



Source: IDATE. DigiWorld 2009

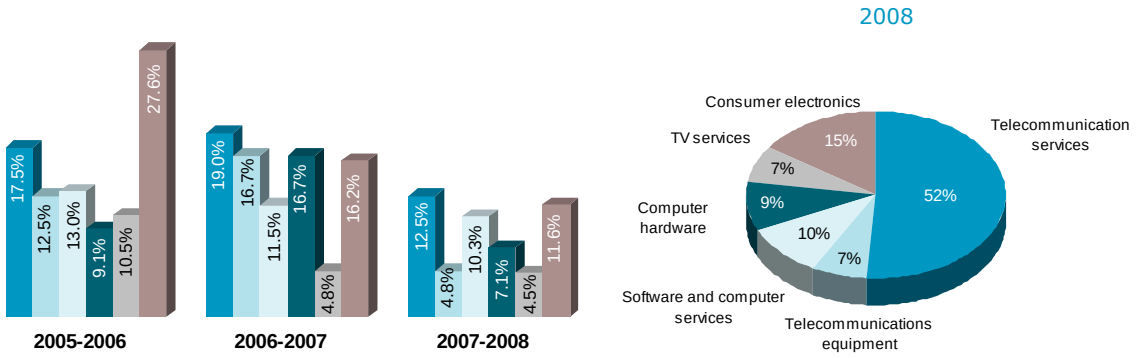
The market in Latin America, Africa and the Middle East experienced the sharpest growth in 2008, reaching €317 billion. There was a slowdown in growth for the period 2007–2008 to 10.8%, compared to 2006 when growth reached 15.4% and 2007 when it reached 15.8%.

Brazil and Mexico clearly dominate the markets of the region accounting for almost two thirds of the total.

In telecommunications, mobile services in particular experienced a high degree of success with more than 420 million customers at the end of 2008 in the region (an average density of 76%) divided fairly equally between the countries. However, there are some important exceptions. Argentina has a mobile density of over 100% while Cuba has yet to reach 2%. At the end of 2008, Latin America had 26 million broadband subscribers, with a density of almost 5%, and leads the table of emerging regions.

In the Africa/Middle East region, the northern countries are much more advanced. Within this area, Israel holds a totally unique position with an ICT development level equivalent to that of large western countries: more than 28% for broadband and a mobile density of over 140%. By contrast, equipment levels are still very low in sub-Saharan Africa, except for mobile telephony, and the situation is evolving slowly.

Figure 14. Growth and distribution of the ICT market in Latin America and the rest of the world



Source: IDATE. DigiWorld 2009

4.5. Digital content

Digital content is playing an increasingly important role in stimulating and developing modern economies and societies. The digital content industry, a sector that has been growing steadily in recent years both in Spain and the rest of the world, has been attracting enormous interest from the population as a whole and particularly from entrepreneurs and other agents (creators, producers, editors, distribution companies, aggregators and operators), both because of the industry's short term growth potential and the enormous impact it has on citizens' habits and attitudes to leisure, work and daily life in general.

Aware of this importance, businesses all over the world are adapting their business logic to what has become a new paradigm for information exchange, service offerings and customer relations.

The aim of this section is to give a broad overview of the digital content industry in the world, taking the main production sectors as a base: social networks and collaborative content, video games, audiovisual, publications, advertising and cinema. One of the most significant factors is the growing importance of digital content created by

"Internet users" (citizens, companies, public administrations and educational institutions), all of which make a fundamental contribution to the development of Information Society. This is the content type presented in the first subsection on social networks and collaborative content.

Social networks and collaborative content

A common feature of the digital content generated by networked society is that a large number of users contribute to its creation, although this does not exclude the participation of companies and other types of entities. Because of the way these sites are generated in some cases there is either a very newly emerged industrial sector or none at all.

An analysis of this trend is fundamental for two reasons: on the one hand some of these are the mostly widely visited Internet sites in the world, and on the other the number of sites is rapidly increasing, heralding in many cases the emergence of associated businesses and important industrial sectors.

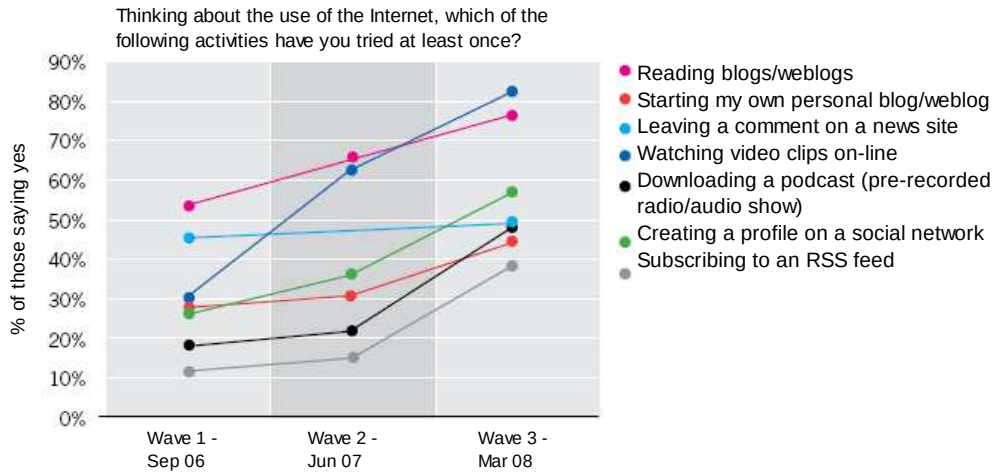
In two years the number of users who manage their profile on a social network has practically doubled, reaching almost 60% of active Internet users in 2008.

As shown by the study "Power to the people – Social Media Tracker Wave 3"[10] by Universal McCann, the variety and number of followers of activities based on the exchange of their own digital content, has accelerated rather than slowing down over the last year. Activities such as reading blogs or weblogs were carried out on some occasion by more than 50% of active Internet users[11] in 2006, a figure which rose to 70% in 2008; the percentage of those creating and managing a profile on a social network practically doubled in two years, reaching almost 60% of users in March 2008.

[10] "Power to the people – Social Media Tracker Wave 3" surveyed 17,000 active Internet users from 29 countries, in March 2008.

[11] The study "Power to the people – Social Media Tracker Wave 3" defines active users as those who access the Internet daily or every two days.

Figure 15. Evolution of active Internet users who have carried out the following activities at some time (%)

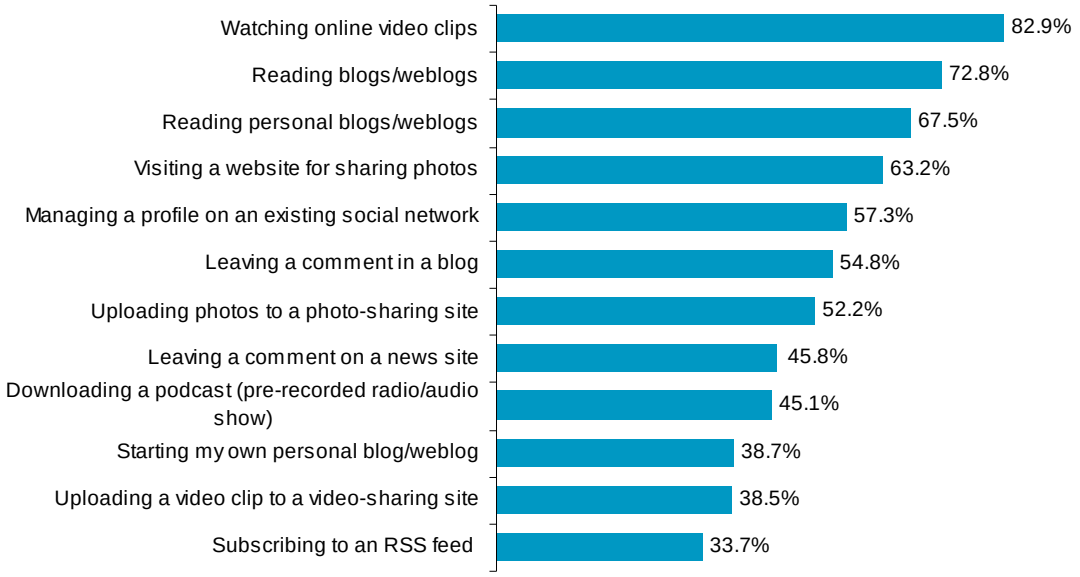


Base: Active Internet Users (accessing the Internet daily or every two days)

Source: "Power to the people – Social Media Tracker Wave 3", Universal McCann 2008

A detailed analysis of the type of activity carried out reveals that more than 80% of active Internet users have consumed at least one type of digital content at some time, such as having watched a video online (in first place with 83% of users), or read blogs (73%) or visited photo-sharing websites (63%).

Figure 16. Active Internet users who have carried out the following activities at some time



Base: Active Internet Users (accessing the Internet daily or every two days)

Source: "Power to the people – Social Media Tracker Wave 3", Universal McCann 2008

Proprietary digital content-generating activities are carried out to a lesser extent, but also recorded high percentages of around 50%-60% in the case of personal profile management in social networks, posting comments in blogs and uploading photos for sharing with other users.

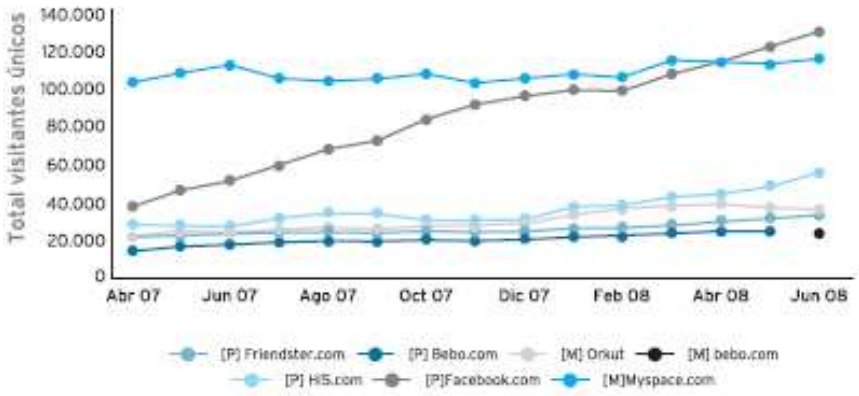
The broad spectrum of collaborative digital content can be basically grouped into network repositories, social networks, collaborative webs (wikis), blogs (blogs, moblogs, photoblogs), repositories for notes and monographs, in addition to geographical and cartographic content.

In light of this wide range of content, we will only analyse social networks due to the phenomenon they represent and the rapid growth among the number of followers worldwide. A social network is a community of users who establish personal or professional relationships and who share knowledge and experiences. They are normally housed on open websites that are constantly under construction and which involve a group of people with common needs and interests coming together to exchange and strengthen their resources.

Social networks have rapidly expanded throughout the Internet, for example, Facebook claims to have more than 175 million users registered in the world in February 2009, and are the most outstanding representatives of the so-called Web 2.0, the philosophy that is grounded on collaboration and shared knowledge management.

A broad spectrum of social networks emerges within the context of Web 2.0, which includes a set of social software applications, based both on the content generated from the collaboration between their members and on interpersonal relationship management (known as "networking"). Leading examples of personal social networks that seek to extend ties of friendship between its members are MySpace, Facebook and, in Spain, Tuenti.

Figure 17. Evolution of unique visitors to social networks



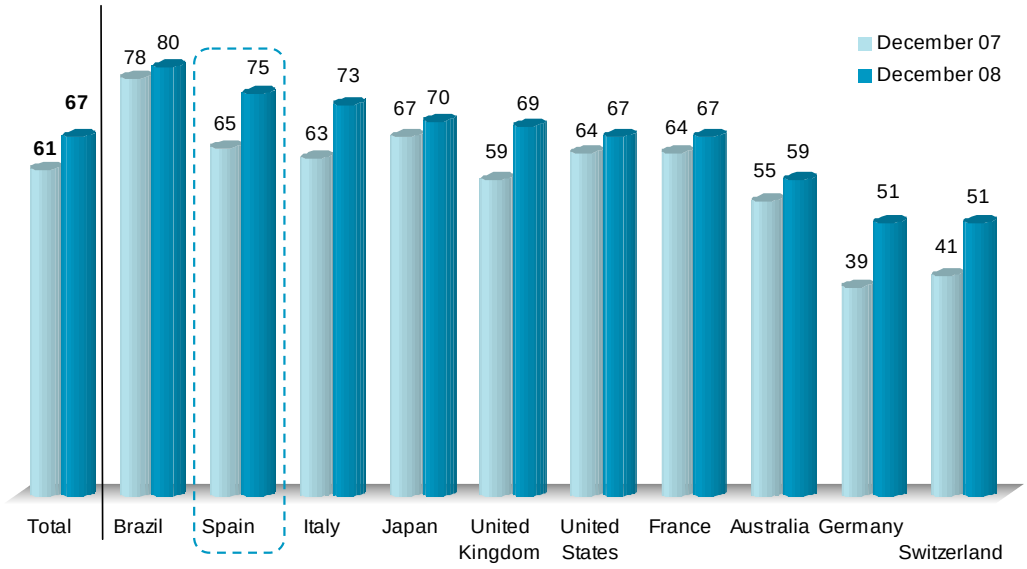
Source: **"White paper on digital content in Spain 2008" prepared by the ONTSI (Spanish Observatory for Telecommunications and the Information Society) and including data from ComScore**

The previous figure shows the evolution of the audience of the main personal social networks in the world, highlighting the growth of Facebook, which in little over a year

(from April 2007 to June 2008) has grown from around 40 million unique visitors[12] to over 120 million (data from ComScore).

According to the figures to March 2009 from the consultancy firm Nielsen, Spain is the leading country in Europe and second in the world after Brazil in terms of the percentage of its internet users that participate in social networks.

Figure 18. Percentage of social network visitors by country



Base: Internet users *Source: Nielsen March 2009*

General situation of the digital content market

Digital content-generating industries have shown a positive evolution at global level and, according to sales data of the sectors under analysis we can observe, although with very diverse behaviour among the different sectors, an average annual growth rate of 4.5% between 2003 and 2007 (according to data from PricewaterhouseCoopers – Global Entertainment & Media Outlook 2008-2012).

As shown in the table corresponding to videogames, this sector had the highest compound annual growth rate during the period 2003-2007 at 15.4%. Second was the audiovisual sector (+6.8% annually), while the publishing, film and video, and music sectors remained under 3%.

[12] Unique visitors: number of people who visit a website.

Figure 19. Content-generating industries in the world: sales evolution (million Dollars)

	Sales 2003 ($M)	Sales 2004 ($M)	Sales 2005 ($M)	Sales 2006 ($M)	Sales 2007 ($M)	CAGR 03-07 %
Music	36,228	36,526	35,765	34,861	33,437	-2.0%
Film/video	78,351	83,954	81,661	83,781	85,904	2.3%
Video games	23,667	26,869	28,395	32,954	41,948	15.4%
Publications[1]	340,612	351,206	364,397	370,581	379,314	2.7%
Audio-visual[2]	294,873	321,387	340,110	363,173	383,150	6.8%
Total	773,371	819,942	850,328	885,350	923,753	4.5%

[1] Includes press, books and magazines
[2] Includes television (including advertising) and radio

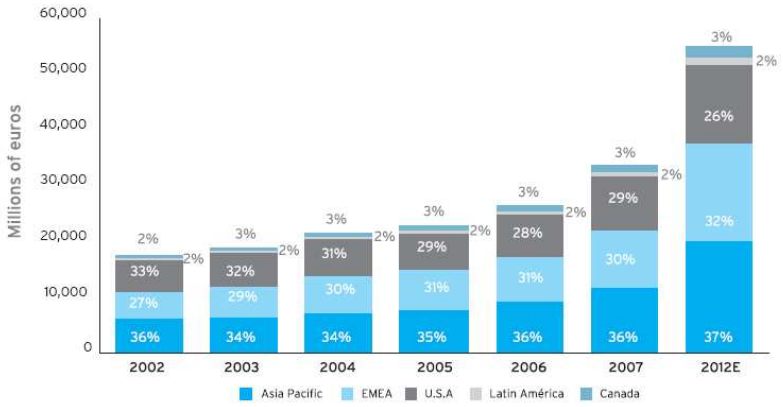
Source: "White Paper on Digital Content in Spain 2008", by the ONTSI (Spanish Observatory for Telecommunications and the Information Society), which includes data from "Global Entertainment & Media Outlook 2008-2012" by PricewaterhouseCoopers

Videogames sector

The videogames market is characterised by a strong growth phase

The world and European video games markets are both immersed in a phase of strong growth. During the period 2002-2007, the European and worldwide growth rates were 15% and 14%, respectively. This trend is expected to align Europe with world growth during the 2006-2012 period, which is expected to reach 13%.
As a consequence of the market launch in 2006 of next-generation consoles, in 2007 software and hardware sales recorded considerable growth throughout Europe.
The following figure shows world videogames market sales broken down by geographical zone. The Asian market was the most important, followed by EMEA (Europe, Middle East and Africa) and the United States. In the 2002-2007 period, the sector recorded average growth in excess of 16%, although the gradual slowdown expected in the next few years will maintain this growth at values of over 13% for the 2006-2012 period.

Figure 20. Videogames market sales broken down by geographic zone: evolution of sales



Source: "White Paper on Digital Content in Spain 2008", by the ONTSI (Spanish Observatory for Telecommunications and the Information Society), which includes data from "Global Entertainment & Media Outlook 2008-2012" by PricewaterhouseCoopers

Music sector

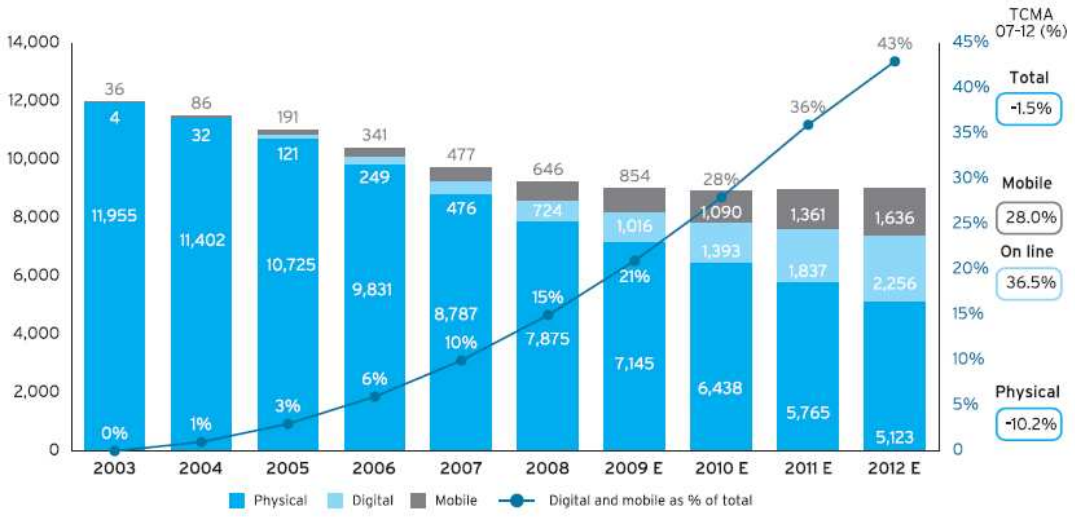
The sector presented below is limited to music distributed in physical copy, digital distribution services and music via mobile telephone; revenues from concerts are not included in sales, neither are hardware sales nor secondary earnings such as those derived from inserting music in advertising campaigns.

A few years ago, the music sector began its transformation on the back of new distribution channels, producing an annual drop in global music market value of 2% (TCMA 2003-2007), mainly driven by the decrease in traditional market sales. Although in 2001 almost all music was distributed via physical channels, the new distribution channels, such as mobile telephones or online payment channels, are expected to mitigate the drop in revenue in the short and medium term.

The effective monetisation of increasing consumption through new distribution channels could become one of the mainstays of the music industry, although traditional formats will continue the be important. According to forecasts made by PricewaterhouseCoopers, in terms of the music market in Europe, Middle East and Africa (EMEA) for the period 2007-2011, physical media will continue to lose relevance and are expected to drop 10% per annum during this period, while new mobile and digital channels will acquire greater importance and are expected to grow by 29.9% and 40.2% respectively until 2011.

The new music distribution channels, such as mobile telephones or online payment channels, are expected to record significant growth

Figure 21. Evolution of the EMEA music market (million Euros)



Source: "White Paper on Digital Content in Spain 2008", by the ONTSI (Spanish Observatory for Telecommunications and the Information Society), which includes data from "Global Entertainment & Media Outlook 2008-2012" by PricewaterhouseCoopers

Audiovisual sector

Within the audiovisual sector, the television (commercial and pay) and radio markets are analysed both in their analogue forms and new digital formats.

World audiovisual market volume stood at €383.150 billion in 2007, representing an average annual growth rate of 6.8% for the 2003-2007 period. The fragmentation of audiences and the loss of advertising effectiveness could affect the sector in the medium term, which must progressively adapt to a different scenario compared to the current one.

The new channels, such as TV by mobile telephony, interactive DTT services and TV over ADSL represent a great opportunity for the different audiovisual sector agents

New channels, such as TV by mobile telephony, interactive DTT services and television over ADSL represent a great opportunity for the various sector agents.

With respect to radio, we should highlight the strength of the traditional analogue model that continues to dominate at present, although the drop in audience ratings and the upsurge of new ways of radio content consumption, such as the Internet, anticipate the inevitable evolution towards digital radio.

Publishing sector

Owing to differences between the markets, the publishing sector has been divided into three subsectors: newspapers, magazines and books.

With respect to the digital side of the publications market, the online newspapers sub-sector is the most developed and records significant growth in both revenue and readership, with advertising as the sole source of income. However, online advertising still represents a very low percentage of the sector total.

Sales data for the daily press sector in EMEA (Europe, Middle East and Africa) reveal almost 3% growth between 2003 and 2007, reaching €57.611 billion in revenues in 2007 (data from PricewaterhouseCoopers). The growing importance of advertising as the main source of revenue can also be observed, which already represented around 57% of revenues in 2007, to the detriment of circulation revenues (43% in 2007), recording hardly any growth between 2003 and 2007 (CAGR of 1%) and steadily losing relative importance in total revenues. The incipient importance of online advertising is also notable which, while representing an insignificant amount (2% of total revenue in 2007), is expected to exceed 4% of revenues in 2011, according to forecasts by PricewaterhouseCoopers.

With regards to the magazine subsector, the online model is still underdeveloped, as it has been used as a platform for promoting printed editions in the last few years. Nevertheless, given the potential of online publishing, it is becoming considered not only as a complement to offline media, but as a business in itself within the sector.

The traditional book market in EMEA has reached maturity, growing at an average annual growth rate of 2.9% in the last five years. The outlook for the book business, according to studies carried out by PricewaterhouseCoopers, is for sustained average annual growth of 2.4%, reaching €43.362 billion in 2011.

However, a detailed analysis of the electronic book market in EMEA shows a completely different outlook. The electronic book business, practically non-existent in 2007, representing only 0.2% of total business, is in its launch stage (showing strong growth between 2007 and 2008, although based on very low figures). A glance at the future of the electronic book market, with the help of PricewaterhouseCoopers, gives an estimated growth rate for 2007-2011 of 179%, reaching 1.4% (€605 million) of the total book market by 2011.

Advertising sector

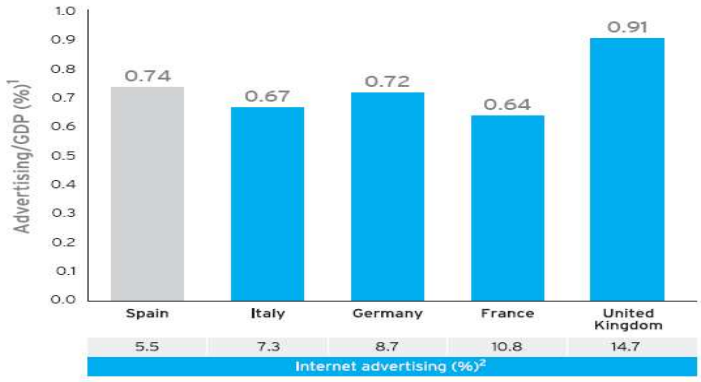
This analysis includes advertising on television, radio and film, advertising in newspapers, magazines and supplements, external advertising (including billboards, booths, street furniture, etc.) and advertising on the Internet and all types of new interactive media and other digital devices.

The penetration of new digital media in advertising investment has increased substantially in recent years.

The proliferation of new communications media and the change in habits among the population will progressively reduce the influence of the media on advertising activity

With the development of new technologies, the proliferation of communications media and the change in habits of the population, advertising is becoming increasingly complicated. The Internet is playing an important role in this evolution and the population is progressively reducing its leisure time dedicated to traditional media such as television, mainly in favour of the Internet. This will gradually change the influence of media on advertising activities. For the advertising market, the Internet is regarded as an economical medium with good prospects with regard to use.

Figure 22. Advertising in conventional media in relation to GDP and the importance of the Internet as an advertising medium in relation to total investment



[1] Data for 2006 (Infoadex 2008)
[2] In relation to total traditional advertising 1H 2007

Source: "White Paper on digital content in Spain 2008" (Libro blanco de contenidos digitales en España 2008), published by the ONTSI (Spanish Observatory for Telecommunications and the Information Society) and including data from the "Global Entertainment & Media Outlook 2008-2012" report by PricewaterhouseCoopers, European Commission, Infoadex 2008 and IAB 2008

Among the five major European countries, Spain is the second largest market in terms of the importance of advertising in traditional media in 2006 in relation to GDP, standing at 0.74%, behind the United Kingdom (0.91%) and ahead of Germany (0.72%), Italy (0.67%) or France (0.64%). However, Spain lags behind in the use of the Internet as an advertising medium. According to data from the Interactive Advertising Bureau for 1H 2007, Spain, with a 5.5% investment in Internet advertising with respect to total traditional advertising (6% at the end of 2007, according to Infoadex), is behind the United Kingdom (14.7%), France (10.8%), Germany (8.7%) or Italy (7.3%). Nevertheless, the significant growth in online advertising investment between 2005 and 2007 (from 2% to 6% of total advertising in traditional media) has significantly reduced the differences with the reference countries in Europe, pointing to good growth prospects for advertising in this medium in the future.

Worldwide forecasts made by PricewaterhouseCoopers indicate an annual growth rate of 19.5% for Internet advertising, reaching $120.4 billion (period 2008-2012). The region with the greatest investment will be EMEA, with $46.2 billion by 2012, and the region with the greatest growth will be Latin America, with a 26.2% annual growth rate, which will nevertheless continue to be the region with the least importance in this market.

Film industry

This includes box office revenue in addition to video rental and sales (VHS, DVD or other new formats such as UMD, Blu-Ray or HDDVD).

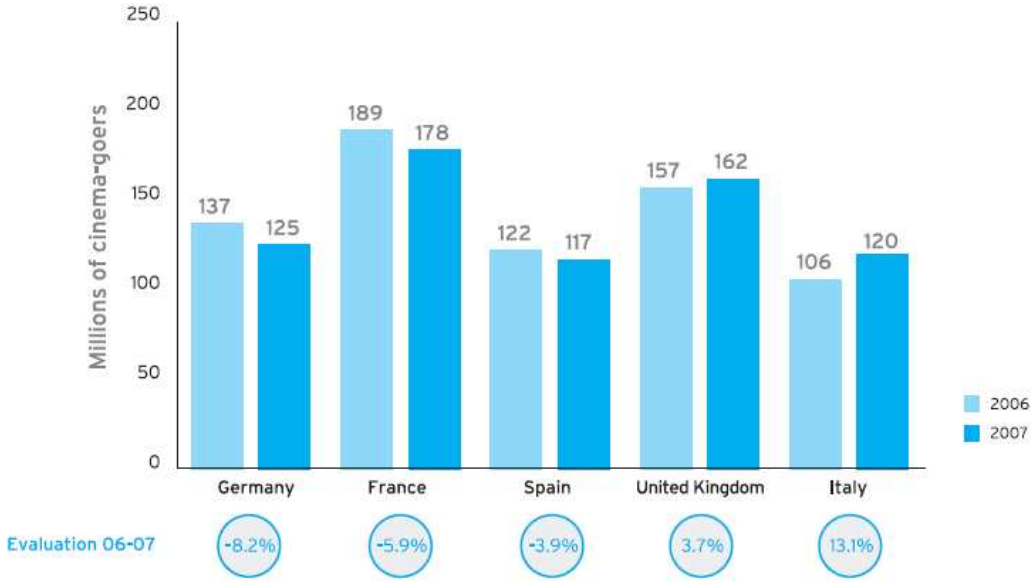
The evolution of this market is characterised on one hand by the slight stagnation in box office revenues and, on the other, by the drop in the movie sales and rental market.

While the main source of revenues is still the box office, the number of cinema goers fell by 1.3% between 2006 and 2007 in Europe, and some reference countries such as France or Germany suffered a decline of 5.9% and 8.2% respectively (data from the FAPAE[13]). Only in a few European countries, including the UK and Italy, has the total number of cinema goers increased.

Technological progress and changes in lifestyle in which Internet-based business models are increasingly predominant point to traditional business models being replaced in the future, at least in part. An example of the boom in emerging consumer models is the evolution of revenue from Video-On-Demand and Pay-Per-View in Spain,

[13] Federation of Associations of Spanish Audiovisual Producers (FAPAE; Federación de Asociaciones de Productores Audiovisuales Españoles)

Figure 23. Comparison of cinema attendance in reference countries



Source: "White Paper on digital content in Spain 2008" (Libro blanco de contenidos digitales en España 2008), published by the ONTSI (Spanish Observatory for Telecommunications and the Information Society), and including data from the FAPAE

With regard to online movie rental and sales, the outlook for this market anticipates sharp growth. According to PWC estimates (PriceWaterhouseCoopers, Global Entertainment and Media Outlook 2008-2012), online movie rental and sales in EMEA (Europe, Middle East and Africa) will reach approximately $2.2 billion in 2011, representing growth of nearly 43% between 2007 and 2011.

The Networked Society 2008
Annual report

5. The Information Society in Europe

5. THE INFORMATION SOCIETY IN EUROPE

5.1. i2010: The Information Society and audiovisual media on the road to employment creation

The review of the Lisbon strategy has given rise to i2010, the European Commission's new strategic plan within the framework of Information Society and audiovisual media policies. The aim of this new strategy is to drive knowledge and innovation in order to achieve greater economic growth, in addition to creating more and higher-quality employment.

Generally speaking, the objective is to coordinate a series of actions that must be taken by Member States in order to facilitate digital convergence and to tackle the challenges associated with Information Society. Specifically, the strategic objective defined in March 2000 at the Extraordinary Meeting of the European Council in Lisbon was put forward in a clear and ambitious manner: "Convert the European Union into the most competitive and dynamic knowledge-based economy in the world by 2010, capable of sustained economic growth with more and better employment and greater social cohesion".

The European Commission proposes three priorities that must be achieved in 2010:

- Creation of a Single European Information Space to promote an open and competitive internal market
- Increased investment in innovation and research in Information and Communication Technologies (ICTs)
- Achieve an inclusive Information Society with enhanced public services, that will help to improve quality of life

Creation of a Single European Space

This first objective or priority specifically refers to the possibility of offering accessible and secure broadband communications, in addition to richer services and digital content in all European Union countries. The main challenges are:

- Greater broadband service speed in Europe
- Create new services and digital content
- Enhance intercommunication between devices
- Achieve greater Internet security

Likewise, in order to achieve this Single European Space, the Commission aims to:

- Review the current spectrum distribution structure to achieve greater efficiency
- Create a consistent and adequate market environment in which to develop the Information Society and audiovisual media
- Continue to support the creation and dissemination of European content

- Define and implement a strategy to achieve a secure European Information Society by creating greater awareness of the need for self-protection, supervision of threats and a rapid and effective response to attacks

ICT innovation and investment

The increase in ICT investment and innovation must be achieved through the following:

- Increase ICT research support by nearly 80% by 2010, inviting all Member States to do the same
- Prioritisation of the key technology elements of the Seventh Framework Programme
- Launching research and development initiatives to overcome interoperability or security and trust problems
- Definition of complementary measures to stimulate private investment in ICT research and innovation
- Definition of e-Business policies aimed at eliminating technology barriers
- Development of support tools for new working patterns that will drive innovation in companies and adaptation to new training needs

Inclusion, enhanced public services and quality of life

The Commission seeks to promote and stimulate economic, social and territorial cohesion by establishing an inclusive European Information Society aimed at promoting sustainable economic growth through better employment and enhanced public services and quality of life. Some of the key points to be taken into account on the road to achieving an inclusive Information Society are:

- Recommendation policies for e-Accessibility and broadband coverage that will make ICT systems easier to use by a large number of people
- Proposal for a European e-Inclusion initiative to tackle issues such as equal opportunities, ICT qualifications or skills and regional differences
- Adoption of an e-Government action plan, in addition to strategic guidelines to stimulate the use of public services such as ICTs
- Establishment of three ICT initiatives that will represent quality of life, such as clean and secure transport (intelligent cars), creation of digital libraries or care for the elderly in an ageing society

5.2. Diagnosis and analysis of the European framework for ICTs and the Information Society

The following section includes detailed statistical information on the current situation of ICTs in the European Union. Although on previous occasions the data was structured in accordance with the main sections defined in the e-Europe 2005 action

plan, in this report the information is articulated around the principal new blocks defined in the i2010 plan:

- Broadband development
- Advanced services
- Adoption of ICTs by companies
- Inclusion
- Public services: e-Government

Broadband development

In the past, one of the main indicators used to measure penetration of ICTs not only in Europe but also worldwide, was the percentage of households and companies with Internet access.

At present, given that these indicators have reached important degrees of maturity, they must be complemented with relevant indicators such as the percentage of households or companies that connect to the Internet via broadband, thereby enjoying faster and higher-quality connections.

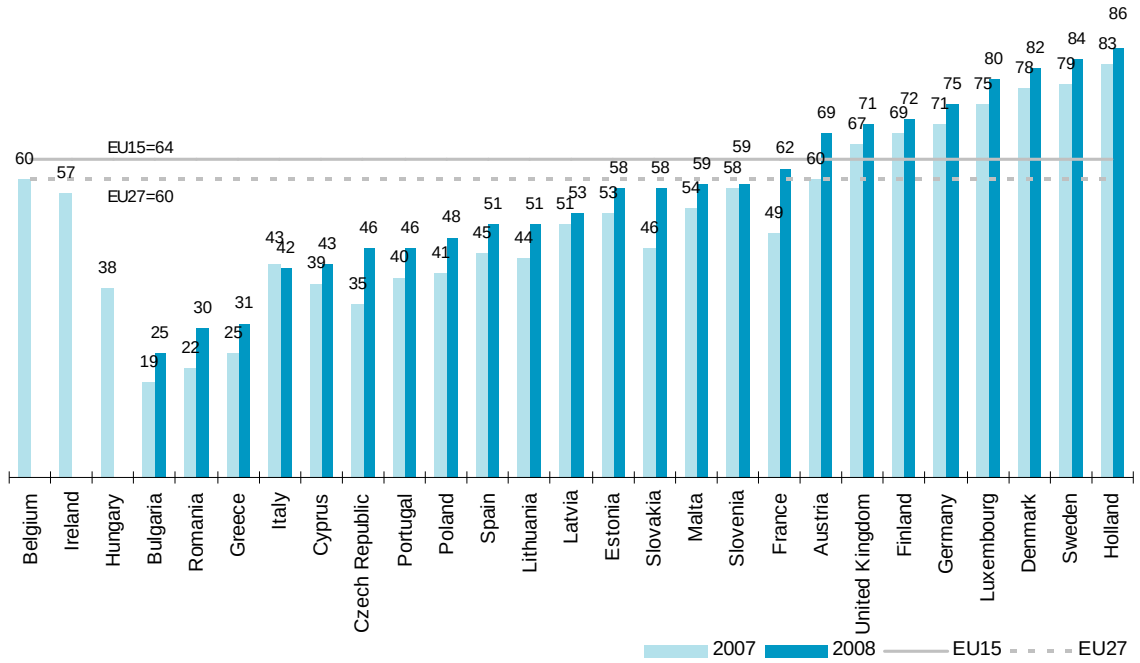
Households

A total of 60% of EU27 households had Internet access in 2008

The percentage of households connected to the Internet in the EU-27 reached 60%, four percentage points less than in the case of the EU-15. Holland, Sweden and Denmark head the list, in that order, in the ranking of countries against this indicator, with percentages exceeding 80% in all three cases. Romania and Bulgaria are in last place with values of 30% and below.

The rate of expansion was significant in France, Slovakia and the Czech Republic, reaching double digit figures in the three cases (13, 12 and 11 percentage points more, respectively). Spain has shown important growth of 6 pp.

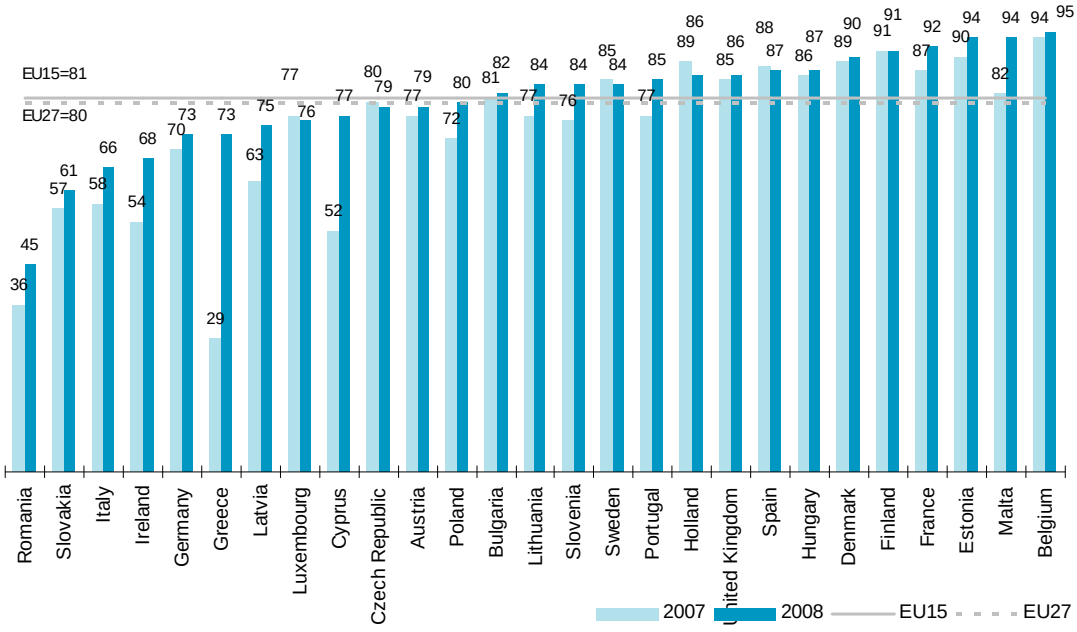
Figure 24. Households connected to the Internet in the European Union (%)



Base: Total households

Source: Eurostat

Figure 25. Households connected to the Internet via broadband in the European Union (%)



Base: Total households connected to the Internet

Source: Eurostat

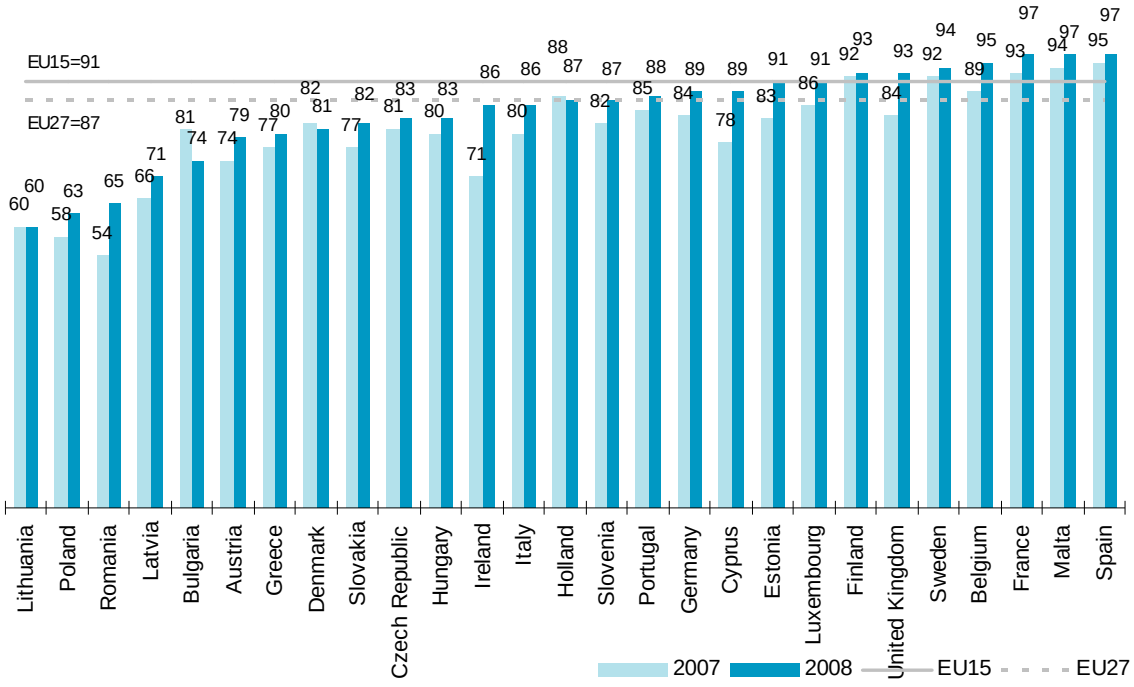
The excellent development of broadband in Europe is evident in the high percentage of households with Internet access that connect using this technology. In this case, the difference between the EU15 and EU27 is minor (81% compared to 80%, respectively). Belgium (95%), Malta (94%) and Estonia (94%) achieved the highest percentages, although France, Finland and Denmark also occupied outstanding positions with percentages of 90% and over. Spain occupies eighth position, forming part of the block of countries that are above Community averages.

Companies

Spain leads the EU27 ranking of companies that connected to the Internet via broadband, with 97%

In the business sector, Spain forms part of the leading group of countries in terms of the percentage of companies with a broadband Internet connection. Spain, Malta and France occupied first place in the ranking with 97% in the three cases. Lithuania, Poland and Romania, recently incorporated countries, were relegated to last , with values of less than 70%. In 2008, there was a general increase in the percentage of companies that make Internet connections via broadband compared to 2007. The most significant increases, which also reached double digit figures, corresponded to Ireland (an additional 15 pp in 2008), Cyprus and Romania (11 pp in both cases).

Figure 26. Companies connected to the Internet via broadband in the European Union (%)



Base: Total companies with Internet

Source: Eurostat

Advanced Services

Other indicators that reflect the growing trend of the Internet is the percentage of individuals who use it on a regular basis, defining "regularly" as at least once a week.

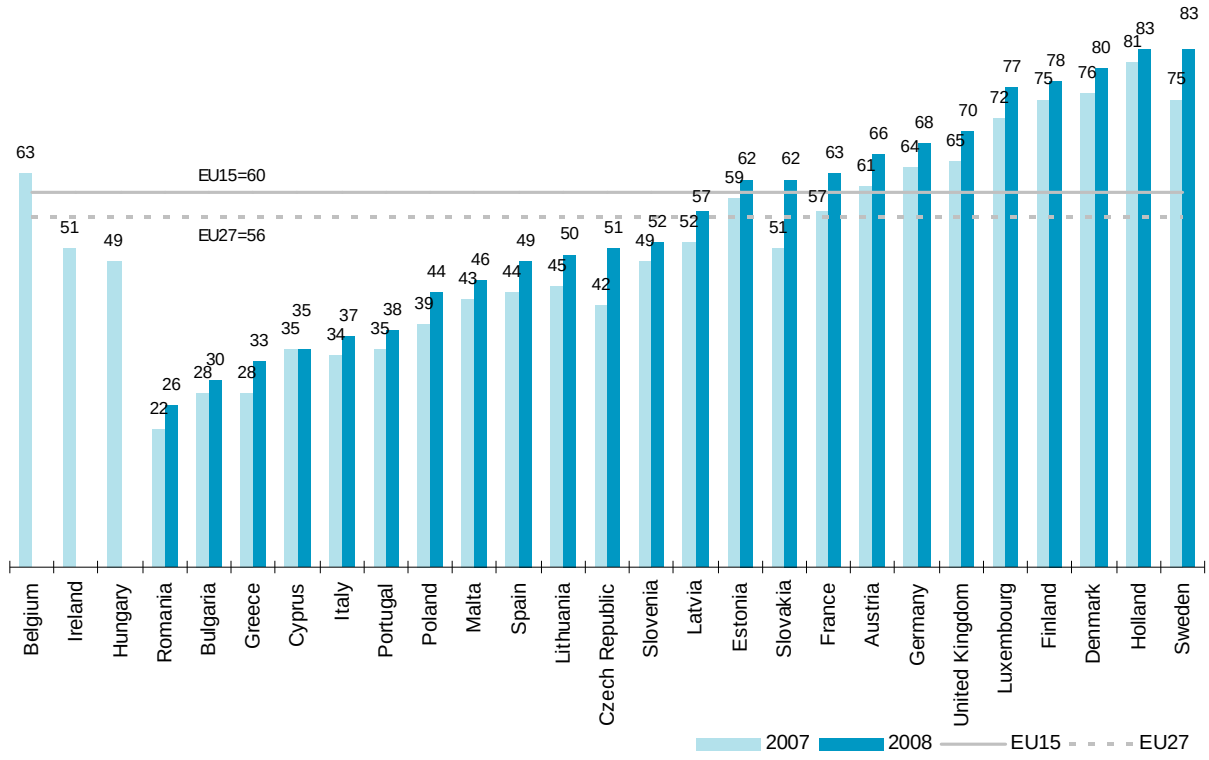
The growing awareness among European Internet users of the advantages associated with using the web in their daily activities leads to a more frequent and sophisticated use of the Internet.

As in 2007, Sweden, Holland and Denmark led the EU27 ranking with more than 80% of the population, surpassing the average Community value by more than 20 pp.

Romania, Bulgaria and Greece occupied the lowest positions throughout 2008. There has been a general upward trend among Member States compared to the previous year.

The percentage of individuals who used the Internet on a regular basis increased throughout the EU27 in 2008

Figure 27. Individuals who used the Internet on a regular basis (at least once a week) (%)



Base: Total population

Source: Eurostat

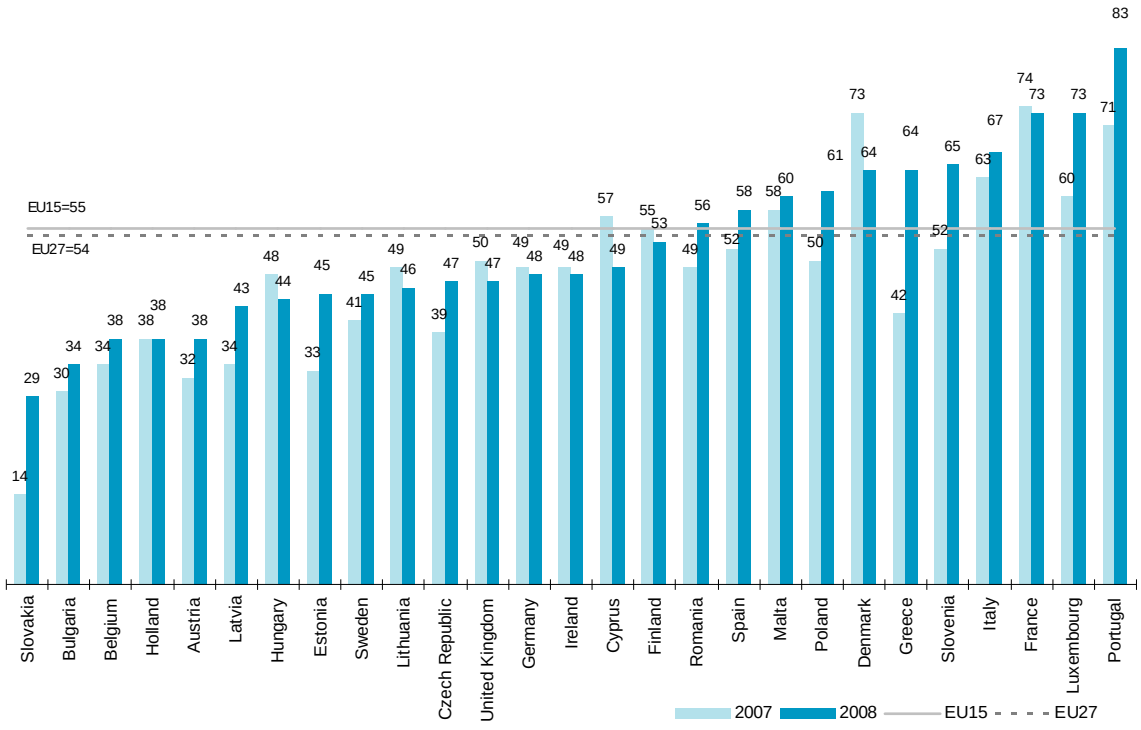
Within the block of advanced service indicators, it is worth highlighting the set of specific Internet uses made by users in the last three months.

Although according to the i2010 plan, this block of advanced service indicators includes a total of 14, in this section only those with the greatest number of users are described, and they can therefore be considered as the most common among Internet users.

For example, the use of the Internet for training and educational purposes. Generally speaking, 54% of individuals who used the Internet in the last three months in EU27 countries did so for training or educational purposes.

Portugal occupied the leading position with 83%. Luxembourg and France are 10 pp behind (73%). In 2008, eleven countries exceeded the Community average for the 27 Member States. Slovakia was the country that recorded the lowest value in 2008 (29%), followed by Bulgaria (34%). Spain was above average, with growth of 6 pp.

Figure 28. Individuals who have used the Internet in the last three months for training and educational purposes (%)

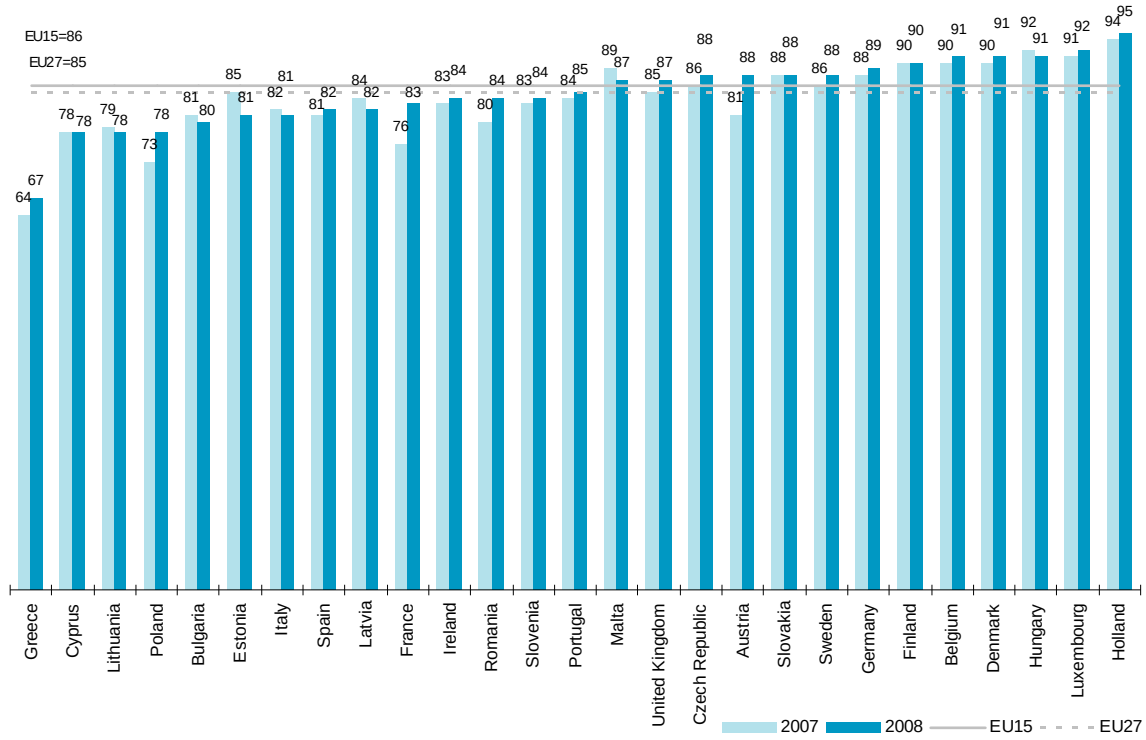


Base: Total individuals that have used the Internet in the last three months

Source: Eurostat

Sending and receiving electronic mail has become one of the main uses among the European Internet user population. In the last three months, 85% of Internet users in the EU27 used the Internet to send and receive electronic mail. This percentage increases slightly to 86% for the EU15 states.

Figure 29. Individuals who used the Internet in the last three months to send and receive electronic mail (%)



Base: Total individuals that have used the Internet in the last three months

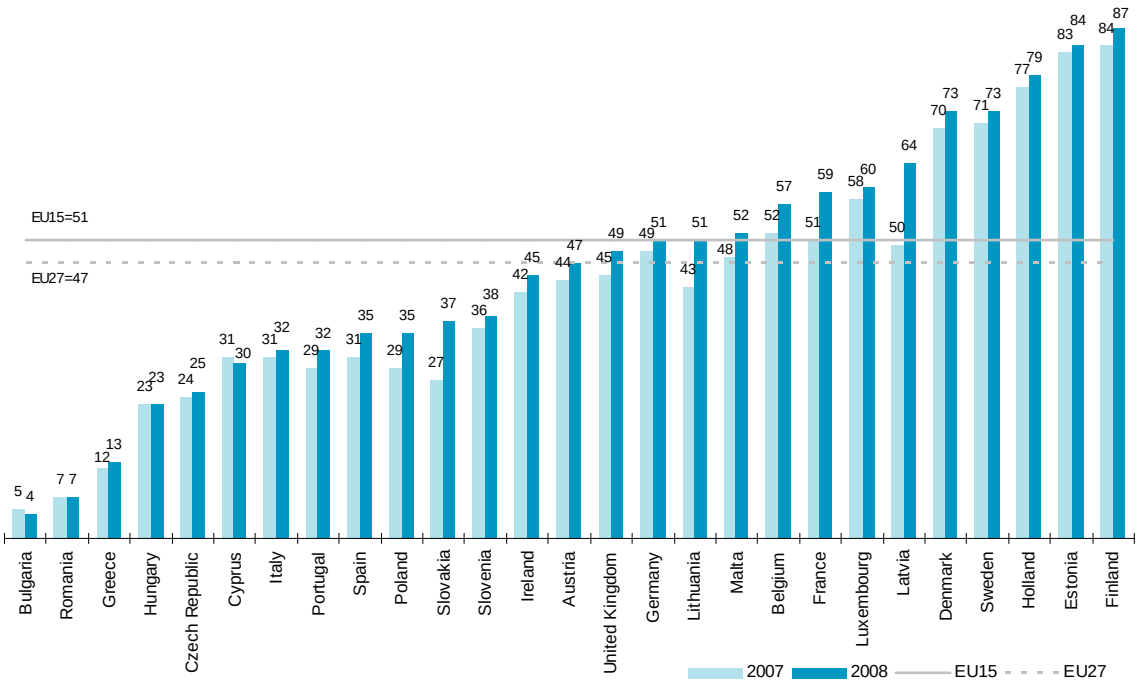
Source: Eurostat

Holland stands out as leader, with 95%. It was followed by Luxembourg, Hungary, Denmark and Belgium, which recorded values in excess of 90%. For its part, Greece was relegated to the lowest position, separated by 28 pp from the leader and 18 below the Community average of the EU27.

One of the uses that is directly associated with the growing maturity of Internet users is electronic banking. User confidence increased, driving the higher use of electronic channels for financial transactions. In this case, the average value of the EU27 stood at 47%, four points below the value for the EU15.

Finland (87%) and Estonia (84%) were the only countries that exceeded 80% of individuals who have used the Internet in the last three months to carry out banking operations. Holland (79%), Sweden (73%) and Denmark (73%) are in the 70%-80% range, at the bottom of the group of leading countries. At the other end of the scale, Bulgaria and Romania recorded 4% and 7%, respectively.

Figure 30. Individuals who have used the Internet in the last three months for electronic banking (%)



Base: Total individuals that have used the Internet in the last three months

Source: Eurostat

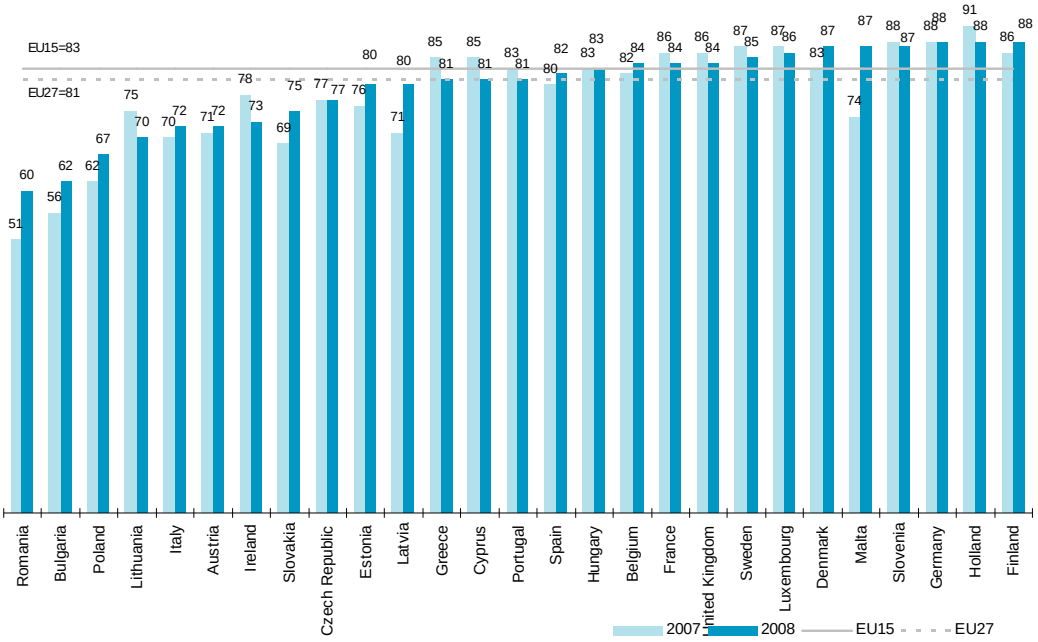
In the case of this specific indicator, significant differences were observed between countries, with high values in the leaders and very low percentages among the countries that occupy the lowest positions of the ranking. In fact, there is a difference of 83 pp between the highest and lowest.

A total of 81% of individuals of the EU27 who used the Internet in the last three months browsed for information on goods and services. The three countries that stood out with 88% are Finland, Holland and Germany. These were closely followed by a block comprised of Slovenia, Malta and Denmark (87%).

The lowest percentages were recorded by Romania, Bulgaria and Poland, with less than 70% each. Spain achieved a value slightly above average, recording growth of 2 pp compared to the previous year.

If we analyse the indicator data taking into account the growth achieved since last year, the case of Malta is notable, growing by 13 pp. This is the only country that recorded double digit growth. Other outstanding growth was recorded by Romania and Latvia (9 pp in both cases).

Figure 31. Individuals who used the Internet in the last three months to browse for information on goods and services (%)

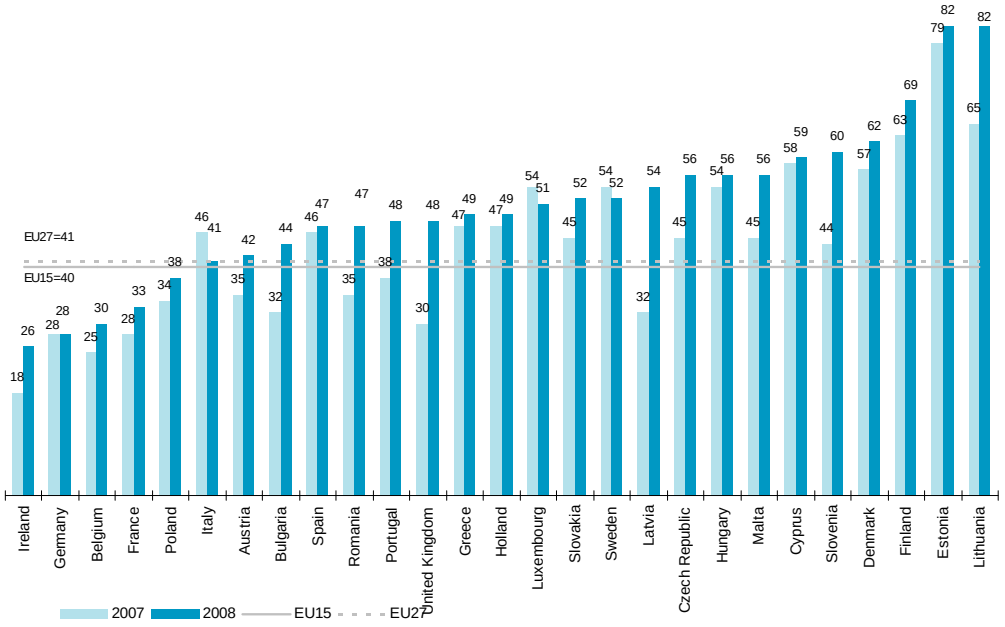


Base: Total individuals that have used the Internet in the last three months

Source: Eurostat

Another Internet use which can be categorised as one of the most common is reading/downloading newspapers or magazines.

Figure 32. Individuals who used the Internet in the last three months for reading/downloading newspapers or magazines (%)



Base: Total individuals that have used the Internet in the last three months

Source: Eurostat

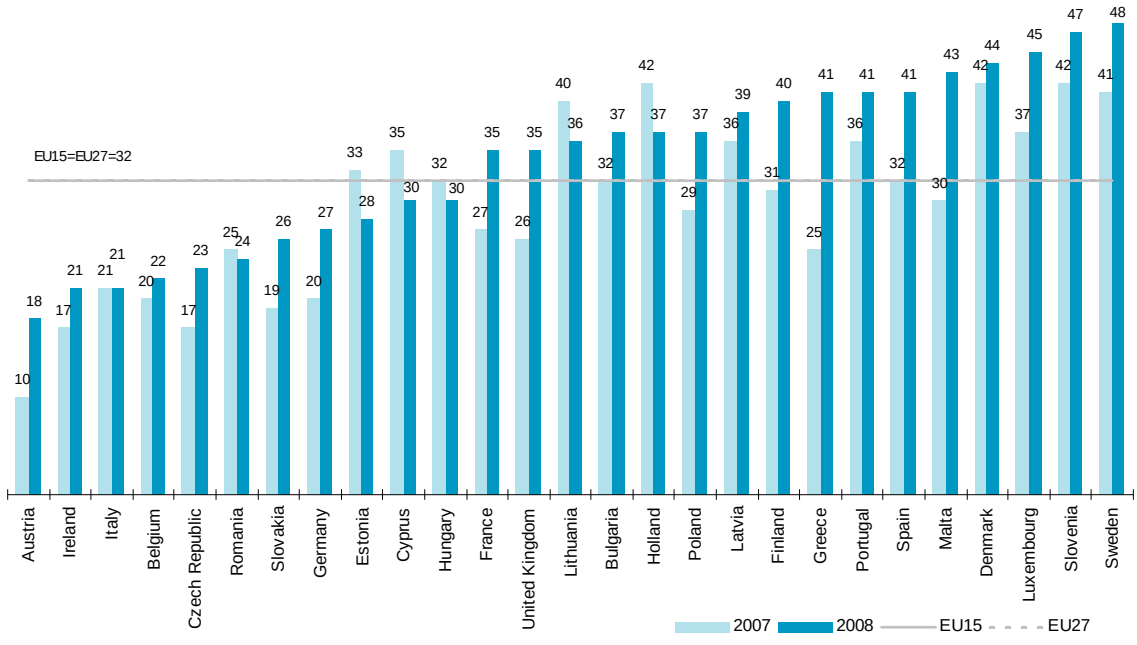
In the case of the EU27 group of countries, the percentage of individuals who used the Internet in the last three months reached 41%. Lithuania and Estonia stood out for being the only countries to achieve values of more than 80%.

A notable country was Latvia, which achieved 22 pp more in 2008 than in 2007. Other countries which recorded sharp growth and which are worth mentioning are the United Kingdom (an additional 18 pp), Lithuania (17) and Slovenia (16).

Only five countries of the 27 Member States remained below the Community average, highlighting the generalised use of the Internet among users. Ireland, with 26%, although growing 8 pp, and Germany, which has maintained a stable position since 2007 (28%), occupied the lowest positions within the group of countries below the overall average.

The last of the uses worth mentioning within advanced services is use of the Internet to listen to the radio or watch television. In this case, the EU27 average was similar to that of the EU15 (32%). Sweden and Slovenia led the ranking of European countries. Spain (41%) occupied a noteworthy sixth position among the group of 27, having grown 9 pp with respect to the value recorded in 2007.

Figure 33. Individuals who used the Internet in the last three months to listen to the radio or watch television (%)



Base: Total individuals that have used the Internet in the last three months

Source: Eurostat

In the case of Greece and Malta, these recorded the two most significant increases of the period, the former growing 16 points and the latter 13. These are the only two cases that achieved double digit growth. On the contrary, there were cases where these percentages dropped, for example in Holland, Cyprus or Estonia, with 5 pp less than the value corresponding to 2007.

Austria occupied the last position of the ranking being the only country to record a percentage of less than 20%, although we must point out that it grew 8 pp with respect to 2007.

ICTs in the business sector

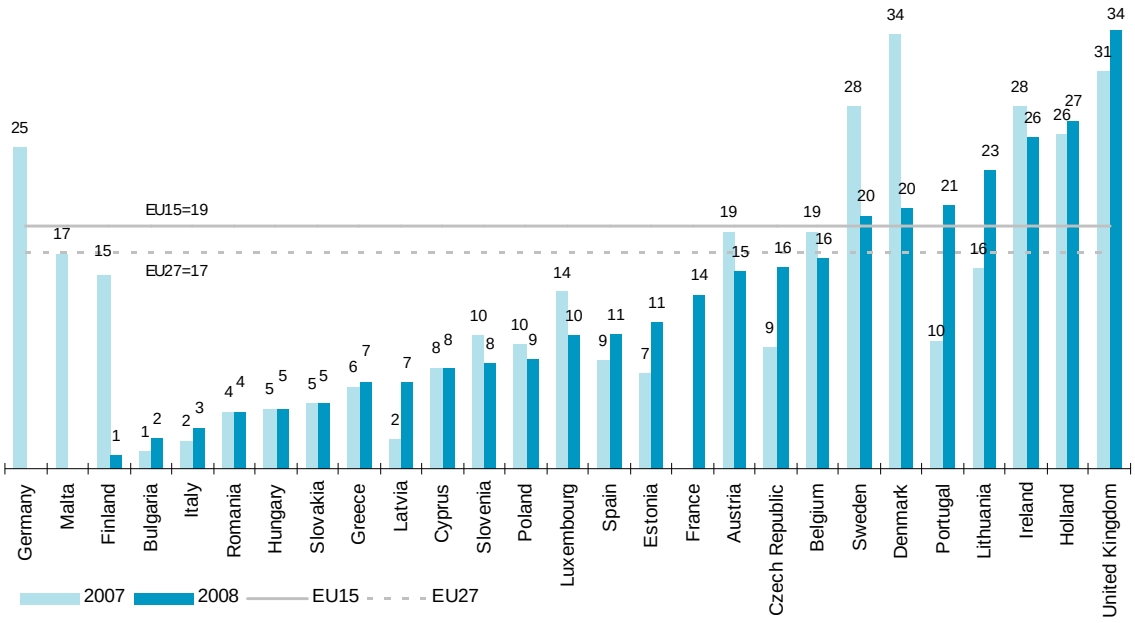
Uptake of ICTs by companies

In the section corresponding to broadband development we already noted that 87% of companies with an Internet connection in EU27 countries access via broadband, with values ranging from 60% in the case of Lithuania, the lowest, to 97% in the case of Malta and Spain, the highest.

Taking this initial ICT framework in companies into account, it is important to analyse another series of indicators that reflect not only the growing incorporation of ICTs in companies, but also the increasingly sophisticated use being made of these technologies.

The first of the indicators to take into account is for companies which received online purchase orders[14] throughout the previous year (accounting for at least 1% of total sales).

Figure 34. Companies that received online purchase orders throughout the previous year (at least 1%) (%)



Base: Total companies with Internet access

Source: Eurostat

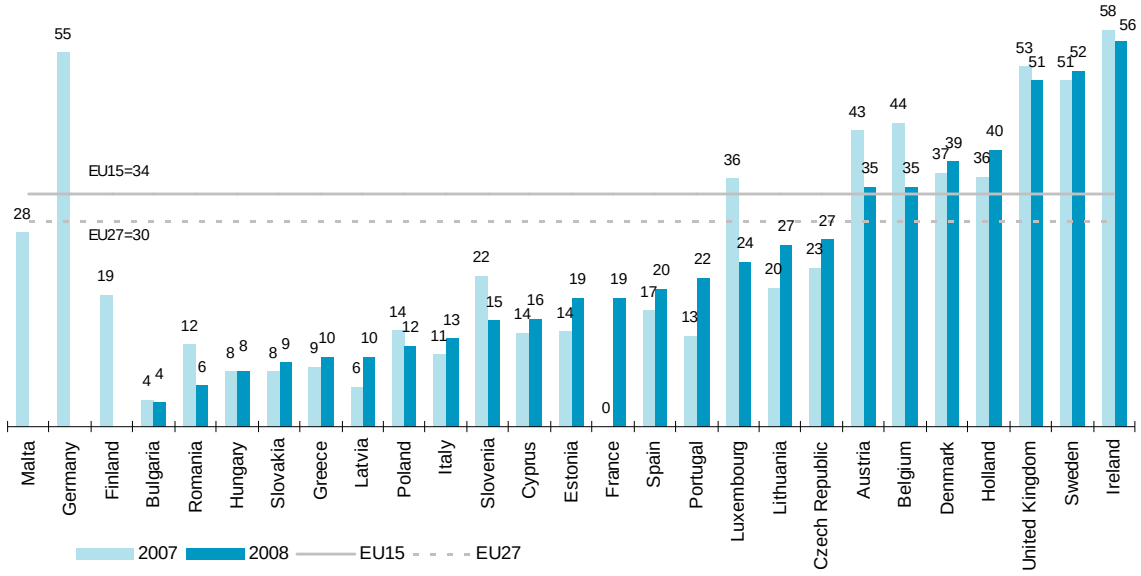
[14] Sent via the Internet or other telematic networks. Hand-written electronic mail is not included.

A total of 17% of all companies in the EU27 with 10 or more employees, except those belonging to the financial sector, received online orders in 2008, 1 pp higher than the value corresponding to 2007. The United Kingdom was the only country that exceeded 30%. It was followed by Holland and Ireland, with 27% and 26%, respectively.

We can observe that 11 countries recorded values less than 10%, of which Finland, Bulgaria and Italy held the lowest positions. The trend between 2007 and 2008 reveals that some countries recorded negative growth, most notably Denmark and Finland.

On the purchase side is the indicator that refers to the percentage of companies that purchased online in the last year. Overall, 30% of EU27 companies made online purchases[15] in 2008 (representing at least 1% of total purchases), a figure that does not reflect significant changes with respect to the previous year. Ireland occupied the leading position with 56% followed by Sweden with four points less (52%).

Figure 35. Companies which made online purchases in the last year (at least 1%) (%)



Base: Total companies with Internet access

Source: Eurostat

A total of seven countries exceeded the Community average, leaving behind the other twenty. Bulgaria and Romania occupied the two lowest positions in the European ranking, with 4% and 6%, respectively.

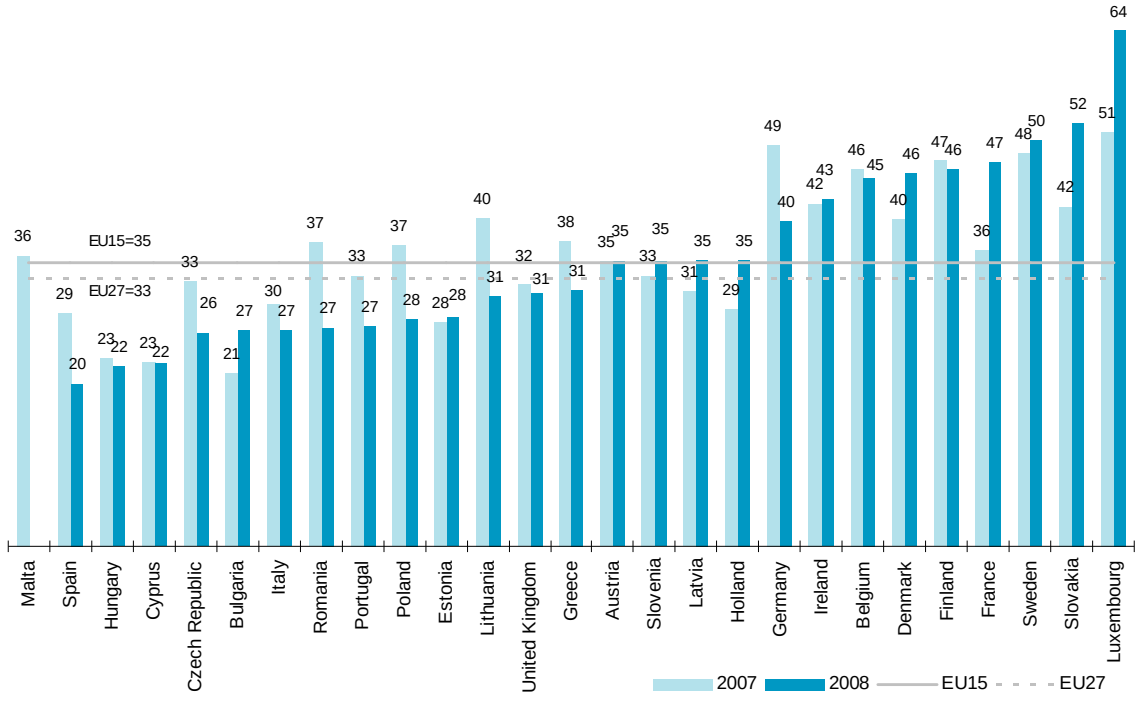
The performance of this indicator shows declines throughout the last year, as in the

[15] Sent via the Internet or other telematic networks. Hand-written electronic mail is not included.

previous year. A total of eight countries recorded lower percentages compared to 2007. The sharpest drop corresponded to Luxembourg which fell by 12 pp compared to 2007 and dropped to tenth position in the ranking with 24%. Other significant falls were Belgium or Austria, with 9 pp and 8 pp less, respectively.

Another interesting indicator when evaluating the outlook of ICTs in the European business sector is companies with a LAN computer network[16] and a web portal for internal use, whether intranet or extranet, in the reference year.

Figure 36. Companies which have used a LAN and intranet or extranet in the reference year (%)



Base: Total companies with Internet access

Source: Eurostat

Luxembourg is the country positioned at the top of the ranking, with 64%. The leadership of this country is outstanding, as it is separated by 12 pp from the next country, Slovakia (52%).

Spain, Hungary and Cyprus, with 20% and 22% for the latter two, are positioned at the lowest end of the ranking of the EU27.

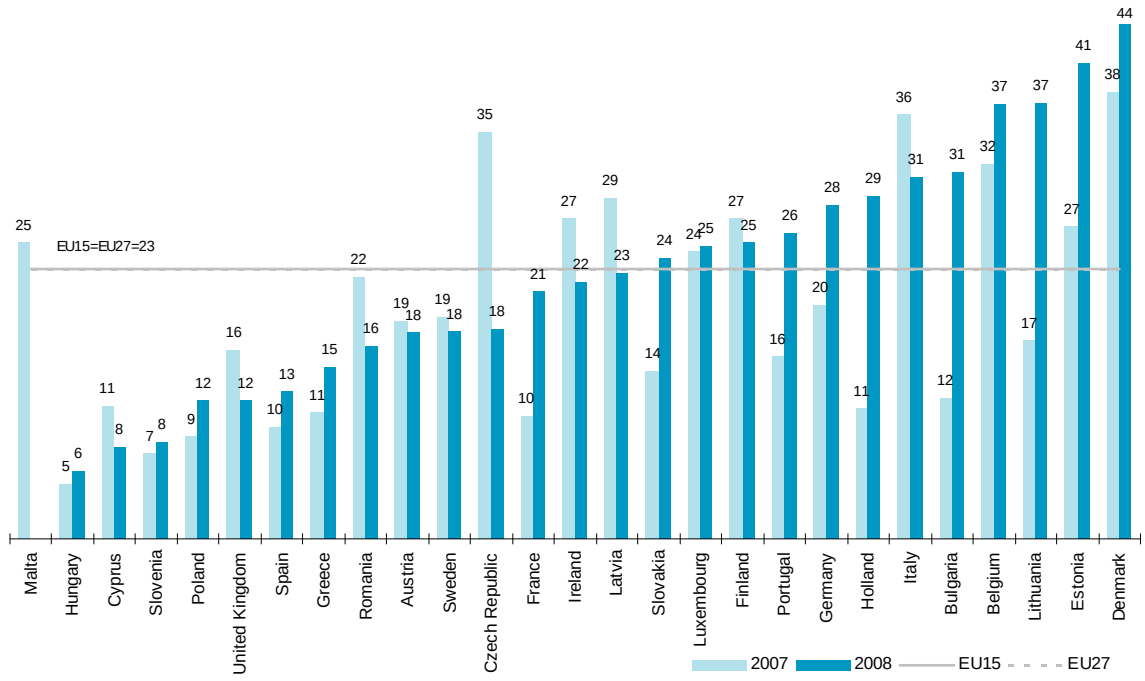
The general performance of this indicator over the last year reveals that the greatest reductions compared to 2007 occurred in those countries that recorded values below the Community average, while, also generally speaking, those positioned above average recorded the highest annual growth.

[16] LAN: Local Area Network

Electronic invoicing is gaining prominence in business activities in all European countries. It can be considered the functional equivalent of paper invoices and consists of transferring invoices or similar documents between issuers and recipients via electronic (computer files) and telematic media (from one computer to another), digitally signed with recognised certificates.

The Law on Measures to Stimulate the Information Society defines the electronic invoice as "an electronic document that fulfils the legal and regulatory requirements for invoices and which also guarantees the authenticity of its origin and integrity of its content, thereby preventing repudiation of the invoice by the issuer".

Figure 37. Companies that sent or received electronic invoices (%)



Base: Total companies with Internet access

Source: Eurostat

A total of 23% of companies in the EU27 sent or received electronic invoices, 4 pp more than in 2007. Denmark occupies the first place with 44% while Estonia, in second place with 41% is notable for having recorded higher growth.

Hungary, Cyprus and Slovenia, in that order, occupied the lowest positions in the EU, with no more than 10% of companies receiving or sending electronic invoices.

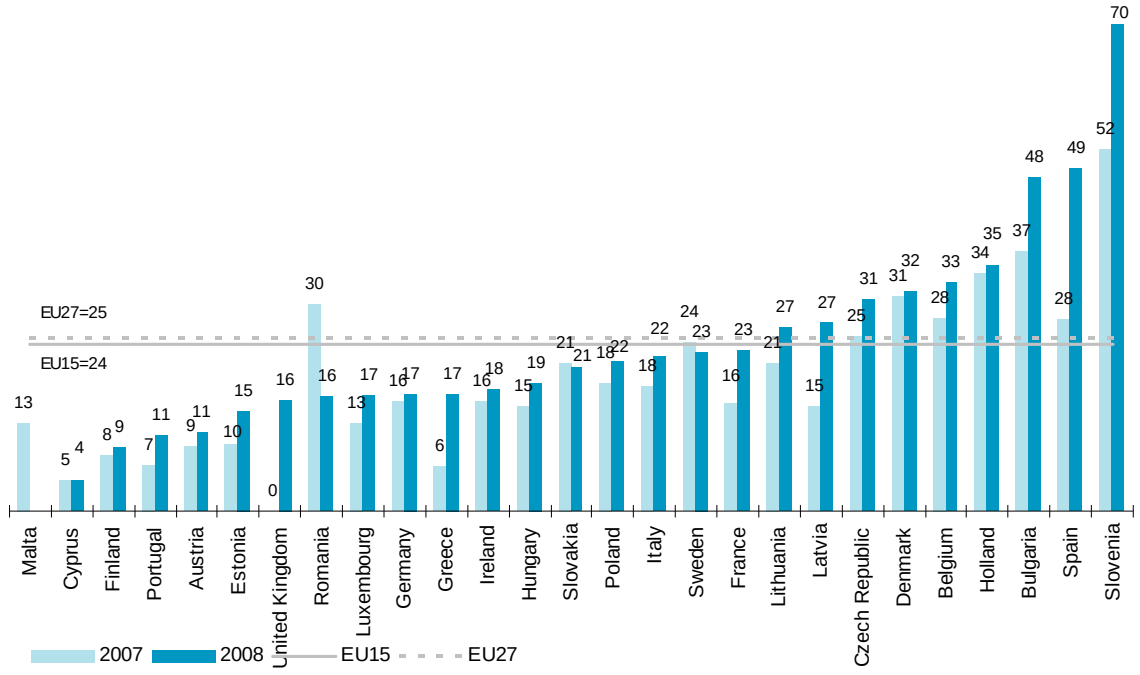
Double digit growth in European Union countries confirms the growing importance of electronic invoicing

Increases of up to 10% occurred in seven cases if we take these figures from the viewpoint of annual growth. For example, the maximum growth corresponded to Lithuania (+20 pp), followed by Bulgaria (19 pp) and

Holland (18 pp). This trend shows that electronic invoicing is becoming an increasingly common tool among European companies.

The electronic signature is a medium which securely guarantees the identity of the signatory and the integrity of the text or message received. This procedure allows different transactions to be carried out online, obtaining an immediate reply.

Figure 38. Companies that used electronic signature in their transactions with customers or suppliers (%)



Base: Total companies with Internet access

Source: Eurostat

In the EU27 and EU15 countries, the percentage of companies that use electronic signatures in their transactions with customers or suppliers reached 25% and 24%, respectively. The case of Slovenia stands out above the rest, not only for leading the ranking with 70%, but also because it recorded growth of 18 pp in relation to 2007.

Spain is also worth highlighting, firstly because it occupies second place with 49% and also because its growth exceeds that of Slovenia, 21 pp higher than in 2008.

At the opposite end of the ranking are countries such as Cyprus or Finland, where the percentage did not exceed 10%. These figures broaden the value range (66 points), ranging from the minimum of Cyprus (4%) to the maximum of Estonia (70%).

Spain stands out in electronic signature with 49% of companies with Internet access that

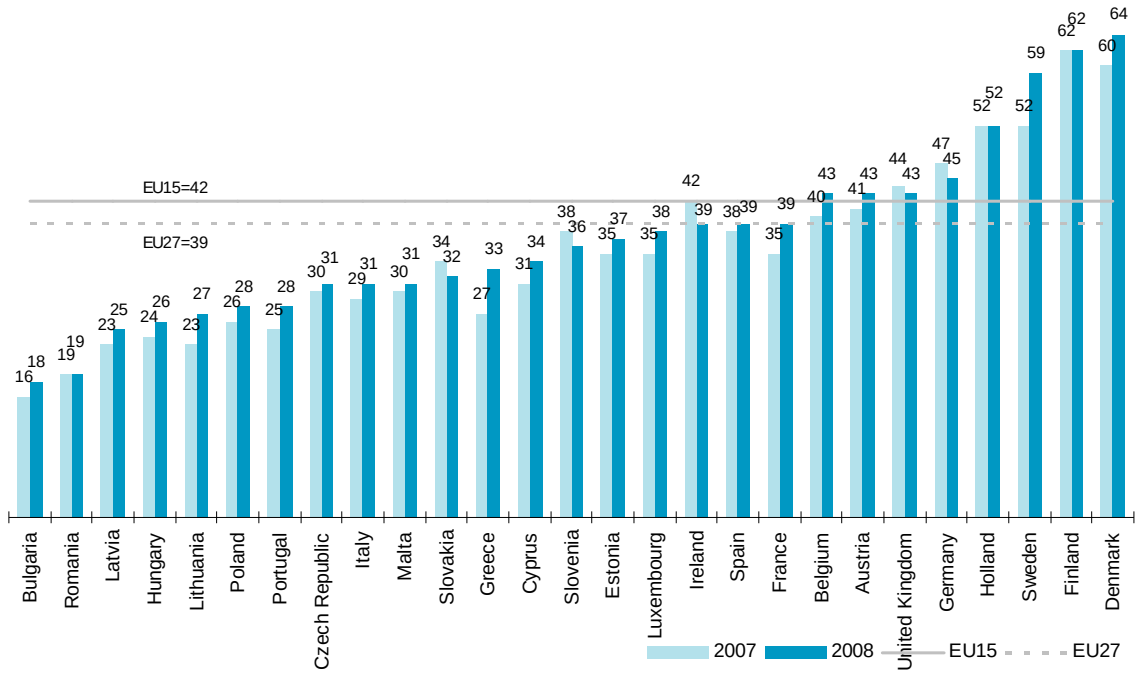
Employees who use ICTs

The growing adoption or incorporation of ICTs in companies is also accompanied by an increase in their use by employees. In fact, in 2008, 39% of the employees of EU27 countries used computers with an Internet connection at least once a week in the course of their daily activity. This value is 1 pp above that corresponding to 2007.

Northern European countries such as Denmark, Finland and Sweden lead the ranking with values of 59% in the case of Sweden and more than 60% in the other two. The following block is comprised of a group from the centre of Europe, with values ranging from 43% in the case of Belgium, Austria and the United Kingdom, and 52% in the case of Holland. Spain, together with France and Ireland, is positioned within the group of countries with average values.

Once again, Bulgaria and Romania occupy the lowest positions of the ranking of the 27 Member States. In both cases, the percentages achieved in 2008 did not exceed 20%.

Figure 39. Employees who used computers with an Internet connection in the course of their daily activity at least once a week (%)



Base: Total employees

Source: Eurostat

e-Commerce in relation to company sales

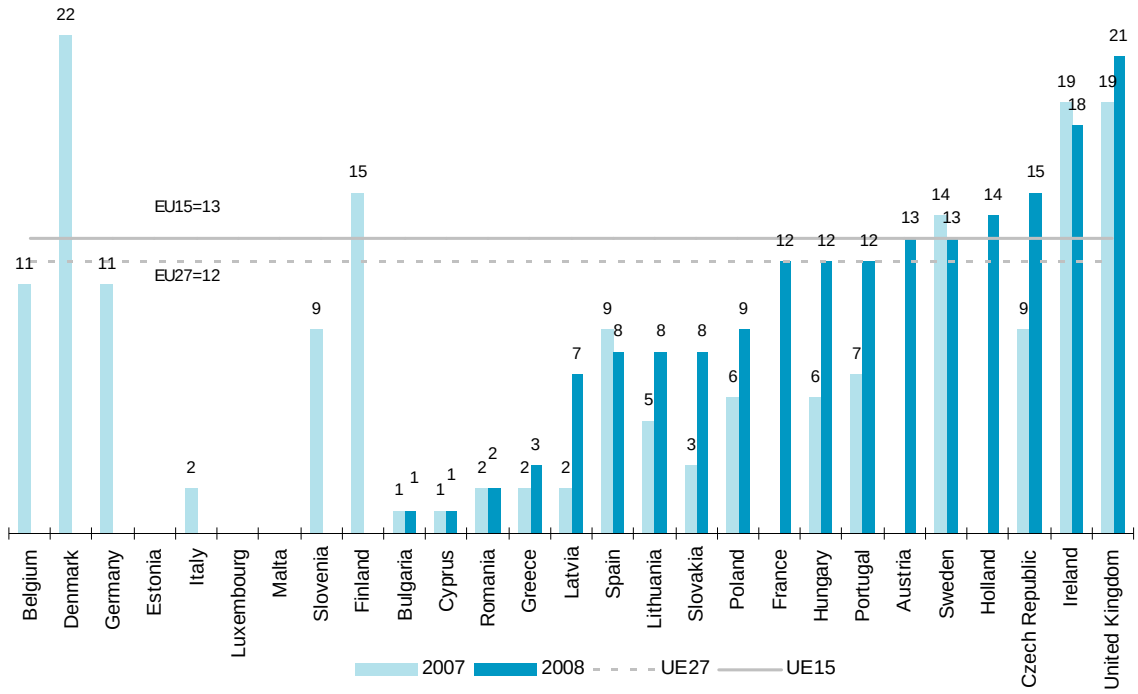
The percentage of e-Commerce in relation to total sales of EU27 companies was 12% in 2008, compared to 11% in 2007.

The United Kingdom was the only country to exceed 20%. Ireland, with 18%, occupied second place in the ranking.

This indicator has notable differences between countries. Only four countries reached values above the Community average, another four countries did not exceed 3% and there was a difference of 20 pp between the maximum and the minimum values.

Most cases recorded growth respect to the previous year. The greatest growth was in Hungary, which increased from 6% in 2007 to 12% in 2008.

Figure 40. e-Commerce in relation to total company sales (%)



Base: Total company sales

Source: Eurostat

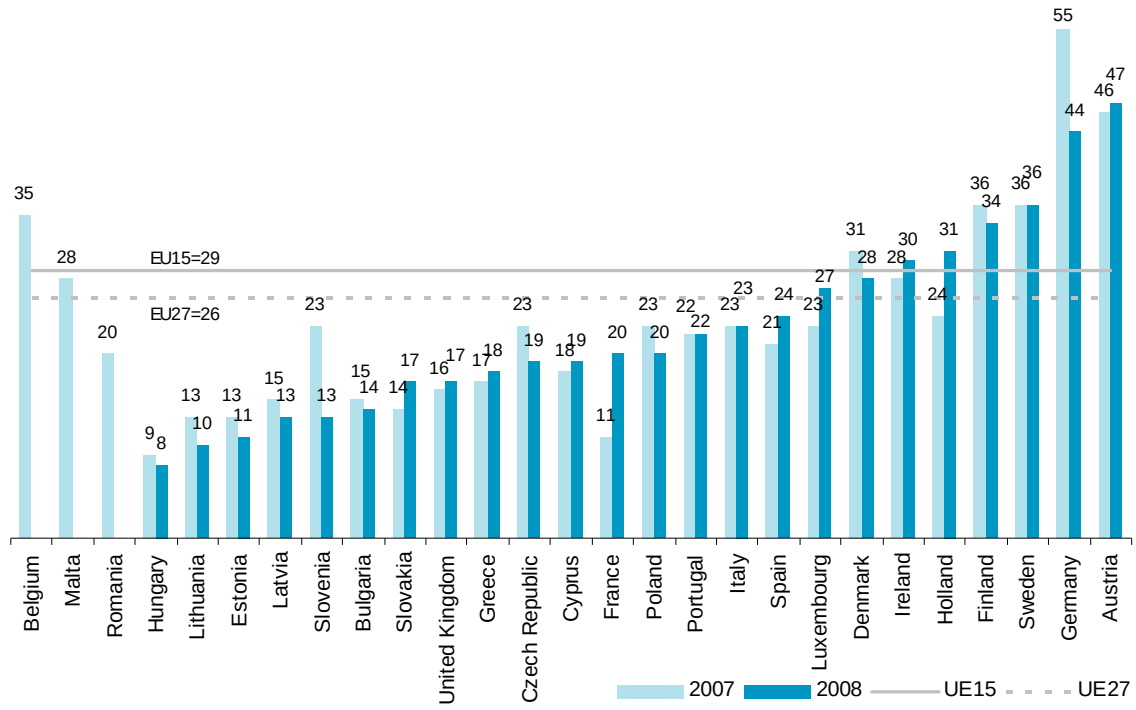
Integration of internal processes

This section of the third block of indicators (ICTs in the business sector) includes two related to CRM (Customer Relationship Management) software. On one hand, companies that used CRM software solutions oriented towards enhancing customer relations and, on the other, companies that used them to analyse their customer information in order to carry out marketing actions.

With respect to the first of these, the data published by the Statistical Office of the European Communities (Eurostat) revealed that 26% of EU27 companies used CRM systems to enhance their customer relations. Austria stands out above the rest with

47% and growth of 1 pp in relation to 2007. Germany also occupies a strong position with 44%, although it represents the greatest decline compared to the previous period (11 pp). France recorded the greatest growth, 20%, having increased 9 pp in one year. At the opposite end Hungary, Lithuania and Estonia recorded values under 12%.

Figure 41. Companies that used CRM software solutions to enhance their customer relations (%)



Base: Total companies

Source: Eurostat

Another use of Customer Relationship Management systems, while being less common than the previous use, is for analysing customer information in order to develop more effective marketing actions.

A total of 17% of European companies belonging to the EU27 use CRM solutions for this purpose.

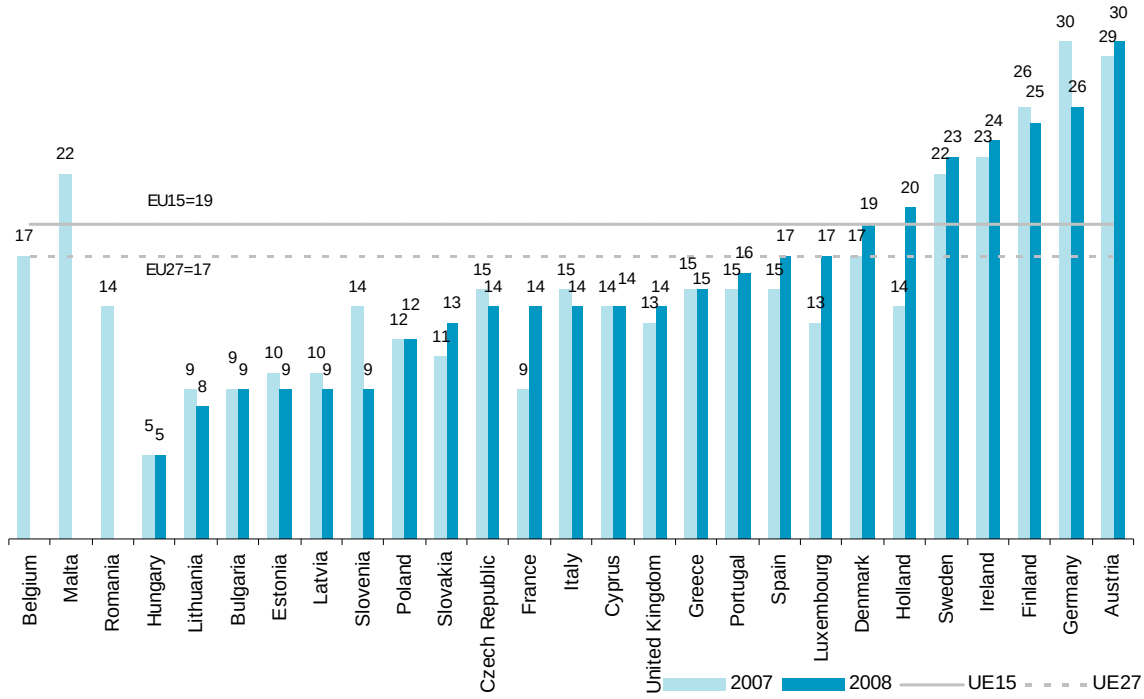
In first place, and 13 pp above the average, is Austria. The second country is Germany, which also reached 30% in 2007, although in 2008 its indicator dropped to 26%.

The lowest percentage of all corresponds to Hungary (5%). Lithuania, Bulgaria, Estonia, Latvia and Slovenia comprise the group of companies occupying the lowest positions of the ranking, together with Hungary, all with very similar percentages and under 10%.

Spain's position, with an increase of 2 pp in relation to the values recorded in 2007, is

aligned with the EU27 average, together with Luxembourg.

Figure 42. Companies that used CRM software solutions to analyse customer information for marketing purposes (%)



Base: Total companies

Source: Eurostat

Integration with suppliers and/or customers

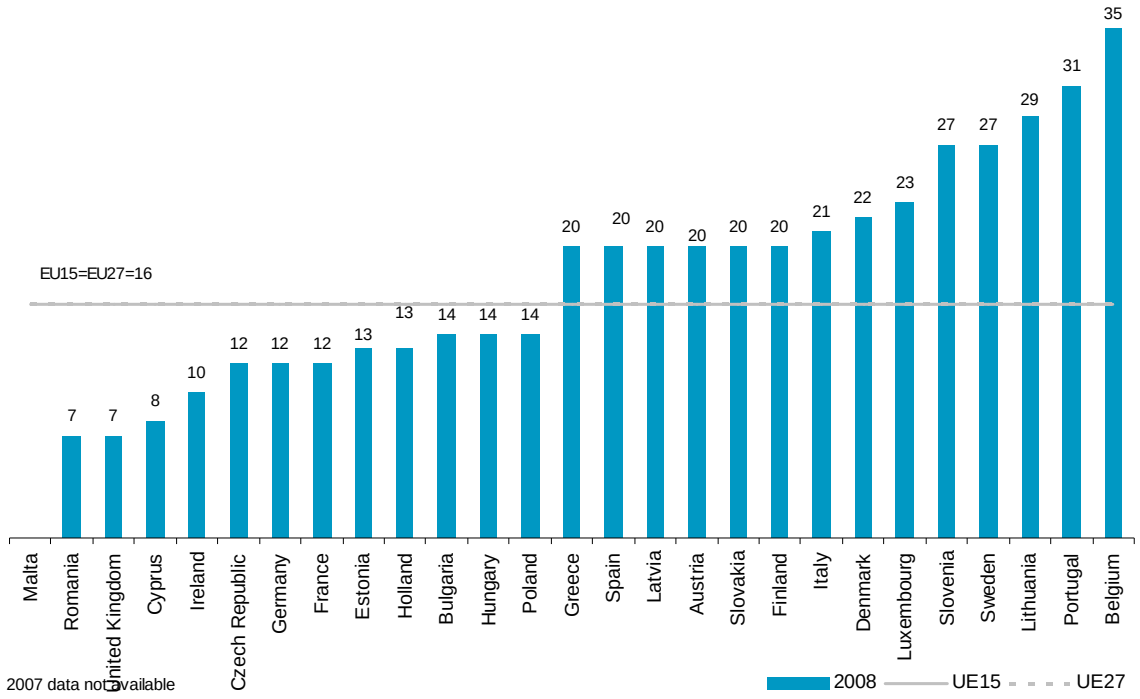
Some of the main effects associated with the incorporation of new information technologies into the business sector are enhanced productivity, competitiveness and the efficiency of companies. Relations with suppliers and customers are also affected, becoming more streamlined, transparent, efficient and productive.

Four indicators are incorporated into this section. Firstly, we will focus on those companies whose business processes are automatically connected to those of their suppliers and/or customers.

Around 16% of both EU27 and EU15 companies have business processes automatically connected to those of their suppliers and/or customers. Belgium occupies first place in the EU27 with 35%. It is followed by Portugal with 31%.

Spain, with 20%, is positioned above the average, in a block of countries (Greece, Latvia, Austria, Slovakia and Finland) with the same value. The United Kingdom, which usually occupies privileged positions in most indicators, was in the lower end of the ranking, at the same level as Romania (7%).

Figure 43. Companies with business processes automatically connected to those of their suppliers and/or customers (%)



Base: Total companies

Source: Eurostat

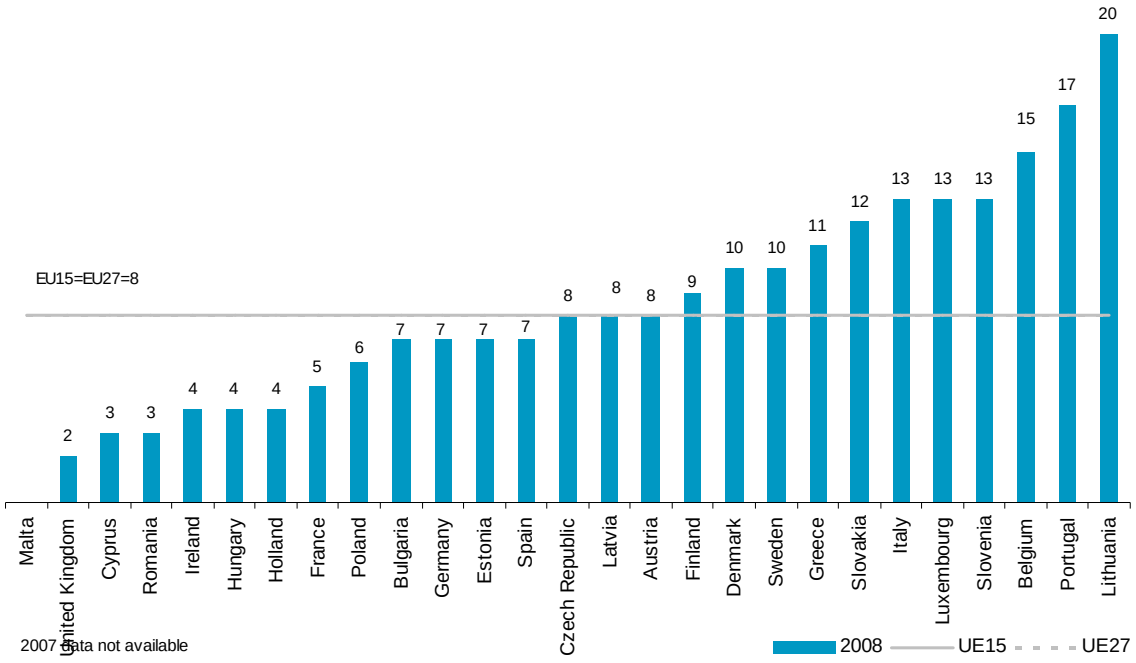
Information has become a component as important to company development as human and financial resources. It is one of the key elements that allows reductions in costs and growth in productivity, thereby facilitating the operating procedures of companies at a more global and competitive level.

Given the relevance of information, sharing it can represent a driving and enabling force of all the benefits derived from it. It is therefore worth analysing the companies that regularly share information with customers about inventories, production plans or demand forecasts.

The country with the highest percentage of companies that share said information on a regular basis was Lithuania which, with 20%, is 12 pp above the Community average (8%). Once again, Portugal occupied a notable second place (17%), followed by Belgium (15%). As in the case of the previous indicator, the United Kingdom was once again relegated to last place in the ranking with 2%.

East European countries were distributed throughout the ranking, occupying both outstanding and less relevant positions.

Figure 44. Companies that regularly shared information with customers about inventories, production plans or demand forecasts (%)

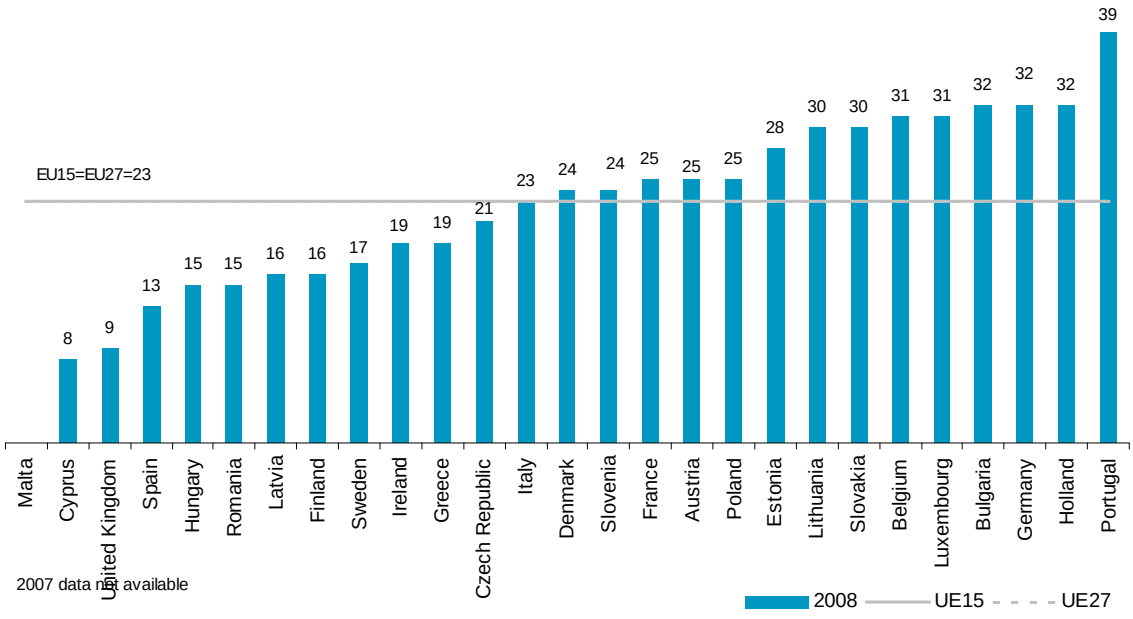


Base: Total companies

Source: Eurostat

Another indicator that must be taken into account in this section is companies that use automatic data exchange to send or receive product-related information.

Figure 45. Companies that use automatic data exchange to send or receive product-related information (%)



Base: Total companies

Source: Eurostat

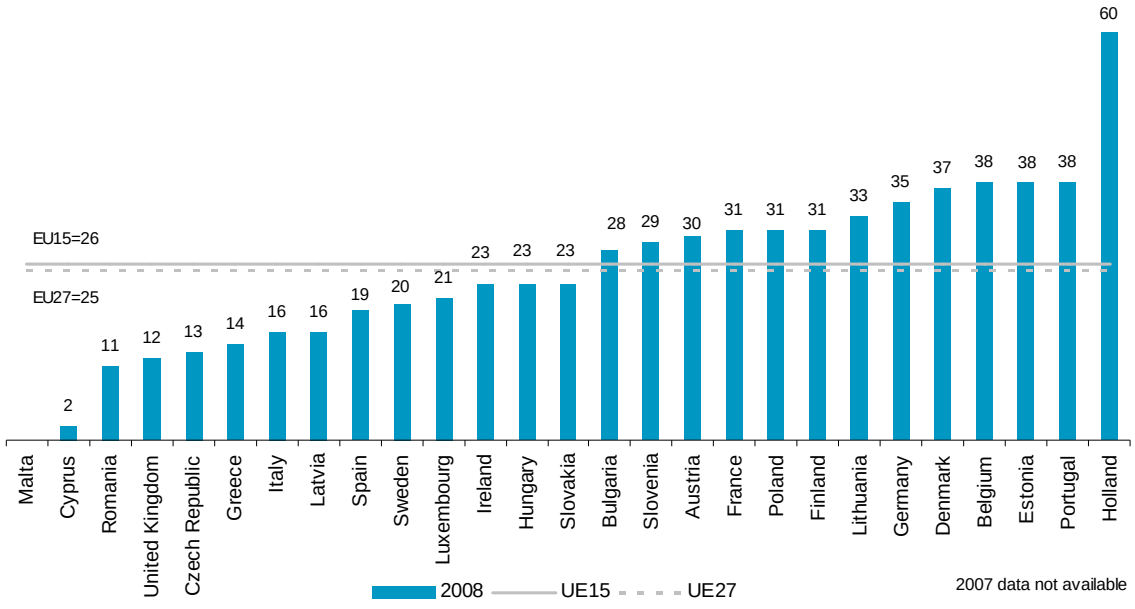
The 39% corresponding to the leading country, Portugal, surpasses Holland's 32% by 7 pp, which occupies second place. The average value corresponding to both the EU27 and EU15 was 23%, the same percentage achieved by Italy. It is worth noting that over half of Member States exceeded this average.

The countries that occupied the lowest positions were Cyprus (8%) and the United Kingdom (9%), the only two whose percentages of companies that use automatic data exchange to send or receive product-related information remained under 10%.

Although suppliers and customers played a more prominent role in the chain of agents that interact with companies, the public administrations also maintained considerable contact with the business world. So much so that the indicator referring to the percentage of companies that use automatic data exchange to send or receive data from the administrations recorded the highest values.

As shown by the graph below, which includes the data published by the Statistical Office of the European Communities (Eurostat), there is a clear leadership. Holland, with 60% and a difference of 22 pp with respect to the second, leads the European ranking. A distant second are Portugal, Estonia and Belgium (38%). A total of 13 countries recorded values above the average of the EU27 (25%) and the EU15 (26%). Finally, Cyprus (2%) lagged behind the Member States, at 9 pp below the next country on the list, Romania.

Figure 46. Companies that used automatic data exchange to send or receive data from authorities (%)



Base: Total companies

Source: Eurostat

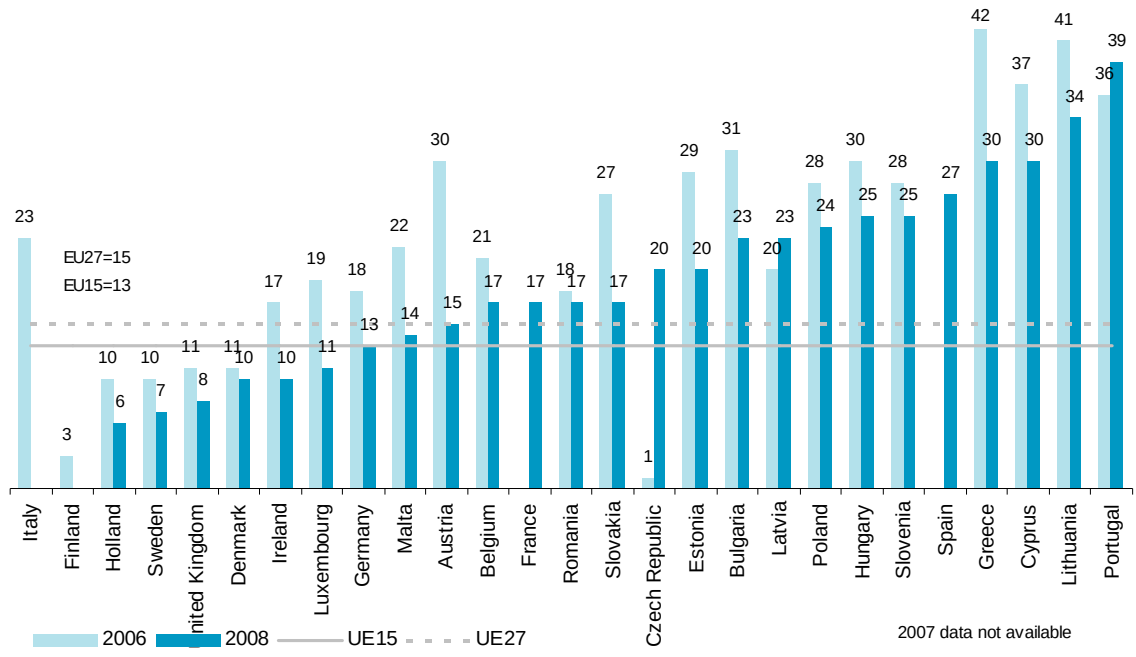
Digital Inclusion

Reasons for not having Internet at home

Generally speaking, the most frequently alleged reason in all EU27 countries for not having Internet at home was lack of need, considering, for example, that its content is not useful or interesting, among the possible reasons. Specifically, 15% of European households, the EU27 average, considers this as being the main reason. This is followed by the high price of the equipment used to access the Internet (10% of total households). In third and fourth place is the price of connections (8%) and the fact that users access the Internet from a location other than home (6%).

If we focus on Internet users' lack of need, we can see that Portugal recorded the greatest percentage of households that identified this reason most related to the lack of the Internet (39%), while Holland recorded the lowest percentage (6%).

Figure 47. Households without Internet access due to lack of need (content not considered useful, interesting, etc.) (%)



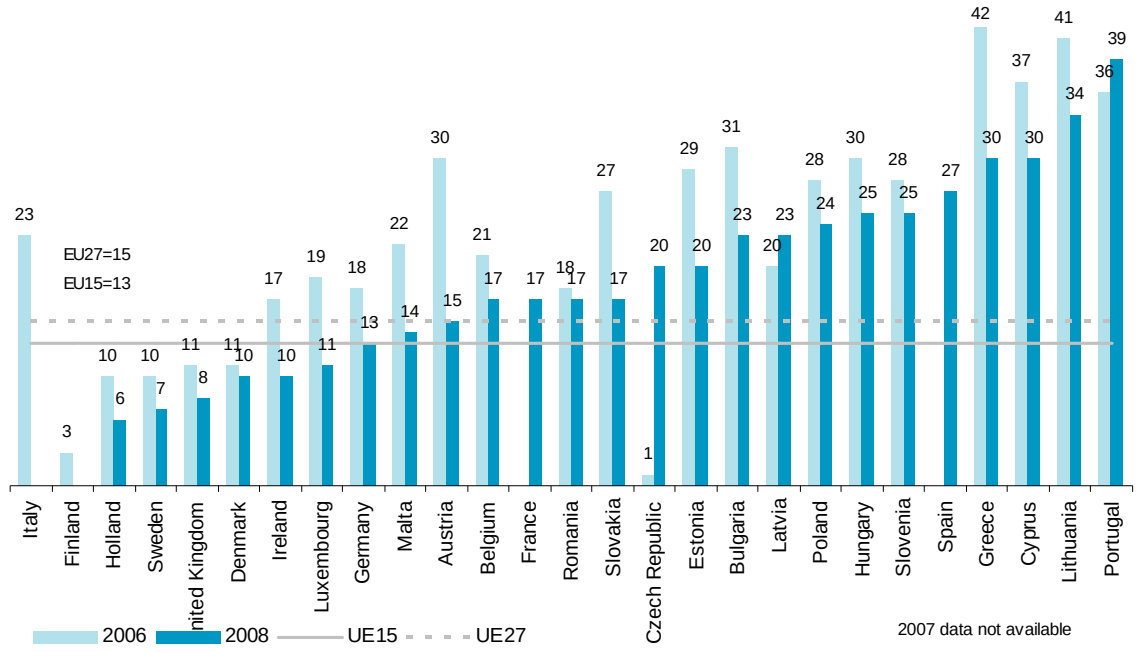
Base: Total households

Source: Eurostat

In relation to the second reason, the price of Internet access equipment, 28% of households in Portugal considered this reason as being relevant, compared to 1% in Denmark. In Spain, price is not the most significant factor; in fact, the price of equipment is more important in twelve other countries than in Spain.

In Spain, price is not the most important reason for having or not having an Internet

Figure 48. Households without Internet access because the cost of access equipment is too expensive (%)

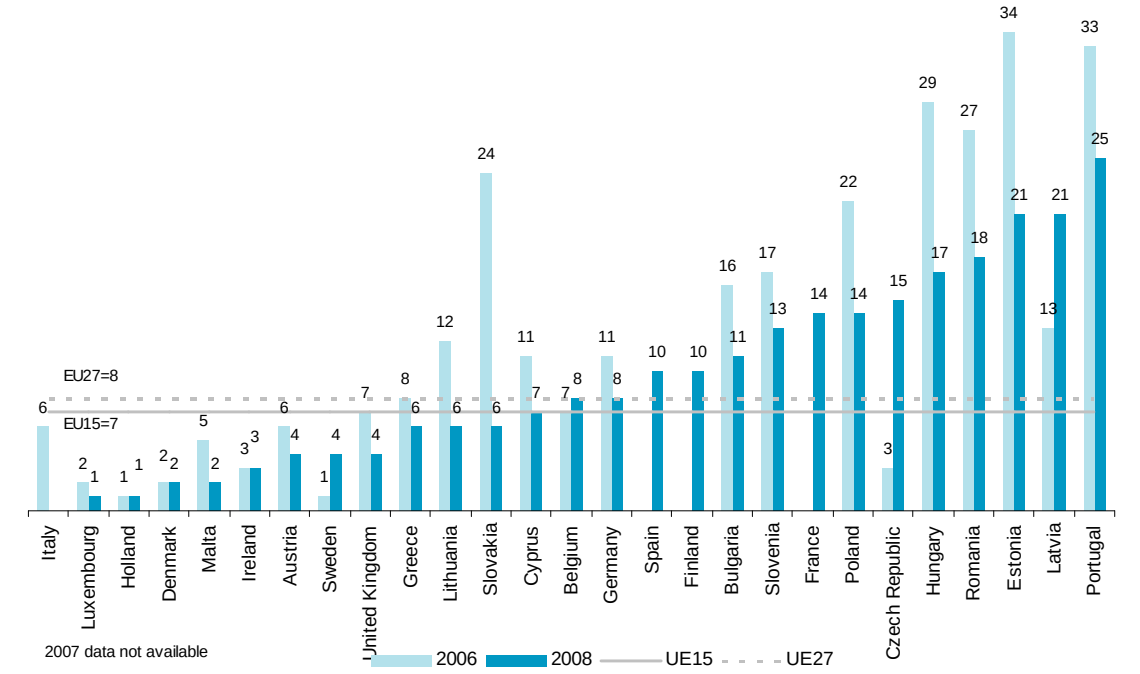


Base: Total households

Source: Eurostat

Finally, Portugal is first 25% and Latvia second with 16% in relation to both the cost of Internet access and accessing from another location.

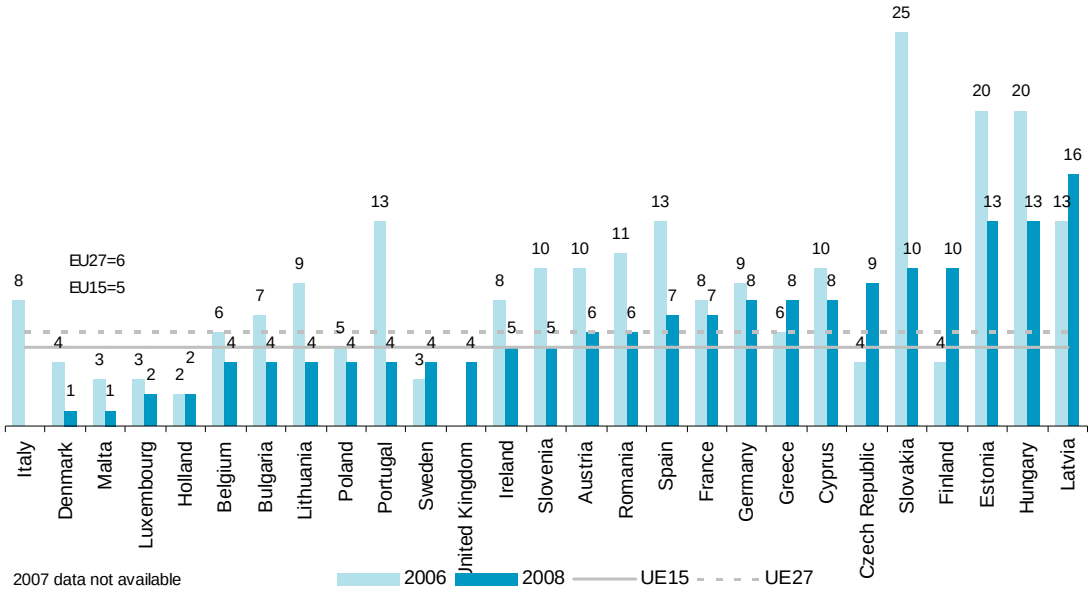
Figure 49. Households without Internet access because the access cost is too expensive (%)



Base: Total households

Source: Eurostat

Figure 50. Households without Internet access because the individuals access from another location (%)



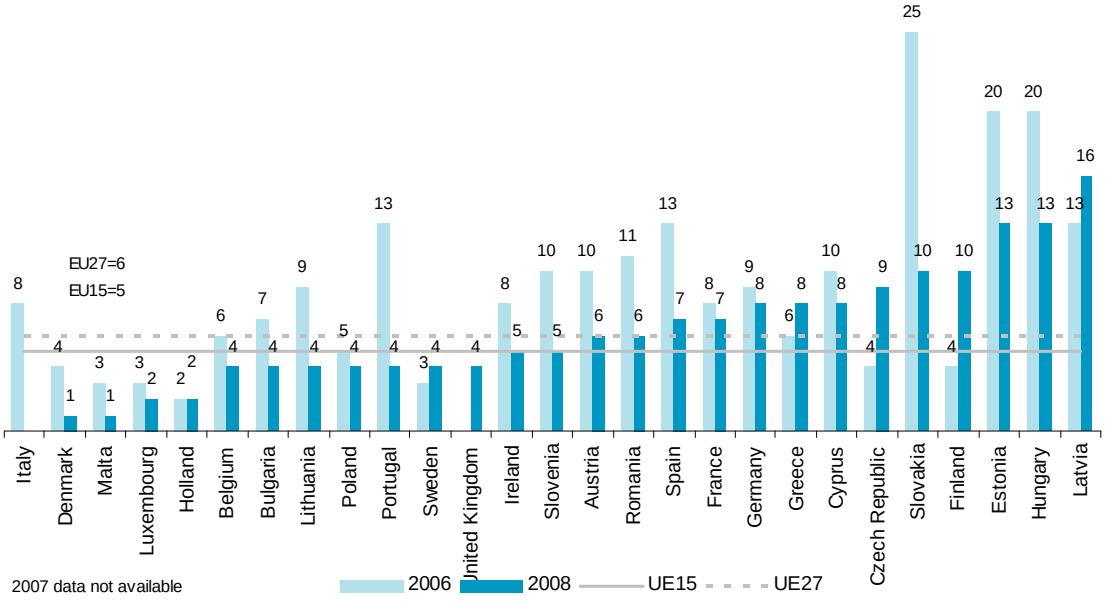
Base: Total households

Source: Eurostat

Reasons for not having broadband at home

Once again, as in the case of the reasons for not having an Internet connection at home, lack of need is the reason given by a high percentage of households on average in all the EU27 countries (4%).

Figure 51. Households without broadband because they do not need it (%)



Base: Total households

Source: Eurostat

The country that recorded the highest percentage of households without the need for broadband was Greece, with 10%.

In Belgium and Bulgaria (both with 1%), however, it was not a very frequent reason, as in Spain, where only 2% of households stated this reason.

The other reasons, such as the high price of broadband, lack of accessibility within the geographical zone of the household or access from a different location, recorded values of 3%, 2% and 1%, respectively.

In terms of price, Germany leads the ranking with 7% of households that considered it expensive. In the block of countries formed by Belgium, Bulgaria, Czech Republic, Denmark, Estonia, France, Luxembourg and Holland this reason was only stated by 1% of households in each country.

In Spain, in cannot be considered a reason for not installing broadband either, as only 2% of households consider that the price of this service is expensive.

Figure 52. Households without broadband because they consider it an expensive service (%)

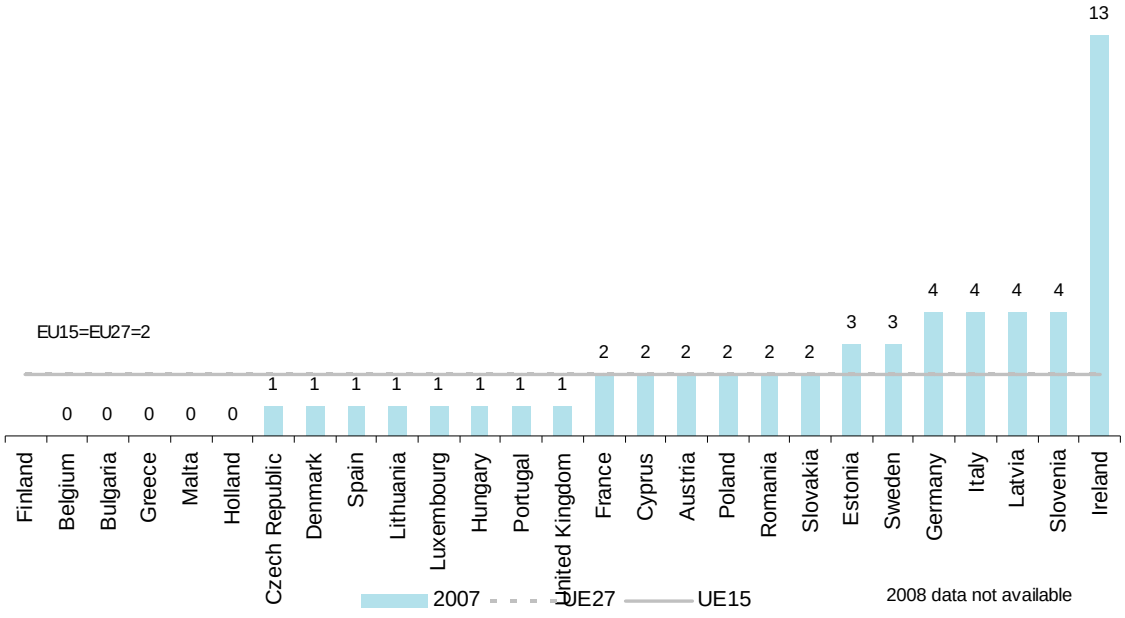
Base: Total households

Source: Eurostat

Most EU27 countries have wide broadband coverage and the lack of availability of the service in certain geographical zones is not considered a decisive argument for not having broadband at home.

The percentage of households that do not have broadband due to lack of availability in their zone did not exceed 4%, with the exception of Ireland, with 13%.

Figure 53. Households that did not have broadband because it was not available in their zone (%)

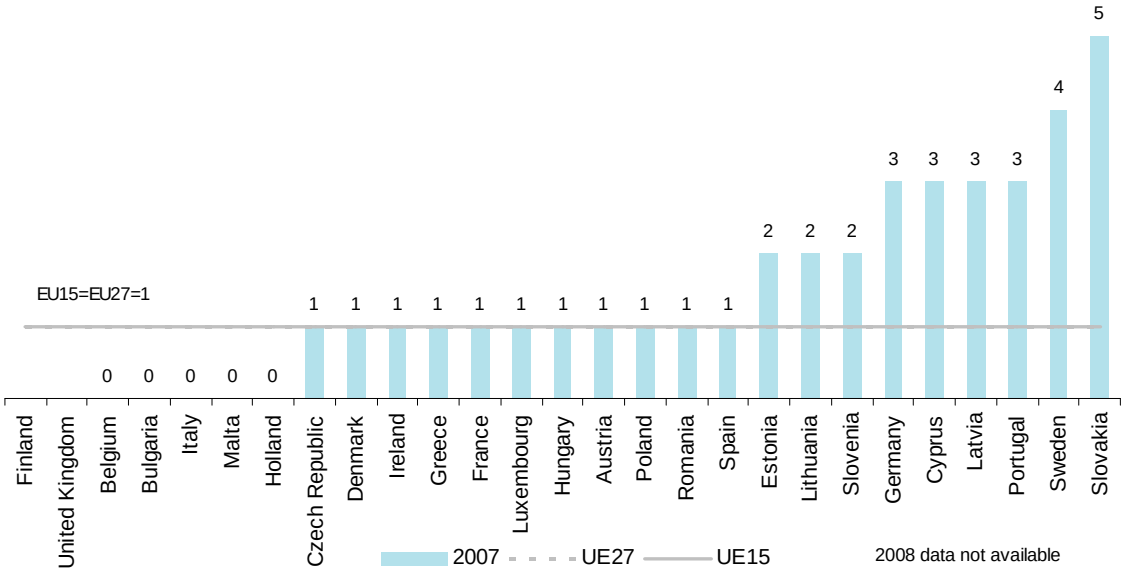


Base: Total households

Source: Eurostat

Finally, the lack of availability is associated with the fact that access is made from a location other than the household, although in this case no percentages higher than 5% were recorded in any country, which was the maximum value reached by Slovakia.

Figure 54. Households that do not have broadband because one of its members accesses from a different location (%)



Base: Total households

Source: Eurostat

Public Services: Electronic Administration

The last of the priority points within the framework of the i2020 plan relates to Electronic Administration, which consists of implementing information and communication technologies in internal government processes and in the delivery of state products and services to both citizens and companies.

Citizens

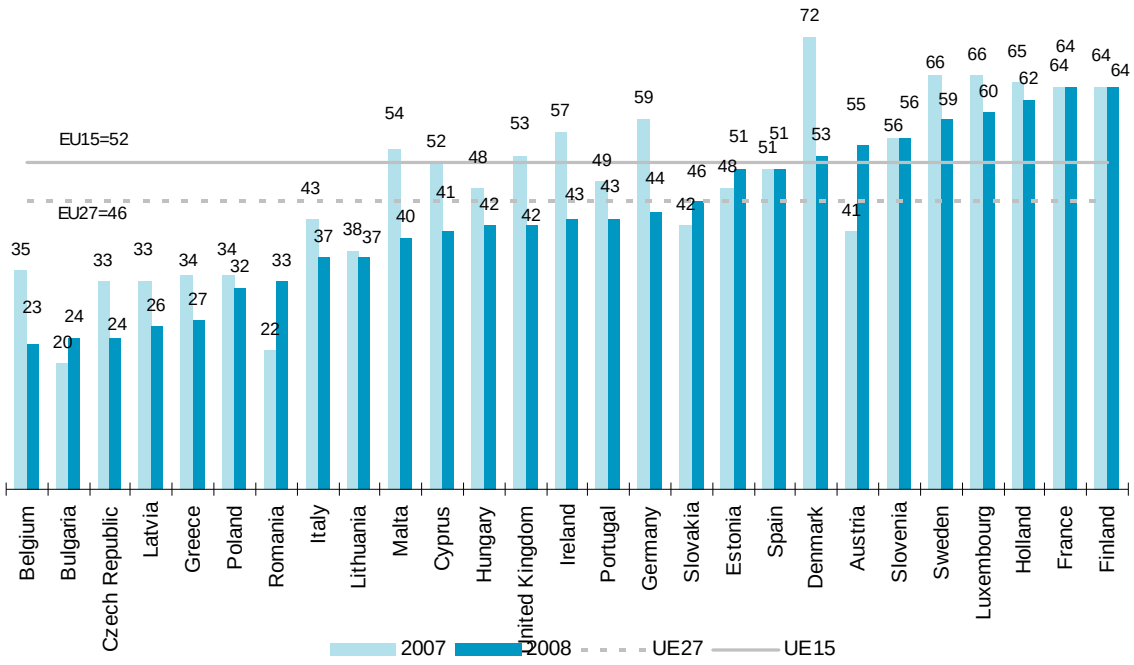
The first of the indicators analysed in this section corresponds to individuals who have used the Internet in the last three months to interact with the public authorities.

Some 46% of the individuals who accessed the Internet in the last three months in the EU27 interacted with the public administration via this channel. The countries in the north and south of Europe maintained the leading positions of the EU ranking. Specifically, the order is led by Finland and France (64%), Holland (62%) and Luxembourg (60%).

Around 46% of Internet users in the last three months interacted with the public administration in the EU27

Spain's position, with 51%, was aligned with the EU27 average, remaining stable with respect to 2007. The countries that occupied the last positions were Belgium, Bulgaria and the Czech Republic, with percentages ranging between 23% and 24%. Latvia (26%) and Greece (27%) followed behind the Czech Republic, with the lowest values, under 30%.

Figure 55. Individuals who have used the Internet to interact with the public authorities in the last three months (%)



Base: Total individuals that have used the Internet in the last three months

Source: Eurostat

The main reason for interacting with the authorities is to perform an information search on the administrations' web pages.

Companies

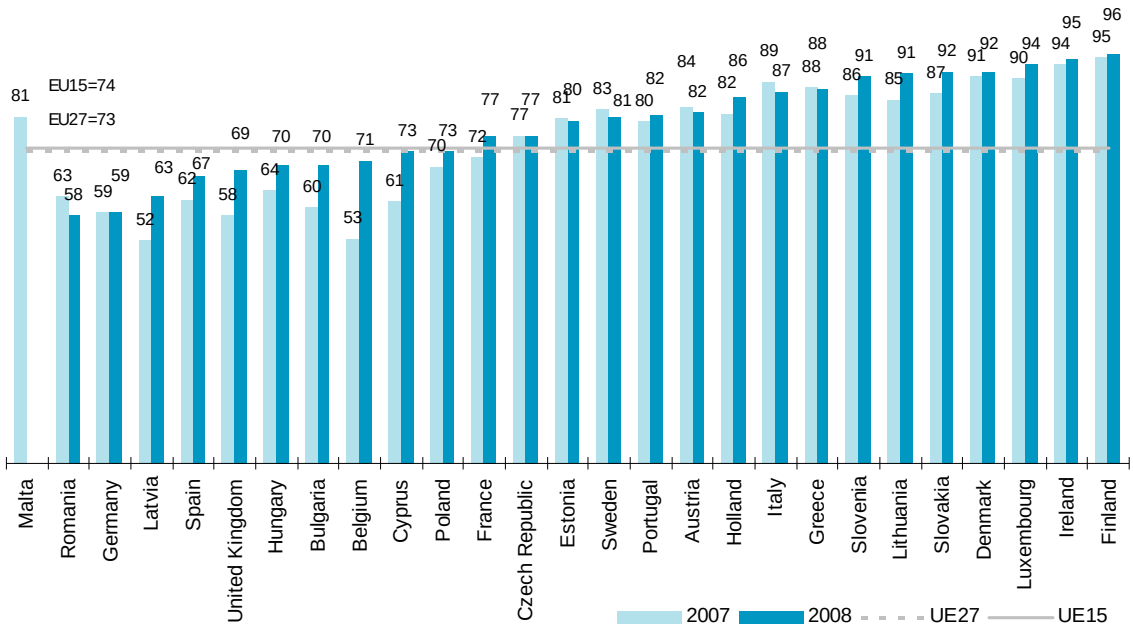
Companies use the Internet more than citizens to contact the administration

In the case of companies, the reference indicator also shows that companies have used the Internet to interact with public administrations, with higher values than for citizens. In fact, the percentage of companies with Internet access that have used the Internet for this purpose rose to 73% among the EU27 as a whole.

Seven countries have percentages above 90%, with Finland at the top of the list with 96%. In general, it should be noted that 16 countries (more than half) are above the average.

Romania is in last place with 58% and also experienced the sharpest fall in the indicator compared to the previous year (4 pp less). Germany has the second lowest percentage, with 59%, which is the same as in 2007.

Figure 56. Companies that have used the Internet to interact with the public administrations (%)



Base: Total companies with Internet access

Source: Eurostat

It is worth noting that the highest values for citizens are practically the same as the lowest values for companies. This makes it clear that, for the moment, ICTs are used more actively as a means of interacting with the administrations in the business sector than among citizens. As in the case of citizens, obtaining information from administrations' web pages is one of the main reasons for interacting with the government via ICTs, together with obtaining forms.

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6. The ICT and digital content sector in Spain

6. THE ICT AND AUDIOVISUAL SERVICES SECTOR IN SPAIN

The evolution of the ICT and audiovisual services sector in Spain significantly impacts the Spanish economy, not only from the point of view of the contribution its companies make to the Spanish gross national product and employment within the country, but also as a platform and facilitator of transformation processes in all areas and in the creation of innovative enterprises.

It is estimated that the total gross value added generated by ICTs, which includes their indirect effects and those derived from taking external network factors into account, amounted to €246.16 billion, representing 22.5% of Spanish GDP in 2008. Similarly, in relation to employment, when the indirect effects and the external network factors are included, it is estimated that ICTs generated more than 1.5 million jobs, approximately 7.5% of the total Spanish workforce in that year.

Below is an analysis of the main results from the "2008 Report on the Information Technologies Sector in Spain" (Informe del Sector de las Tecnologías de la Información en España 2008). 2009 Edition, and from the report "Figures from the ICT and Audiovisual Services Sector" (Cifras del Sector TIC y Servicios Audiovisuales), both by ONTSI (Spanish Observatory for Telecommunications and the Information Society), which detail the sector's evolution from 2005 to 2008 and its impact on employment and GDP. The reports take the structural and economic characteristics of the companies that comprise the sector as their basis, such as revenues, employment, investment and gross value added.

6.1. Composition of the ICT and Audiovisual Services Sector in Spain

The ICT and audiovisual services sector is comprised of information technology, telecommunications, digital content and audiovisual services companies, which fit the CNAE (Spanish Economic Activity Classification, CNAE-93) indicated in the table. In order to determine the list of IT sector activities and products, the methodological work carried out by the OECD (Organisation for Economic Co-operation and Development) has been taken as a reference.

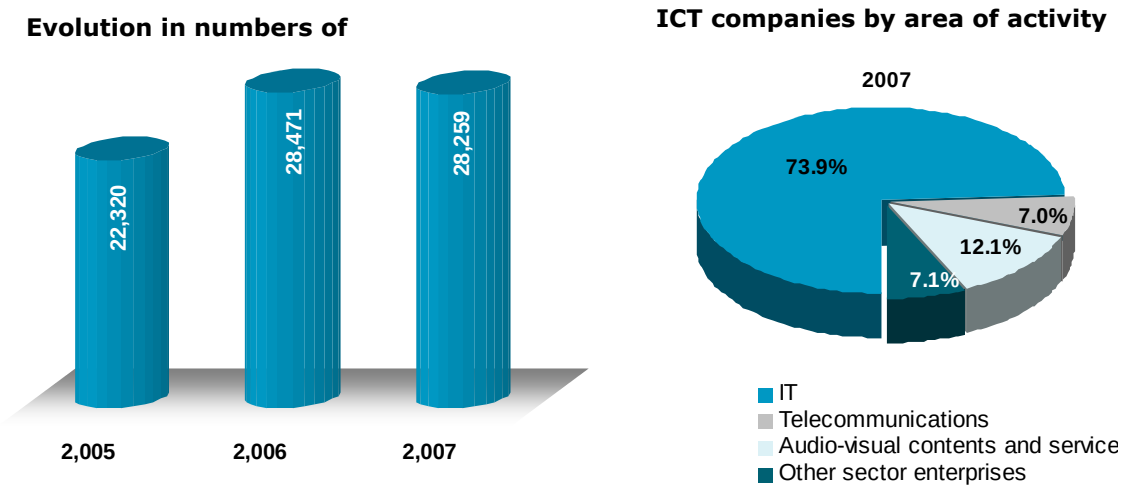
Table6: Types of company included in the ICT and Audiovisual Services sector (according to CNAE-93 Rev.1)

Information and communication technology macro sector	
Information Technologies	
Economi	**Manufacturing**
3001	Manufacture of office machinery
3002	Manufacture of computers and other information processing equipment
3130	Manufacture of insulated wire and cable
3210	Manufacture of electronic valves and tubes and other electronic components
3220	Manufacture of television and radio transmitters and apparatus for line telephony and line telegraphy
3230	Manufacture of television and radio receivers, sound or video recording or reproducing apparatus
3320	Manufacture of instruments and appliances for measuring, checking, testing, navigating and other purposes, except industrial process control equipment
3330	Manufacture of industrial process control equipment
Economi	**Services**
	Trade
5160	Wholesale of other electronic parts and equipment
5167	Wholesale of computers, computer peripheral equipment and software
	Renting of office machinery and equipment, including computers, and information processing activities
7133	Renting of office machinery and equipment, including computers
	Information processing activities
7210	Hardware consultancy
7221	Publishing of software
7222	Other software consultancy and supply
7230	Data processing
7240	Database activities
7250	Maintenance and repair of office, accounting and computing machinery
7260	Other computer related activities
Telecommunications	
	Telecommunications
6420	Telecommunications (excluding telecommunications manufacturing companies)
Digital content and audio-visual services sector	
Economi	**Manufacturing**
2214	Publishing of sound recordings
2231	Reproduction of sound recordings
2232	Reproduction of video recordings
2233	Reproduction of computer media
Economi	**Services**
9211	Motion picture and video production
9212	Motion picture and video distribution
9220	Radio and television activities
Other enterprises of the sector	
6420	Only companies that manufacture telecommunications components/equipment

Source: ONTSI (Spanish Observatory for Telecommunications and Information Society)

The number of active companies in the ICT and audiovisual services sector rose from 22,320 in 2005 to 28,259 in 2007, an increase of 27%. The sector with the largest number of companies and the greatest volume in general, as shown throughout the analysis, is the information technology sector, with 74% of companies dedicated to this activity. In second place are activities linked to digital content and audiovisual services, which represent 12% of the total with more than 3,400 companies in 2007. Both the telecommunications services sector and the "Other companies" (telecommunications manufacturers) classification account for 7% each.

Figure 57. Number of ICT and Audiovisual Services sector companies, evolution 2005-2007 and distribution 2007

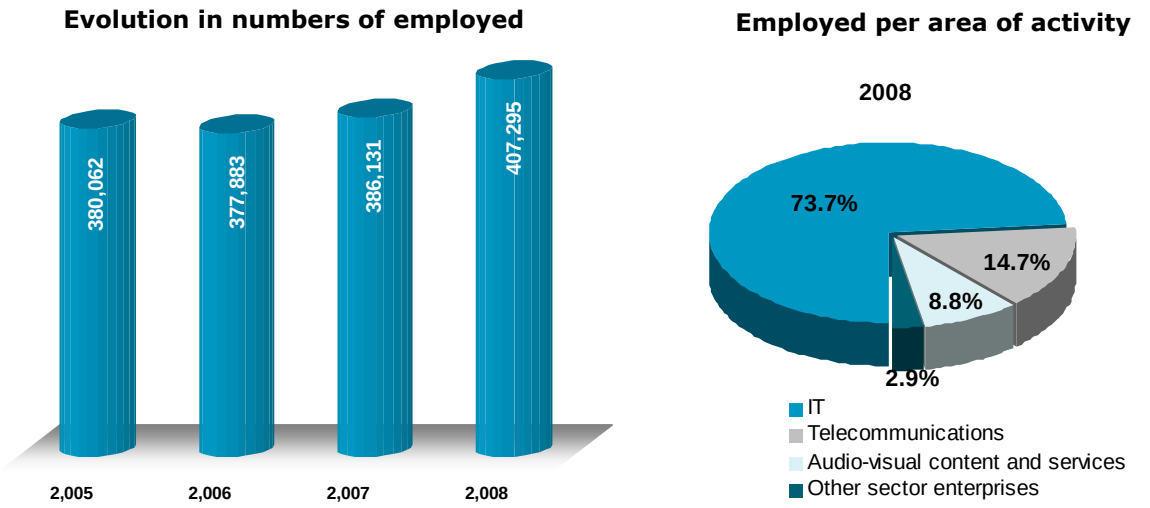


Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society)

6.2. Jobs in the ICT and audiovisual services sector

In 2008, the ICT and Audiovisual Service sector employed more than 400,000 people. Information technology companies, in line with the percentage of companies they represent, generated the most employment, with more than 300,000 people, equivalent to 74% of the total and 11% growth compared to 2007. Telecommunications services accounted for 14% of the total.

Figure 58. Employment in the ICT and audiovisual services sector, evolution 2005-2008 and distribution 2008



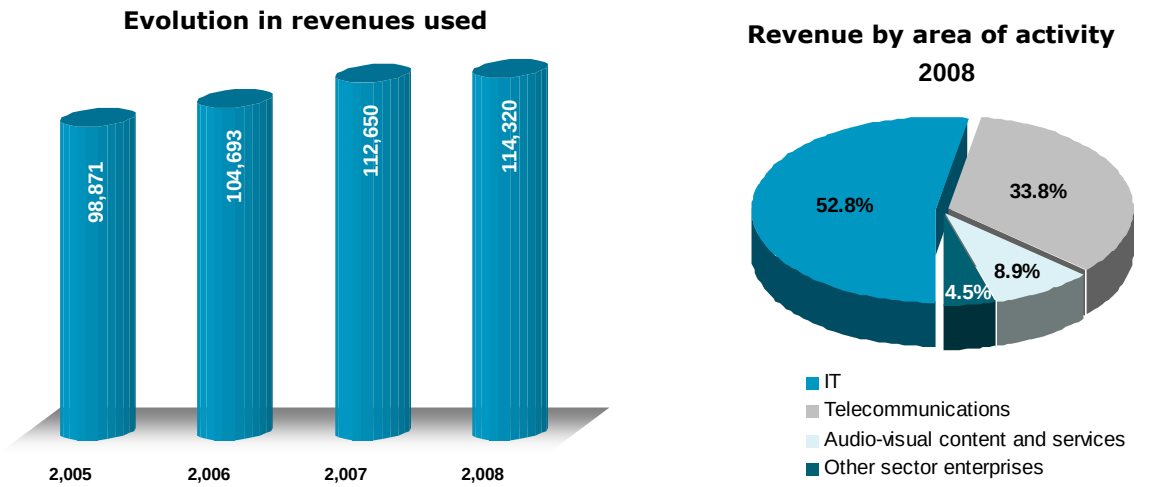
Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society)

6.3. ICT and audiovisual services sector revenues

The ICT and audiovisual services sector in Spain had sales of €114.32 billion in 2008. The growth trend continued with an increase of 1.5% on 2007. Between 2005-2008 growth was 16%.

In 2008, information technology companies accounted for 53% of sales, followed by telecommunications with 34% and digital content and audiovisual services companies with 9%. The ICT revenues/GDP ratio for 2008 was 10.4%.

Figure 59. ICT and audiovisual services sector revenue, evolution 2005-2008 and distribution 2008

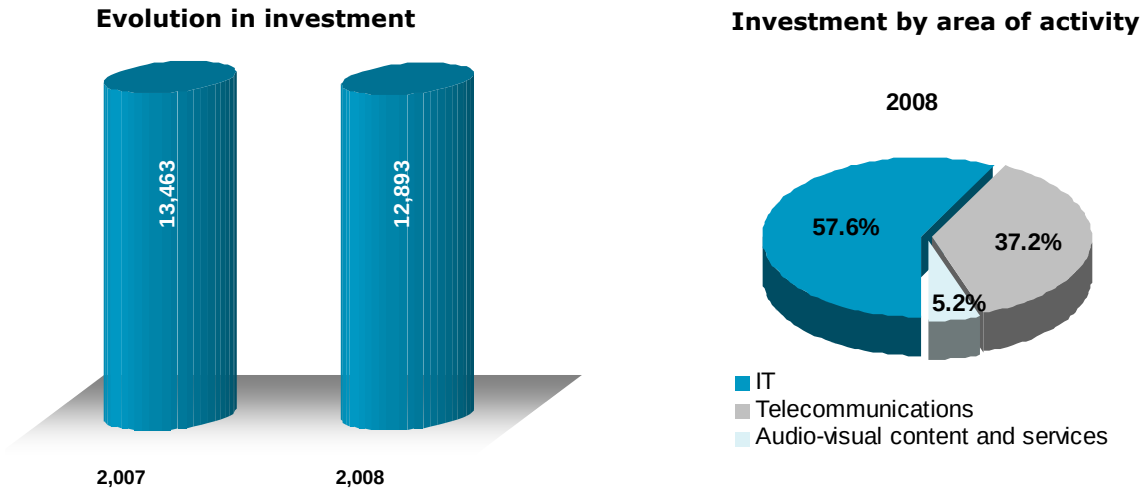


Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society)

6.4. ICT and audiovisual services sector investment

ICT and digital content sector companies invested almost €13 billion in 2008, of which 58% corresponded to investments made by information technology companies and 37% to telecommunications operators. In 2008, ICT investment accounted for 4% of the gross fixed capital formation.

Figure 60. ICT and audiovisual services sector investment, evolution 2005-2008 and distribution 2008



Note: no figures for the "Other companies" category

Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society)

6.5. Gross value added of the ICT and audiovisual service sector

The gross value added at market prices (GVAmp) rose from €47 billion in 2005 to more than €64 billion in 2008. In relation to 2007, growth was 7.7%.

The GVAmp of the ICT and audiovisual services sector in 2008 represents 5.8% of GDP, 0.2 pp higher than in 2007.

6.6. ICT subsectors in Spain

6.6.1. The information technology sector

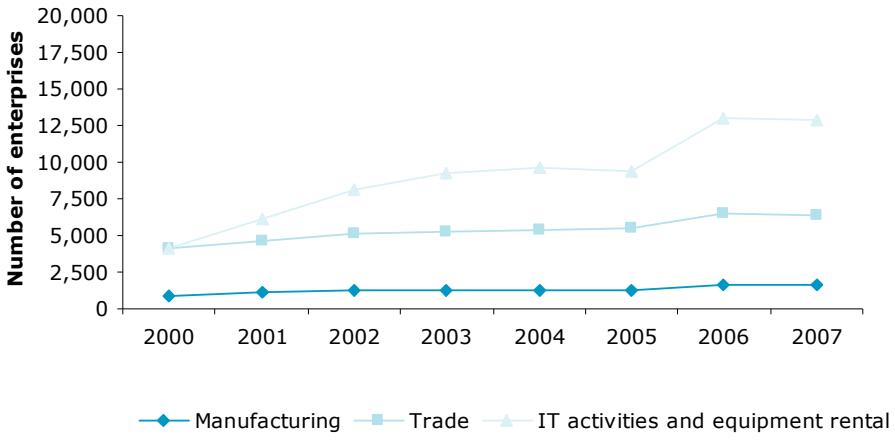
The "IT sector" is made up of manufacturing and service industries, whose main activity is linked to the development, production, marketing and intensive use of information technologies.

IT sector companies

The number of companies in the IT sector has grown by 30% since 2005 to more than 20,800 companies in 2007, which account for three quarters of sector for ICTs and

audiovisual services, as mentioned. More than 60% of companies in the IT sector are dedicated to IT activities, 30% to retailing/wholesaling and 8% to manufacturing.

Figure 61. Evolution in the number of IT Sector companies



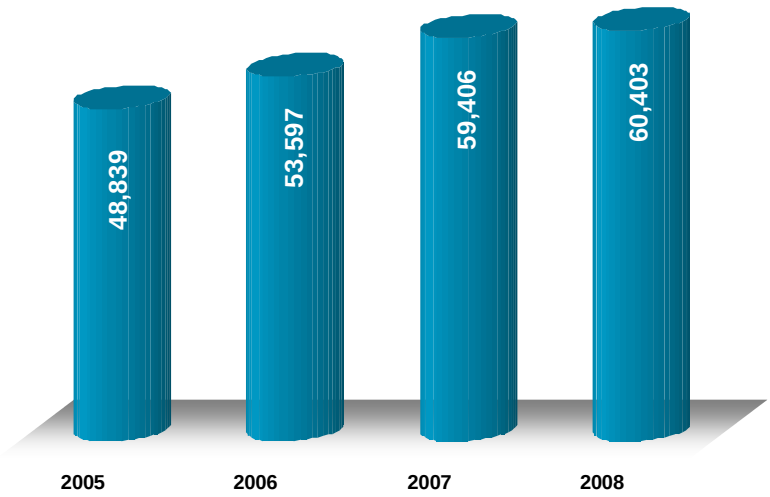
Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society)

IT sector revenues

Sales for the IT sector in 2008 totalled €60.403 billion, an increase of 23.7% on 2005 and 1.7% on 2007. This growth is mainly due to companies engaging in IT activities, which grew 6.3%.

By area, 43% of sales for 2008 corresponds to retailing/wholesaling activities, 38% to IT activities and 19% to manufacturing.

Figure 62. Evolution in IT sector revenues



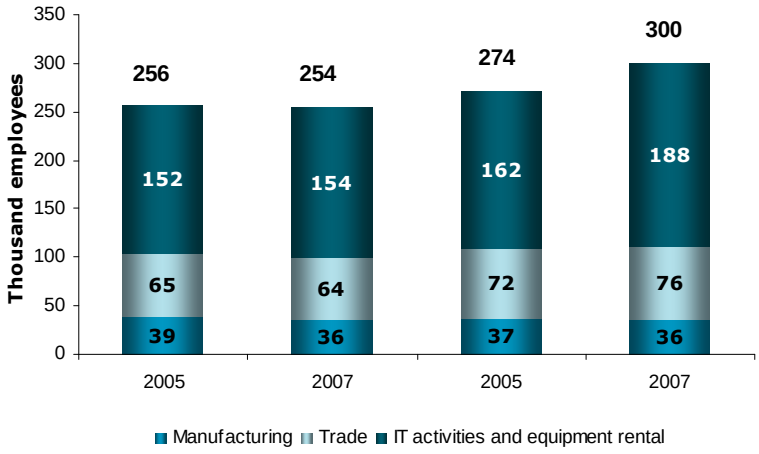
Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society)

Employment in the IT sector

The number of people employed by the IT sector continues to grow, with almost 11% more staff in 2008 than in 2007, amounting to more than 300,000 people.

IT activities generate the most jobs, accounting for 62.7% of the total and increasing 16% in 2008 compared to the previous year. It is followed by retailing/wholesaling companies, which account for 25.3% of the total, and manufacturing companies, which account for 12%.

Figure 63. Evolution in the number of IT sector employees

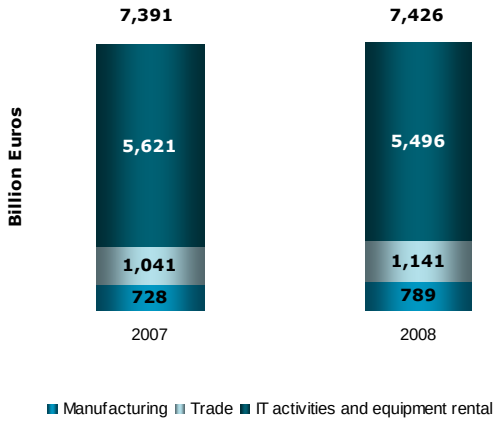


Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society)

IT sector investment

In 2008, IT sector companies invested more than seven billion Euros, of which 74% was invested through IT activities.

Figure 64. Evolution in IT sector investment



Note: Figures for the 2005-2006 period are not available

Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society)

Gross value added in the IT sector

In 2008 gross value added at market prices for the IT sector increased by 5.6% to €34.966 billion compared to 2007, representing 3.2% of Spain's annual GDP.

6.6.2. The telecommunications sector

The telecommunications sector comprises companies providing fixed telephony, broadband and mobile communications services[17]. The principal figures for this sector presented by the CMT (Telecommunications Market Commission) are shown below.

Telecommunications sector companies

The number of active companies increased by 13% in one year, from 1,967 in 2007 to 2,224 in 2008.

Telecommunications sector revenues

In 2008, telecommunications sector sales reached €38.659 billion, 1.3% more than in 2007. This revenue accounts for 4% of GDP in 2008.

By type of telecommunication service, retail services grew by 1.5% to €31.507 billion, with the most dynamic segments being mobile communications and broadband.

Mobile communications now account for 47.8% of the sector's retail revenues. This is followed by fixed telephony services with 22.5%, and Internet services with 12.3%.

Services derived from broadband grew by 13.4% in 2008.

Wholesale services dropped fell by 4.1% to 18.5%, continuing the trend which began in 2003 when they accounted for 22.2%.

Employment in the telecommunications sector

In 2008, the number of jobs in the telecommunications sector fell by 3.9% from 60,184 in 2007 to 59,726 in 2008, mainly due to the integration operations of large operators. Telefónica de España is the operator that provides the most jobs, accounting for almost 55% of all jobs in the sector.

Telecommunications sector investment

Telecommunications sector companies invested €4.798 billion in 2008, 11% less than in 2007. Although this decline affects most operators, it is worth noting the increase in investment among operators in the segment for the transmission and broadcasting of audiovisual signals, satellite communications and operators such as Yoigo, Telecable Asturias and Jazztel.

[17] Does not include branch 9220 of radio and television activities

The sector's investment accounted for 1.5% of the gross fixed capital formation.

Gross value added in the telecommunications sector

The value added of the telecommunications sector rose to €19.675 billion in 2008, equivalent to 1.8% of GDP.

6.6.3. The digital content and audiovisual services sector

This classification includes manufacturing activities, such as creating recorded sound supports, or playing computer, sound and video supports, as well as service activities, which cover film and video production, film distribution and radio and television activities (CNAE 9220).

Digital content and audiovisual services companies

The number of companies increases by 42% from 2,415 in 2005 to 3,426 in 2007.

Digital content and audiovisual services revenues

Sales reached €10.131 billion in 2008, nearly 1% more than in 2007. By segment, 55% of sales correspond to audiovisual services, followed by cinematographic and video production activities with 15%.

Digital content and audiovisual services employment

The number of people employed fell by 7% to 35,864 compared to 2007. Audiovisual services generate the most jobs with 61%, followed by cinematographic and video production activities with 28%.

Digital content and audiovisual services investment

Digital content and audiovisual services companies invested almost €670 million in 2008, 4.8% less than in 2007. Investment made by television operators fell in 2008 in line with the trend in the sector.

Gross value added of digital content and audiovisual services

Gross value added at market prices totalled €6.395 billion in 2008. This amount represents 0.6% of the GDP in 2008.

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7. ICTs IN SPANISH HOUSEHOLDS

7. ICT IN SPANISH HOUSEHOLDS

During 2008, the development of the Information Society in Spain experienced new encouragement characterised by significant growths in access and use of Information and Communication Technologies (ICT) in households and by citizens. The importance of achieving a fully networked society is founded on the direct effects on citizens' quality of life and also on productivity and improvement of the economy.

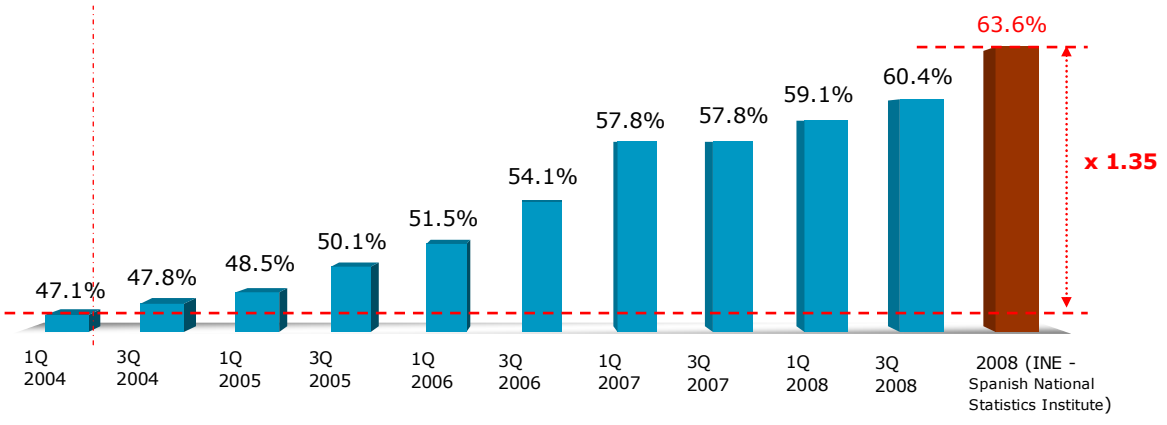
To achieve Information Society convergence with Europe and the autonomous regions, the Plan Avanza includes lines of actions to provide technological training for citizens and to increase the generalised use of ICTs, with measures to ensure inclusion of the whole population. These measures are having a direct impact which is demonstrated by a wide range of indicators, presented below.

The figures analysed in this chapter are mainly taken from the household panel survey study which the ONTSI (Spanish Observatory for Telecommunications and the Information Society) (ONTSI) has been undertaking since the third quarter of 2003, using the latest figures available for the third quarter of 2008.

7.1. ICT equipment

The amount of information and communication technology equipment continues to increase in Spanish households and the extension of services and devices both in the home and among individuals maintained a positive trend.

Figure 65. Percentage of households with a computer of some kind



Base: Total households

Source: Report on the development of the Information Society in Spain SETSI (State Secretariat for Telecommunications and Information Society)

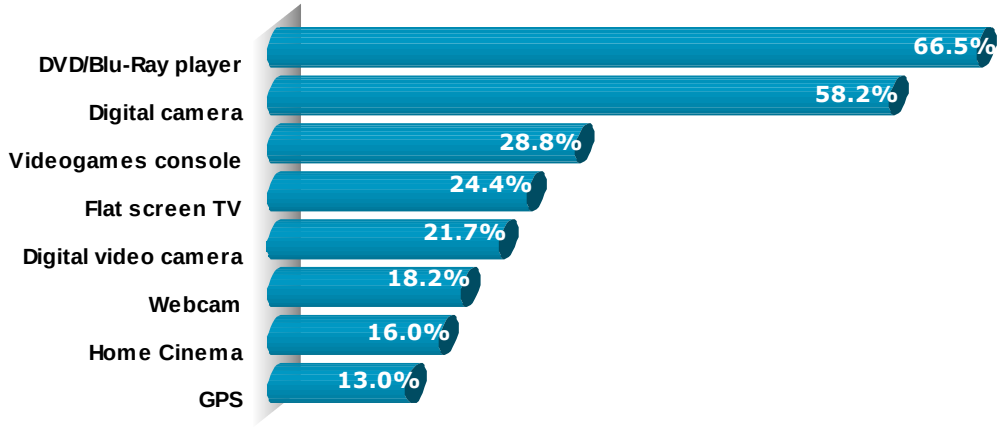
Most households have at least one computer: 63.6% have some kind of computer, be it desktop, laptop or both, equivalent to year-on-year growth of more than 3 pp and leads us to anticipate new increases in the number of households connected to the Internet.

A total of 64% of households have some kind of computer, be it a desktop, laptop or both

The increase in penetration of the computer is mainly based on the growth in the number of laptops, rather than in the number of desktop computers. Laptops have continued to grow at a fast growth over the last few years. In 2008 around 1.2 million households had a laptop computer, with this device being found in 28.5% of all households, representing 5.5 pp more penetration. This marked upward trend ensures that one out of every five individuals, some 20.3% of the population aged 15 and over now have access to a laptop.

Together with computers used as an entertainment tool, present in the majority of households, there are a whole series of other digital leisure devices that are increasingly reinforcing the incorporation of households and the integration and participation of individuals in to the Information Society.

Figure 66.ICT equipment in the household 3Q 2008



Base: Total households *Source: Household Panel, ONTSI*

The digital video player (DVD) or in some cases the more recent Blue-Ray together recorded a penetration rate of nearly seven out of ten households (66.5%). A digital camera can be found in six out of ten households (58.2%), making it the third most popular ICT device after the DVD and computer.

The highest increase in penetration in the last year was recorded by the flat screen television, with an increase of around 10 pp to 24.4%, which means that there is one in every four households.

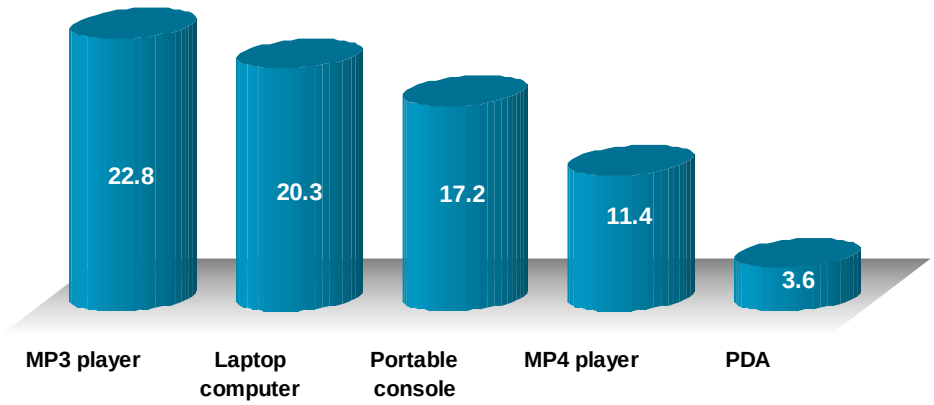
The video games console which started to show signs of growth in 2007, having remained stable at around 25% of all households in 2005 and 2006, started to

increase in 2008, with year-on-year growth of 1.6 pp, reaching 29% of all households in the third quarter. Video game consoles connected to the Internet are found in 5% of households, but is increasing.

Car GPS devices saw an increase of around 4 pp and are now owned by 13% of households, while connected cameras or webcams experienced a smaller increase, and were present in 18% of households last year.

Among personal equipment, despite the increase in the number of individuals who have an MP3 music player, this device lost penetration in the last year, having been replaced to a certain degree by the music and video player, or MP4, which saw sharp increases in absolute terms and in percentage of individuals, reaching 11.4%.

Figure 67. Personal equipment 2008 3Q



Base: Total people *Source: Household Panel, ONTSI*

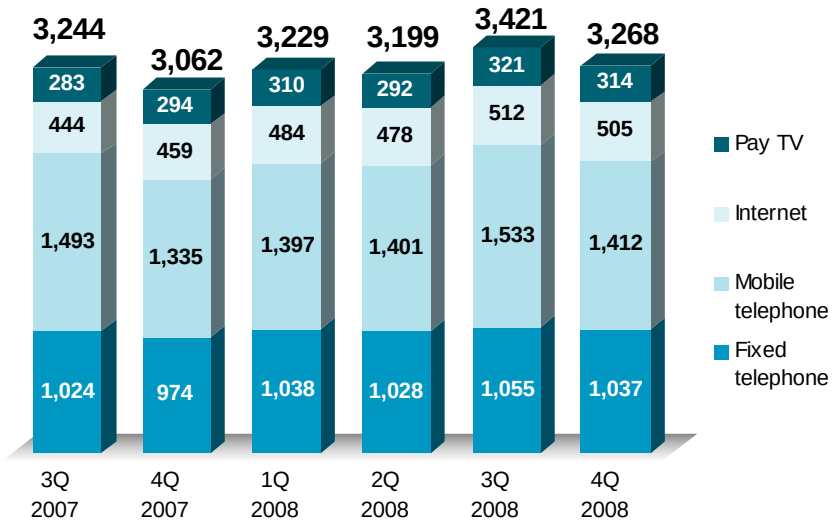
Lastly, a third type of video console, the portable video games console, experienced significant expansion in the last year, with 17.2% of the general population owning one, more than 3 pp higher than the same period in the previous year, equivalent to 2.7 million more individuals with this device in 2008.

7.2. ICT expenditure

Expenditure on ICT services in 2008 by Spanish households rose to €13.117 billion, a rise of 6.3% compared to the previous year.

The mobile telephony market was worth €5.743 billion in 2008. By volume, expenditure on fixed telephony totalled €4.158 billion while this figure was €1.979 and €1.237 billion for Internet and pay television respectively.

Figure 68. Total ICT expenditure on end services (€ millions)

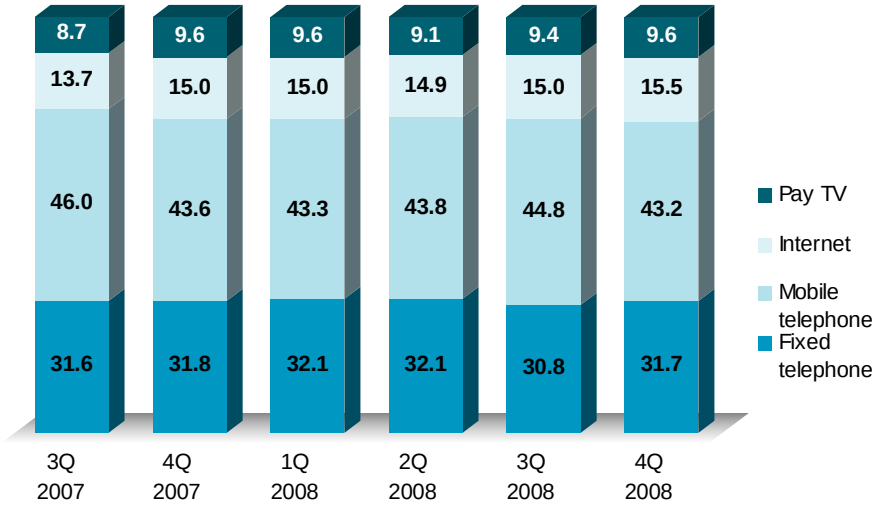


Source: Household Panel, ONTSI

Mobile telephony consumption in Spanish households grew by 6.6% in the last year to €5.743 billion and accounted for 43.8% of total expenditure on ICT services.

In fixed telephony, household expenditure was €4.158 billion, an increase of 3.7% compared to the same period the previous year. Fixed telephony therefore accounts for 31.7% of total expenditure.

Figure 69. Distribution of total ICT expenditure by service (%)



Source: Household Panel, ONTSI

The service with the highest relative growth was the Internet. With a year on year increase of 13.2% in expenditure worth nearly €2.0 billion (1.979), it held a 15.1% share of overall ICT services market.

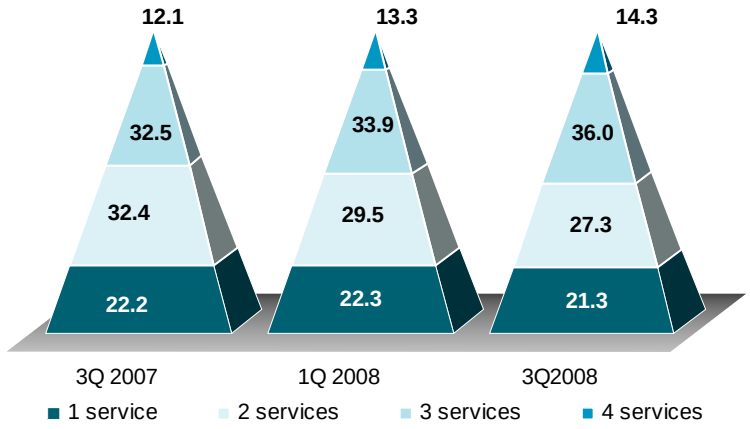
Pay television consumption totalled €1.237 billion in 2008 with a year-on-year increase of 3.4% accounting for 9.4% of total expenditure.

7.3. Pyramid according to number of ICT services contracted

The distribution of households according to the number of ICT services that they have (fixed telephony, mobile telephony, Internet and pay TV) reflects the important growth in the equipment present in Spanish households in the last few years.

In 2008 there was a predominance, which will probably last, in the proportion of households with three contracted services, which now includes the Internet among the services in a typical equipment profile. The most common profile of households with two services includes those with both fixed and mobile telephony, while the profile of households with four services includes Internet and pay television.

Figure 70. Households according to number of services contracted (%)



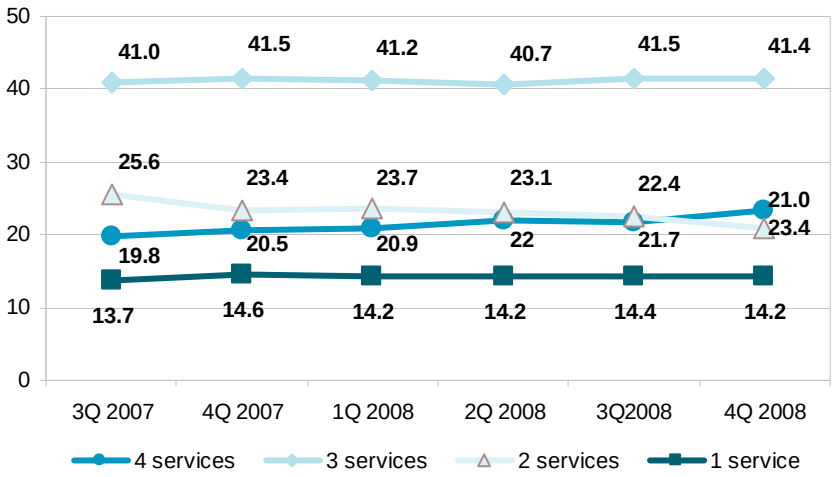
Base: Total households *Source: Household Panel, ONTSI*

The progressive increase in equipment in Spanish households can be seen more clearly in the increases in the third quarter of 2008, in which the percentage of better equipped households, those with 3 or 4 services, exceeded half (50.3%) of the total Spanish households.

Households with three ICT services accounted for 36% of the residential segment and 41.5% of total expenditure in the third quarter of 2008

In the third quarter of 2008, households with three ICT services accounted for 36% of the total (3.5 pp more than the previous year) and those with four represented 14.3% (up 2.2 pp in one year). These households accounted for 41.5% and 21.7% of total ICT expenditure respectively.

Figure 71.Distribution of total ICT expenditure according to number of services (%)



Source: Household Panel, ONTSI

The growing trend in the number of households with three or four services, reflected in their percentage of total ICT expenditure, shows how expenditure of households with four services exceeded that of households with two services in the fourth quarter of 2008, as well as how consumption among the group of households with three services was 19.1 pp higher than that of households with two contracted services.

7.4. Fixed telephony

Fixed telephony, the service with the longest history, was overtaken by mobile telephony in the residential segment at the beginning of 2006. However, since then up to 2008 it has remained stable quarter on quarter, with a penetration of around 83% of households, and has remained in second place behind mobile telephony.

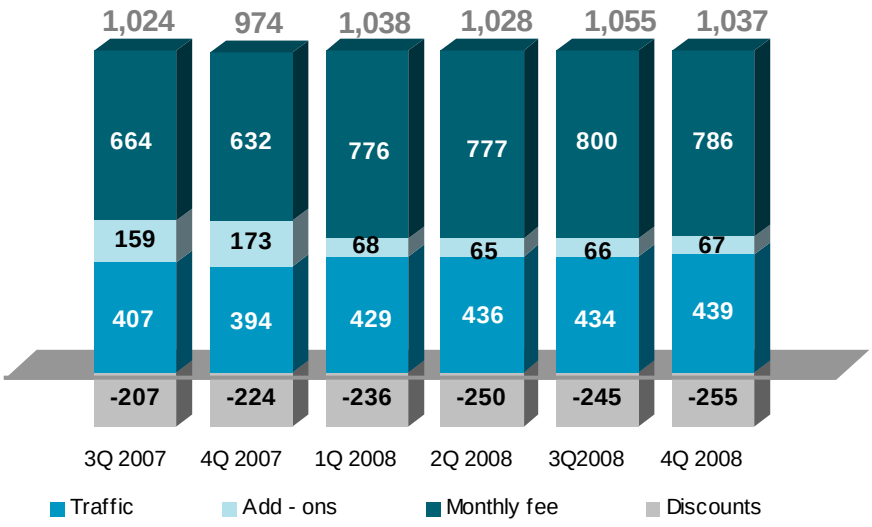
New marketing formulas, from vouchers to bundling or joint marketing with other services, lie behind this stable performance, together with the need for a basic telephony network for Internet connections in some parts of the country.

Fixed telephony expenditure in the residential market has remained steady with a year on year increase of 3.7% in 2008 compared to 2007.

However, although penetration and expenditure remain largely unchanged, year on year fixed telephony is losing its overall share of the total ICT service market, having dropped under 31% in 2008 for the first time, in the third quarter of that year.

Due to the change in the classification of different expenditure concepts, there has been a transfer of expenditure from vouchers to monthly fees since the beginning of 2008.

Figure 72. Distribution of total expenditure by concept (€ millions)



Source: Household Panel, ONTSI

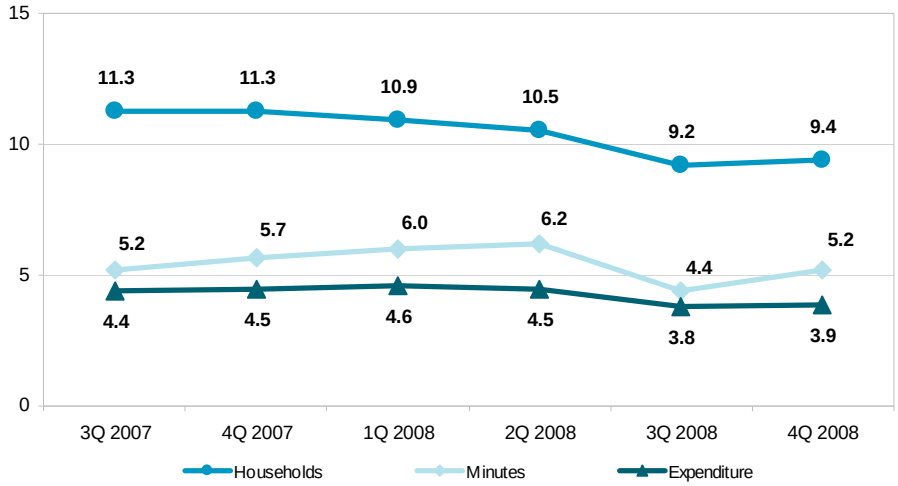
With regard to access type, the declining trend in the number of households with indirect access[18] and preselection (not having to dial the operator code) in fixed telephony was more notable in 2008, although the decline seemed to come to a halt in the last quarter of the year.

In the fourth quarter of 2008, around 1,247,000 households had indirect access, accounting for 9.4% of households with fixed telephony, compared to 11.3% a year earlier.

The successive decline in this area over the last few years has been partly due to the increase in direct cable access and mainly due to the fact that the operators who traditionally offered these indirect services have been moving their products and services and their own customers towards direct fixed telephony and Internet services, by totally unbundling the local loop.

[18] Indirect access is access to the telephone service by dialling an operator selection code prior to each call.

Figure 73. Households, minutes and expenditure on indirect access and preselection (%)



Source: Household Panel, ONTSI

In the last quarter studied, the fall in the number of households with indirect access led to percentages for minutes and expenditure of around 5% and 4%, respectively, of the total for this type of telephony. Direct access was worth €997 million in October-December 2008, representing 96.1% of the total residential fixed telephony consumption.

Table7: Households, minutes and expenditure per access type

percentage

		3Q 2007	4Q 2007	1Q 2008	2Q 2008	3Q2008	4Q 2008
HOUSEHOLDS	Indirect and preselected	11.3	11.3	10.9	10.5	9.2	9.4
	Direct*	88.7	88.7	89.1	89.5	90.8	90.6
MINUTES	Indirect and preselected	5.2	5.7	6.0	6.2	4.4	5.2
	Direct	94.8	94.3	94.0	93.8	95.6	94.8
EXPENDITURE	Indirect and preselected	4.4	4.5	4.6	4.5	3.8	3.9
	Direct	95.6	95.5	95.4	95.5	96.2	96.1

absolute

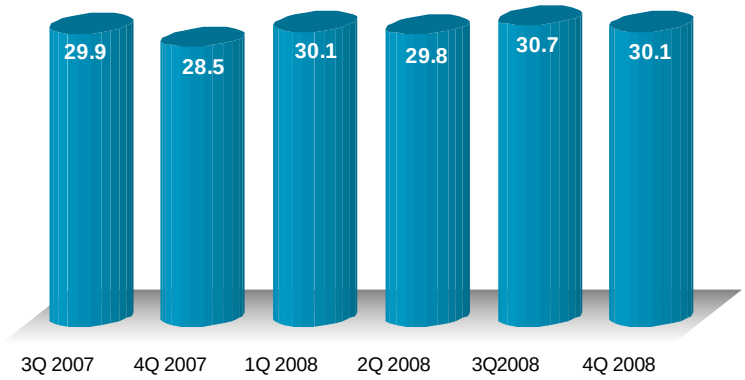
		3Q 2007	4Q 2007	1Q 2008	2Q 2008	3Q2008	4Q 2008
HOUSEHOLDS (thousands)	Indirect and preselected	1,499	1,496	1,455	1,403	1,225	1,247
	Direct*	13,241	13,242	11,878	11,930	12,081	12,059
MINUTES (millions)	Indirect and preselected	382	460	522	526	369	447
	Direct	7,027	7,557	8,201	8,006	8,013	8,065
EXPENDITURE (€ million)	Indirect and preselected	45	44	47	46	40	40
	Direct	979	930	990	983	1014	997

*** only households with direct access**

Source: Household Panel, ONTSI

Average household expenditure on fixed telephony in the last quarter analysed was €30.10 per month (including VAT), and the average number of minutes per household and month in 2008 was around 214 minutes, with year on year increases in the total number of minutes consumed of 5%, 12%, 13% and 6%, respectively, in each of the four quarters.

Figure 74. Average monthly expenditure per household on fixed telephony (Euros, including VAT)



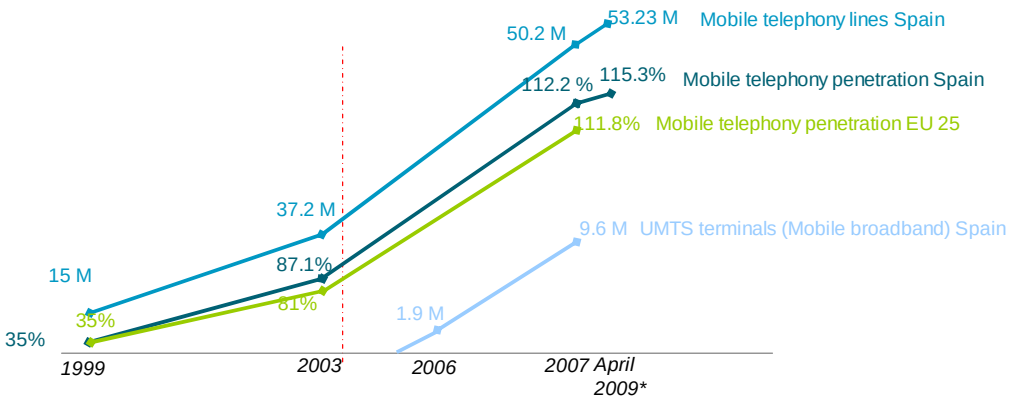
Source: Household Panel, ONTSI

7.5. Mobile telephony

Mobile telephony has established itself as a universal service among the Spanish population and is still growing, increasing by 6% in little over a year. In April 2009, Spain had more than 53 million mobile phone lines.

Mobile telephony exceeds 53 million mobile phone lines

Figure 75. Number of mobile telephony customers and penetration (millions and %)



*** lines to telemetry and/or telecontrol (2M2) services are included to allow comparison with the European Union**

Source: Report on the development of the Information Society in Spain SETSI (State Secretariat for Telecommunications and Information Society)

In the third quarter of 2008, Internet access via a mobile phone accounted for 2.3% of all connected households.

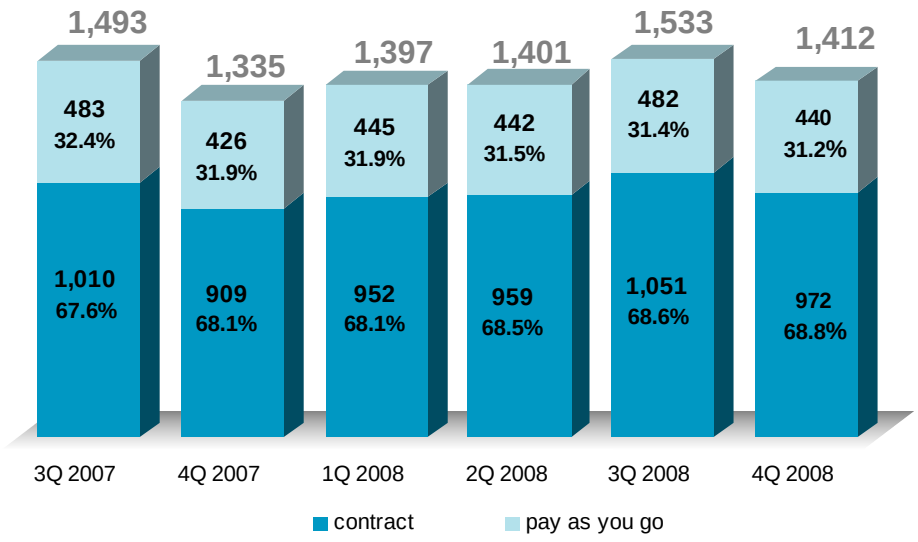
Also, personal use of mobile telephones among individuals this year once again dominates professional use, with practically 80% of mobile phone numbers contracted for personal use.

With regard to the age of mobile handsets, just over a third of the population over 15 years of age who use this service have a mobile phone which is no more than one year old, a similar percentage to the number of individuals who have had their handset for more than two years.

Expenditure

In the third quarter of 2008 consumption of mobile telephony services exceeded €1.5 billion for the first time, with an accumulated figure for the year of €5.743 billion.

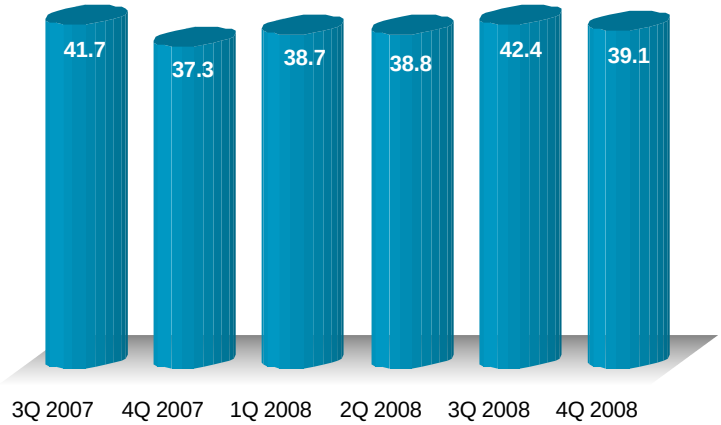
Figure 76. Total expenditure on mobile telephony by payment method (€ millions)



Source: Household Panel, ONTSI

Analysing quarterly expenditure on mobile telephony in 2008 shows that around 68%–69% is made through contracts and the remaining 31%-32% is made through pay as you go. Total expenditure for the year has grown by 6.6% year-on-year.

Figure 77. Average monthly expenditure per household on mobile telephony (Euros, including VAT)



Source: Household Panel, ONTSI

Average monthly consumption for mobile telephony is around €39 per month per household (including VAT), except in the summer months during the third quarter of the year, in which average expenditure rises to €42 per month.

Uses

The camera is in first place among services offered by mobile telephony, since it is the service found on the highest number of handsets (73.8%), the most requested by users (44.4%) and the most widely used by them (54.3%).

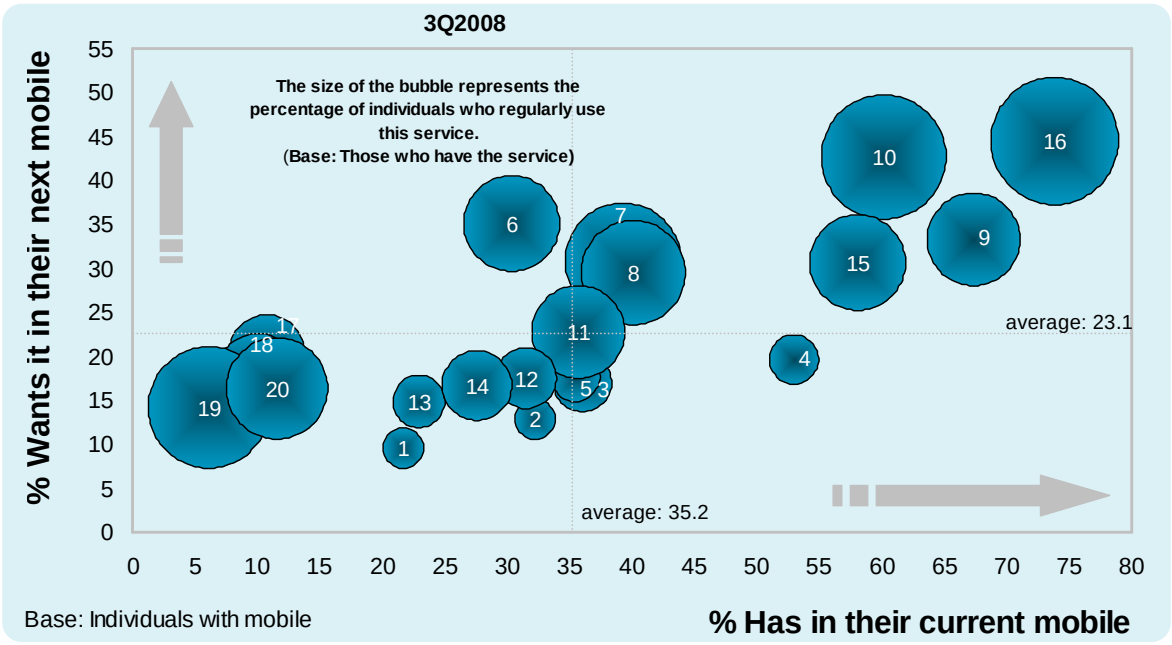
Also worth noting is the fact that 67.4% of mobile telephones have a multimedia messaging service (MMS), although only a little over one third of users want this on their handset and only around one third use it.

Continuing in hierarchical order, Bluetooth is the third most popular service on mobile telephones, and just over half of users (52.5%), say they use it.

With regard to the MP3 service, although it is not one of the most widely available services on mobile handsets (39.5%) it is however one of the most widely used among those who have it (45.5%).

Also worth mentioning is the use of the touch screen which, although only available on 6.1% of mobile telephones, is used by 51.4% of users who say they have one.

Figure 78. Current mobile telephone services compared to uses of users' next mobile (%)

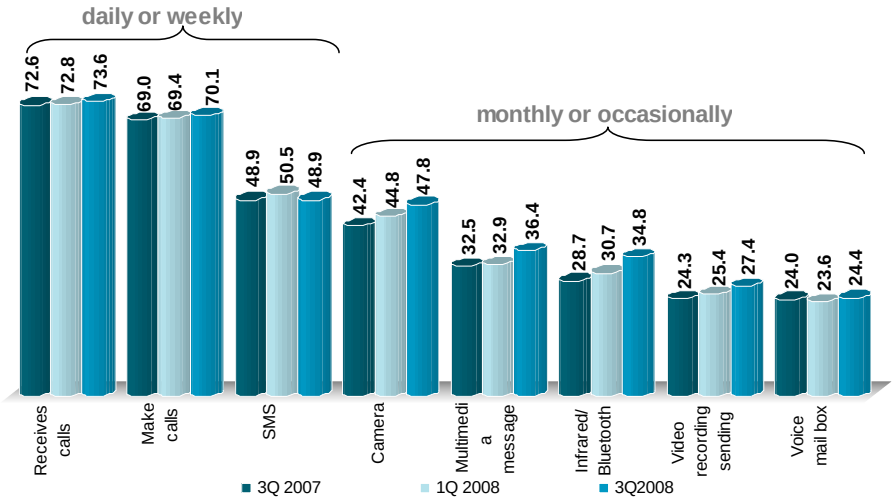


MOBILE TERMINAL SERVICES									
1	Chat	5	Electronic mail access	9	MMS	13	Video calls	17	GPS
2	WAP Browsing	6	Hands-free car kit	10	Bluetooth	14	GPRS data connection	18	WiFi
3	Voice dialling	7	MP3	11	Infrared	15	Video recording	19	Touch screen
4	Internet access	8	FM Radio	12	Video messages	16	Camera	20	Electronic agenda

Base: Individuals with mobile telephones *Source: Household Panel, ONTSI*

The main uses of mobile telephones, such as receiving and making calls, continue to rise, reaching penetrations of 73.6% and 70.1% respectively.

Figure 79. Frequency of use of the main mobile telephone services (%)



Base: Individuals with mobile telephones *Source: Household Panel, ONTSI*

With regard to another basic mobile telephony service, the sending and/or receiving of SMS, practically half of all mobile telephone users make use of this service either daily or weekly.

In the less frequent uses of mobile telephony, that is, monthly or sporadic use, services such as the camera and the transmission of data via Bluetooth or infrared are notable for growth exceeding 5 pp year-on-year.

7.6. Internet

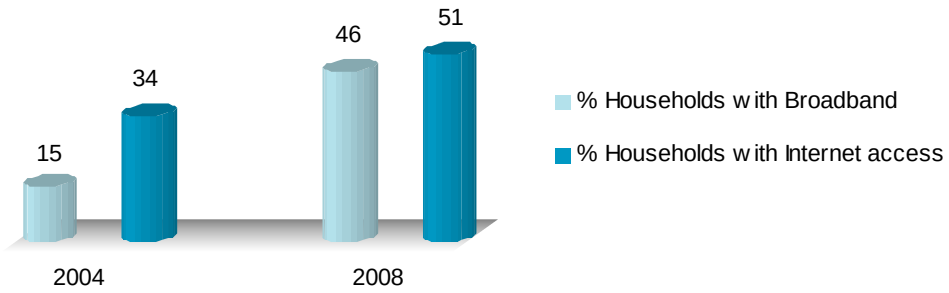
The process of expanding the Internet, the core technology of information society, among the Spanish population is steadily advancing. In 2008 more than half of all households had an Internet connection, mostly broadband, and had used the Internet at some point or used it regularly at levels notably similar in some respects, and greater in others, to those of our neighbouring European Union countries.

Household and individual access

More than eight million households, 51%, were connected to the Internet in 2008. Broadband connections reached 46% of households, close to the EU average (49%).

Broadband connections reach 46%

Figure 80. Percentage of homes with Internet access and broadband in Spain (%)

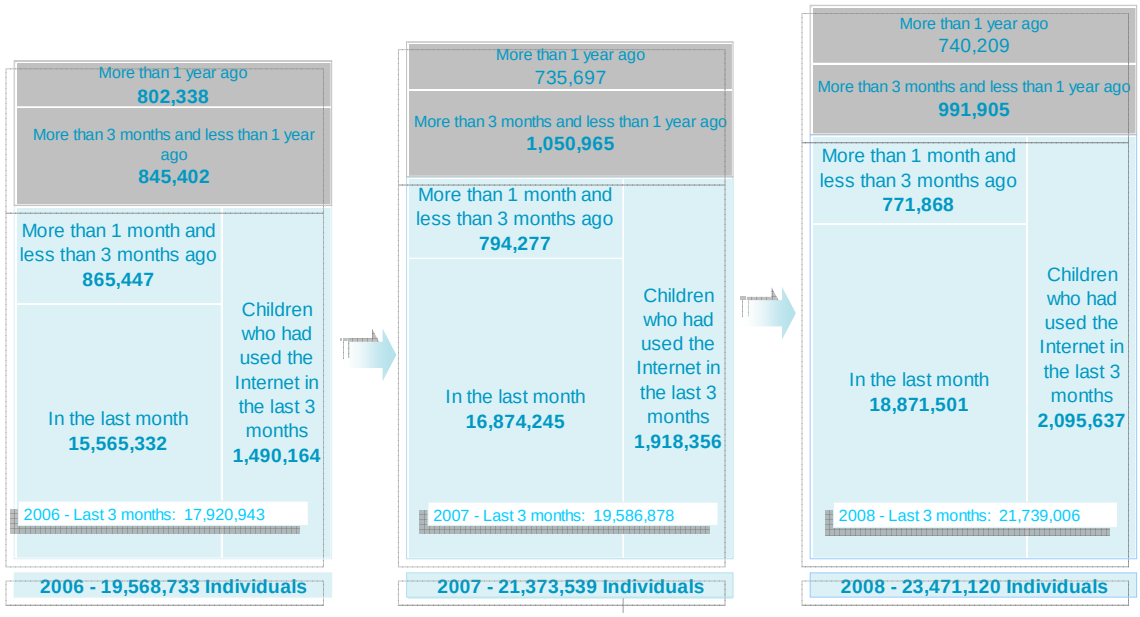


Source: Report on Information Society Development. SETSI (State Secretariat for Telecommunications and Information Society)

In 2008, the number of people aged ten or above that had used the Internet on some occasion, was almost 23.5 million, an increase of 10% compared to the previous year, exceeding the increase recorded in 2007 over 2006 of 9.2%.

Consequently, the year on year rate of growth was sustained at around 9% or 10%, even showing a slight upward trend over this period.

Figure 81. Number of Internet users aged ten or above according to last use



Base: Individuals aged 10 and over

Source: ONTSI using data from the Spanish National Institute for Statistics (INE)

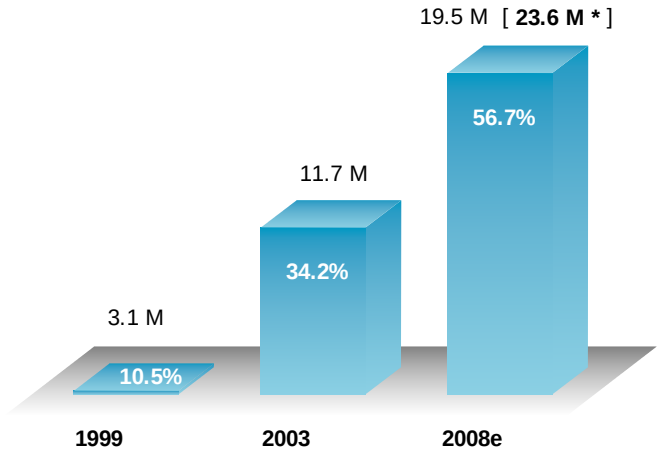
The sharp year on year increase in the Internet user population mainly corresponds to daily use, that is, those individuals who use the Internet at least five days per week, among which there has been an increase of 3.5 million individuals, taking into account the population aged 16 to 74[19].

This means an increase in frequency of use and a trend towards more habitual or less sporadic use.

If we take individuals aged 15 and over as the reference population, almost six out of ten (56.7%) have already accessed the Internet, equivalent to 19.5 million users.

[19]The definition of reference population as individuals aged between 16 and 74 responds to European Union criteria for Eurostat statistical operations, as well as those of the various statistical offices of Member States, for comparative purposes specifically related to Information Society issues.

Figure 82. Percentage and number of Internet users



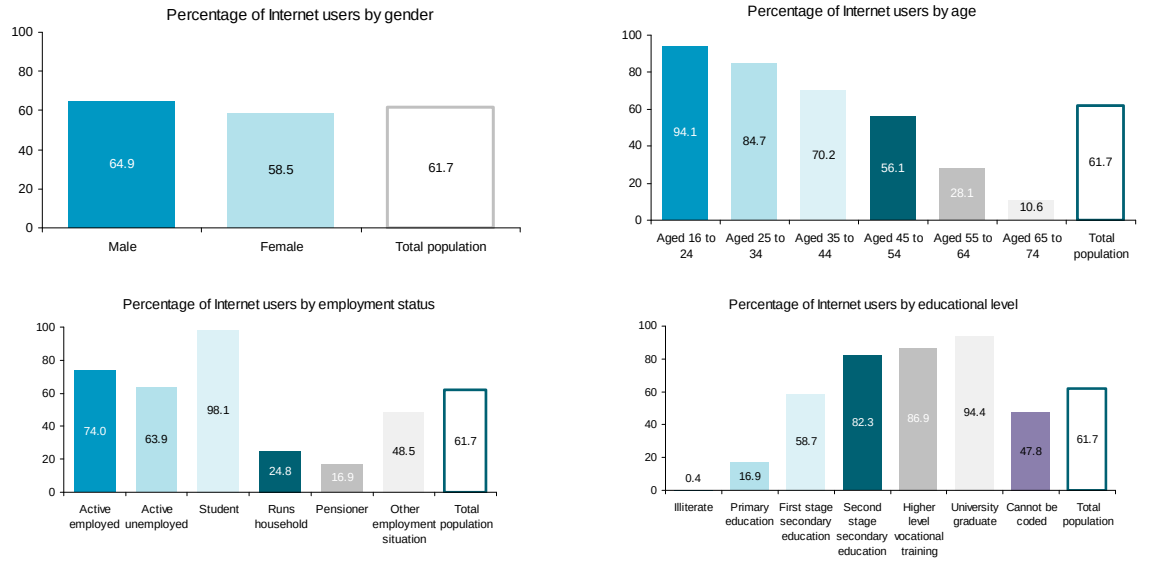
(*) including young people aged 10 to 15 years
e: estimated
Base: individuals aged 15 and over

Source: Report on Information Society Development. SETSI (State Secretariat for Telecommunications and Information Society)

With regard to the socio-demographic analysis of Internet users, a total of 65% of men aged 16 to 74 have accessed the Internet on some occasion, while the percentage of women is 58.5%.

Age is the variable with the greatest differences in the percentage of Internet users. Young people aged 16 to 24 and those aged 25 to 34 are the groups with the highest penetration rates in Internet use, with figures of 94% and 85% respectively.

Figure 83. Use of Internet according to socio-demographic variables 2008 (%)



Base: Individuals aged between 16 and 74

Source: INE (Spanish Statistics Institute)

Based on employment status and undoubtedly related to age, students are the population group with the highest percentage of Internet users and just over 98% have accessed the Internet on some occasion.

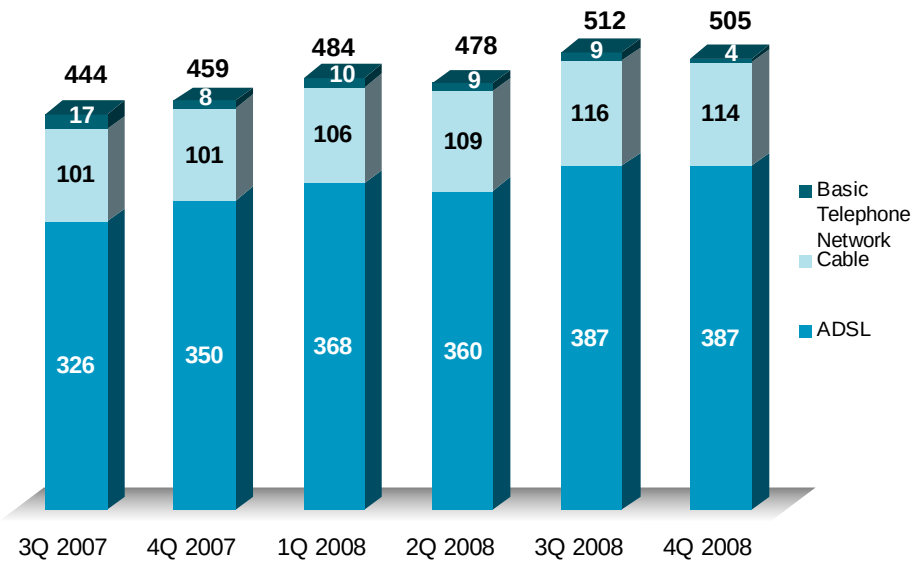
The level of completed studies leads to a greater or lesser use of the Internet, with the highest percentage of Internet users among individuals with higher levels of education.

The socio-demographic variables studied therefore highlight greater Internet user penetration in the following population groups: male, aged under 45, in active employment and with university or second stage secondary education.

Expenditure on Internet

Expenditure levels on Internet technology continue to rise and in 2008 reached €1.979 billion, after excluding discounts from cable operators, equivalent to a 13.2% increase compared to the previous year.

Figure 84. Total expenditure on Internet technology (€ millions)



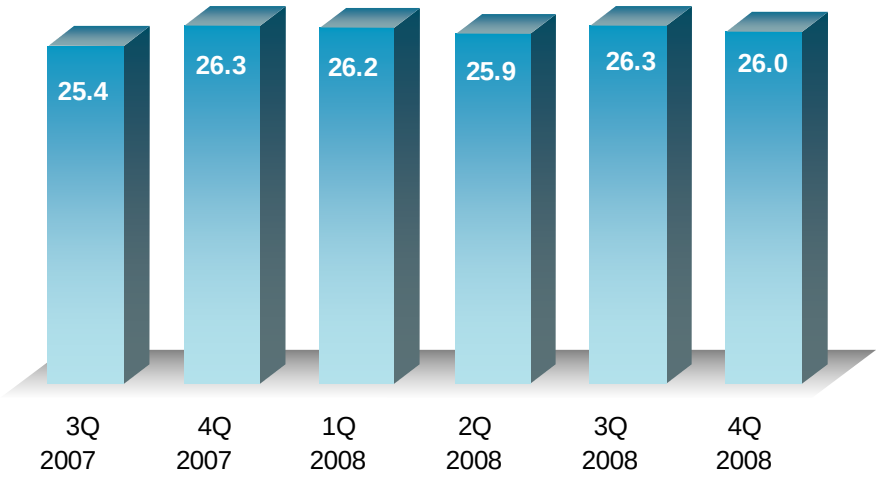
Note: Expenditure on cable technology includes discounts

Source: Household Panel, ONTSI

In terms of the distribution of total expenditure according to access technologies, once again both ADSL connections and cable connections gained ground in 2008.

Around 76% of expenditure on Internet corresponds to ADSL technology, while the proportion of expenditure on cable stands at around 23%. Both of these have grown compared to the same period for the previous year, to the detriment of expenditure via the basic telephone network with a residual level of around 1%.

Figure 85. Average monthly expenditure per household on Internet (Euros, including VAT)



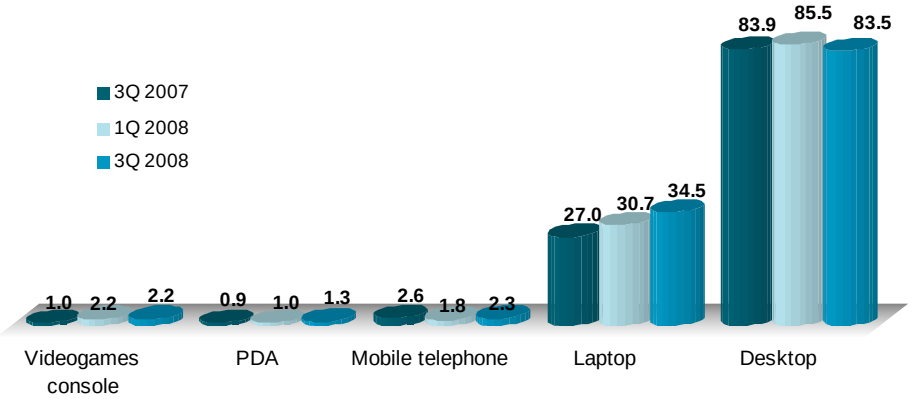
Source: Household Panel, ONTSI

At the end of 2008 the average monthly household expenditure on Internet, for the fourth quarter of the year, was €26, including VAT. This is €0.30 less than for the same period the previous year. By contrast, the first, second and third quarters of 2008 are €0.80, €0.20 and €0.90 higher, respectively, than the same periods in 2007.

Device and place of Internet access

The desktop computer was used as the Internet access device in 83.5% of connected households, while 34.5% of households with Internet access connected via a laptop computer. All other devices recorded minor percentages for Internet access, both mobile telephones as well as PDAs and videogame consoles.

Figure 86. Internet access device (%)



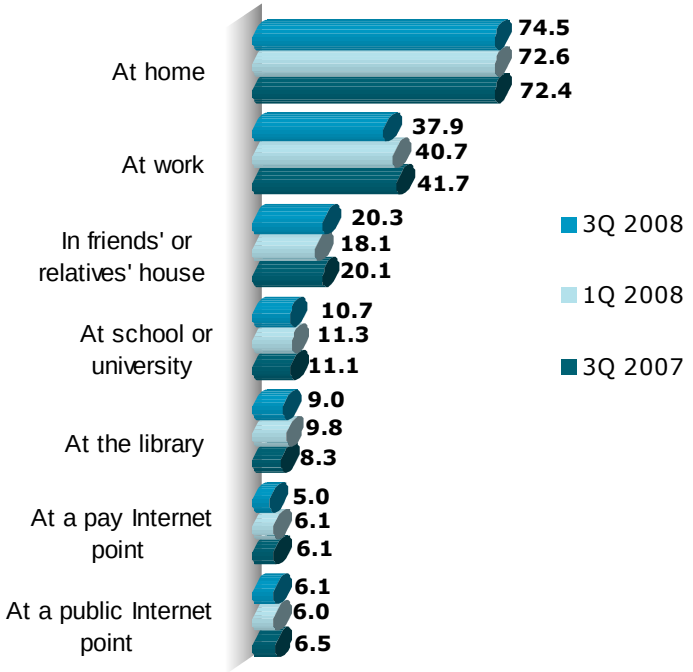
Base: Homes with Internet

Source: Household Panel, ONTSI

Although the dominance of the choice of desktop computers for accessing the Internet has remained practically unchanged, access via laptop computers has grown steadily, with a highly significant 7 pp increase year on year, rising from 20.7% of households in the third quarter of 2006 to 27% for the same period in 2007 and 34.5% of households in 2008.

As regards the place of access, the Internet continues to grow as a multifunctional tool or device with the home being the most important place of use for 74.5% of individuals, a 2 pp increase compared to the same period the previous year.

Figure 87. Internet access place (%)



Base: Internet Users

Source: Household Panel, ONTSI

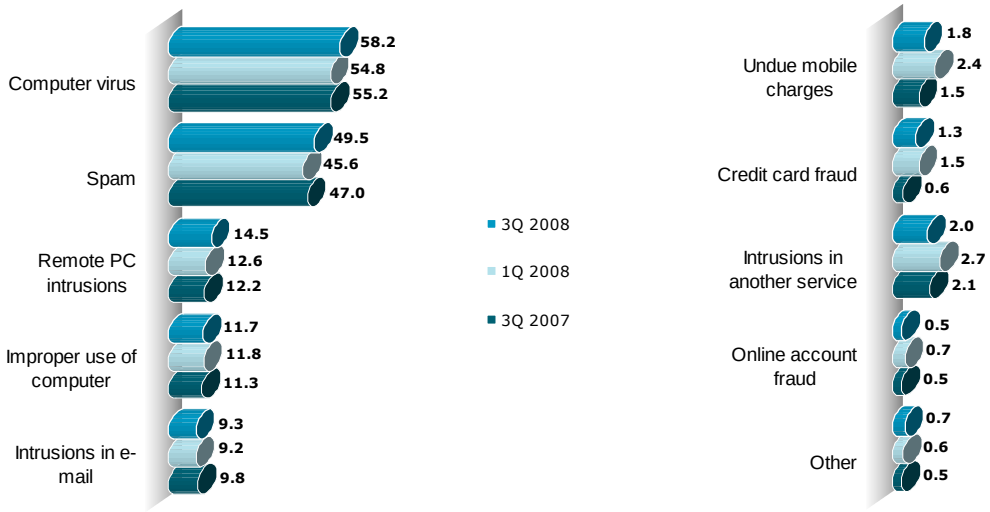
ICT security

Following a two year decline in the incidence of the most common ICT security problems, the incidence of computer viruses and spam both increased in 2008 among Internet users with habitual use (those who have used the Internet in the last month, either daily, weekly or monthly).

Computer viruses affected 58.2% of habitual Internet users and 49.5% were affected by spam, which grew by 3 pp and 2.5 pp respectively between the third quarter of 2007 and the same period in 2008.

Taken together, a relatively generalised recovery can be observed in security problems experienced by individual users in the last year, between 2007 and the third quarter of 2008, with the exception of intrusions into services such as e-mail and online account fraud, which, in the case of the former has decreased and in the case of the latter has remained unchanged at minimal or residual levels.

Figure 88. Internet users who have experienced security problems (%)

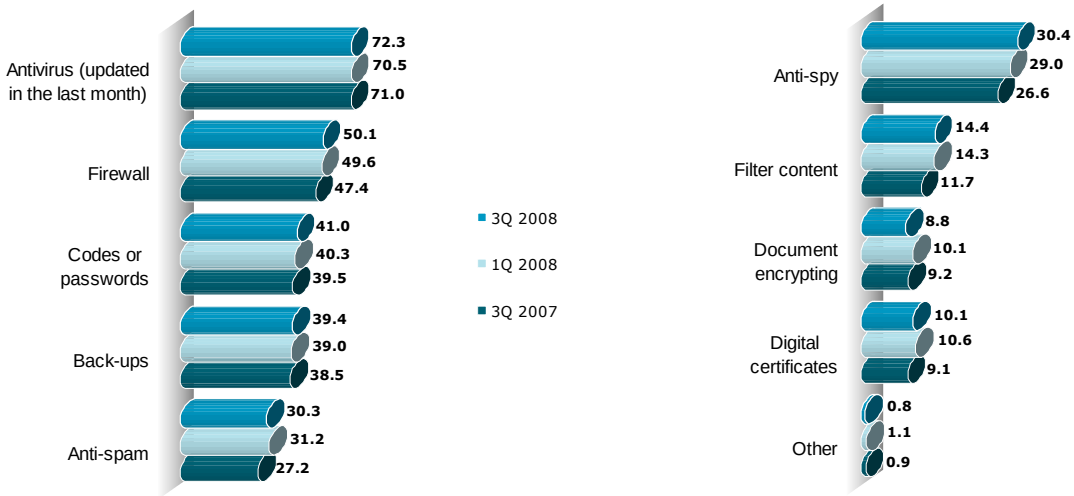


Base: Internet users who have used the Internet in the last month

Source: Household Panel, ONTSI

As regards security precautions, the most widely used is the antivirus and its monthly update, adopted by around 72.3% of habitual Internet users. This is followed by the firewall, which has once again experienced a sharp growth in implementation rates, rising from 47.4% of Internet users in the last month of the third quarter of 2007 to 50.1% in the same period in 2008.

Figure 89. Internet users who have taken security precautions (%)



Base: Internet users who have used the Internet in the last month

Source: Household Panel, ONTSI

Anti-spy programmes, anti-spam programmes and content filters are other types of security precautions that registered a higher year on year growth in the third quarter of 2008, with the first two being used by around 30% of users and content filters used by almost 15% of Internet users.

Uses of the Internet

The main uses of the Internet include communication services, with e-mail being the most frequent, used in the last week by 63% of Internet users and with considerable year on year growth, and instant messaging used by around 34%.

Table8: Main uses of the Internet and use during the last week (%)

	1Q 2007	3Q 2007	1Q 2008	3Q 2008	Annual trend
E-mail	61.9	61.1	64.0	63.0	↑
Search engine	58.1	58.2	61.9	61.3	↑
News browsing	34.7	37.6	41.2	40.4	↑
Instant messaging	33.8	33.9	34.8	34.0	↔
Account enquiries	18.8	22.1	23.8	23.0	↑
P2P downloads	23.5	23.5	23.6	21.8	↓
Music downloads	22.6	20.8	20.4	19.3	↓
Video downloads	18.2	16.5	17.4	16.2	↔
Other downloads	20.7	16.7	18.5	15.9	↓
Forums	12.6	13.1	12.3	12.2	↓
Network games	7.9	9.0	9.6	11.4	↑
Chat	10.4	11.6	12.4	11.2	↓
Study aid	19.0	10.2	17.5	10.2	↔
Banking and financial operations	7.7	9.1	8.4	9.4	↔
Visiting other administrations	12.1	10.5	11.3	8.5	↓
Reading blogs	5.1	7.0	7.5	8.1	↑
Visiting town/city council websites	8.7	6.9	7.5	6.7	↔
FTP transfers	5.1	3.6	4.6	4.8	↑
Visiting Web 2.0 pages	-	-	3.6	3.4	↔ *
Videoconference	4.8	4.7	5.2	3.3	↓
Telephone calls	4.5	4.0	3.8	3.3	↓
Purchasing holidays, tickets	3.7	3.7	3.3	3.3	↓
Training courses	5.0	3.1	5.1	3.2	↔
Writing blogs	2.7	3.0	3.8	3.2	↔
Other Purchases	1.9	2.6	2.9	2.5	↔
Teleworking	-	-	-	2.2	-
Purchasing books, music, films	1.8	1.6	1.8	2.0	↑
Purchasing tickets	2.4	2.4	2.2	1.9	↓

Base: Internet users aged 15 and over
* 6 month trend

Source: Household Panel, ONTSI

Equally, the search for different types of information via search engines (the most popular and widely used in Spain being Google), recorded a trend for year on year growth and was carried out at levels comparable to e-mail use, having been used during the last week by around 61.3% of Internet users. Also growing is the trend for other information enquiries such as news enquiries, carried out in the last week by 40.4% of Internet users in the third quarter of 2008.

These two activities (searches and news enquiries) are those most on the increase among those included in the research, with the sharpest rises in the number of Internet users who have performed these activities in the last week.

In contrast, file downloading decreased, especially downloads between individuals or P2P (Peer to Peer) and music downloads.

However, the different kinds of downloading, whether files shared between individuals or from the websites of providers, remained at levels for use in the last week similar to those for the previous year, ranging between 16% and 22% of users.

The greater tendency towards the use of streaming or constant flow data transmission without subsequent storage, could be the underlying reason for the stabilisation or reduction in file downloading.

Other activities which recorded significant increases in the percentage of users in the last year are, in ascending order, games on the Internet, FTP transmission, which had been declining in recent years, reading blogs (which will be looked at in greater detail further on), account enquiries, and to a lesser extent, banking and financial operations and B2C purchases, specifically books, music and films.

Ownership of e-mail address

In relation to e-mail, the proportion of individuals with e-mail addresses is very high. If we take into account those who have used the Internet on at least one occasion, 77.4% of people have an e-mail address, a percentage which increases to 90.8% if we consider those who have accessed the Internet in the last week. There is also an overwhelming predominance of personal addresses over work addresses.

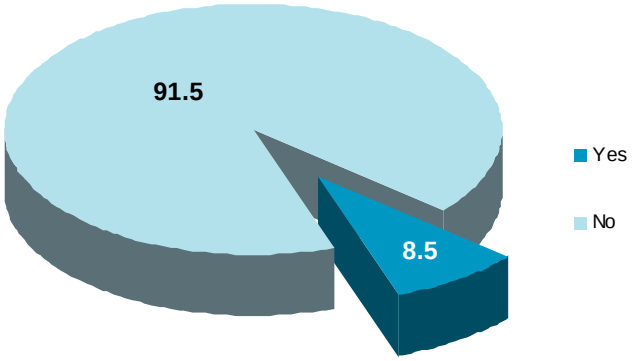
The percentage of Internet users who still did not have an e-mail address in the third quarter of 2008 was 22.6%, compared to 27.8% two years earlier. This figure is 9.2% for Internet users who accessed the Internet in the last week.

Ownership, updating and reading of blogs

Among the various provisions of what is known as the social web or Web 2.0, blogs are probably the most comprehensive platform for creating user content.

In the third quarter of 2008 in Spain, more than 1.5 million people had their own blog, equivalent to 8.5% of intensive Internet users (those who accessed the Internet in the last week).

Figure 90. Ownership of personal blog among intensive Internet users. 2008 3Q (%)



Base: Internet users in the last week

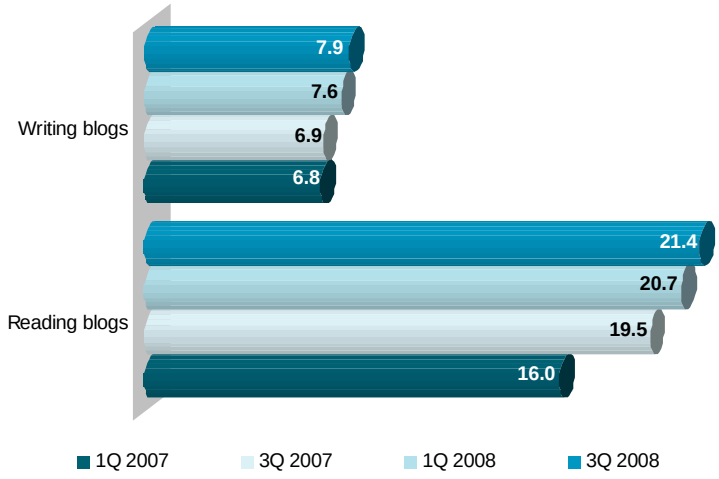
Source: Household Panel, ONTSI

In 2008, as in 2007, both reading other people's blogs and writing or updating personal blogs grew in popularity in terms of the number of people who carried out these activities.

In the case of writing or updating a blog, 7.9% of intensive Internet users carried out this activity in the last three months, 1 pp more than in the same period for the previous year.

A total of 21.4% of Internet users with access in the last week had read or viewed a blog at least once in the three months prior to the survey, an increase of almost 2 pp on the previous year.

Figure 91. Updating and/or reading blogs in the last three months among intensive Internet users (%)



Base: Internet users in the last week
Note: Activities performed during the last three months

Source: Household Panel, ONTSI

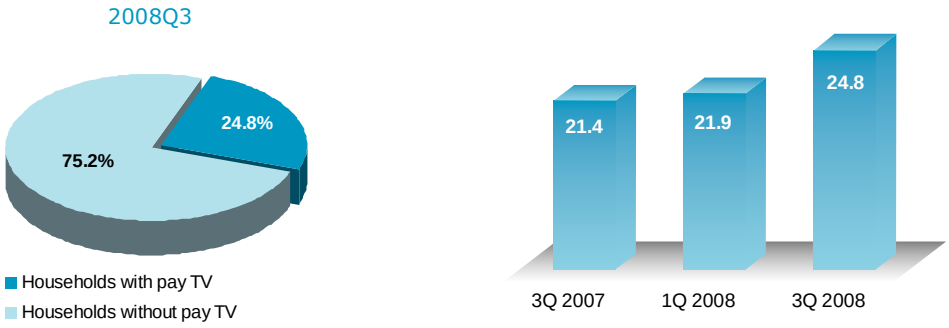
7.7. Audiovisual

In the audiovisual sector 2008 was a year of unprecedented growth compared to recent years for both pay TV and digital terrestrial television (DTT). This is particularly relevant due to the proximity to the "analogue switch-off" in 2010 and due to the change in the trend towards the revival of a market that is closely linked to digital leisure and is fundamental to the development of the Information Society in terms of content.

Pay TV

In 2008, the pay TV market experienced a boost with strong penetration among households after several years of stability (2005 and 2006) followed by growth that began in 2007.

Figure 92. Households with pay TV (%)



Base: Total households

Source: Household Panel, ONTSI

One out of every four households has pay TV

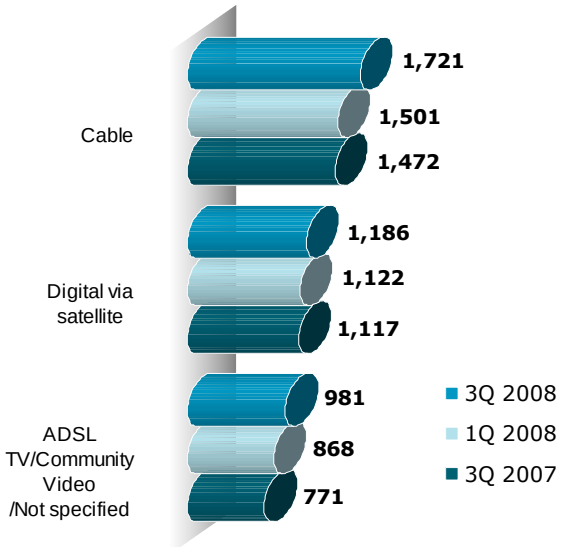
In the third quarter of 2008 the growing penetration of pay TV reached 24.8% of households, equivalent to nearly four million.

The growth recorded in the last year is approximately 500,000 households, representing a relative increase of 16% year-on-year in the third quarter 2008 and, in absolute terms, of 3.4 pp compared to the third quarter of 2007.

One year ago it was ADSL reception which largely drove this market. The sharp rise in 2008 was marked by a generalised growth among the different technologies, without exception.

The higher growth in absolute numbers in 2008 was recorded in cable, the most widespread technology, which grew by 250,000 households, representing 17% in relative terms, while ADSL technology grew 27% at just over 200,000 new households that received this service. Digital satellite reception also showed similar vitality, though growth in this segment was a little more moderate.

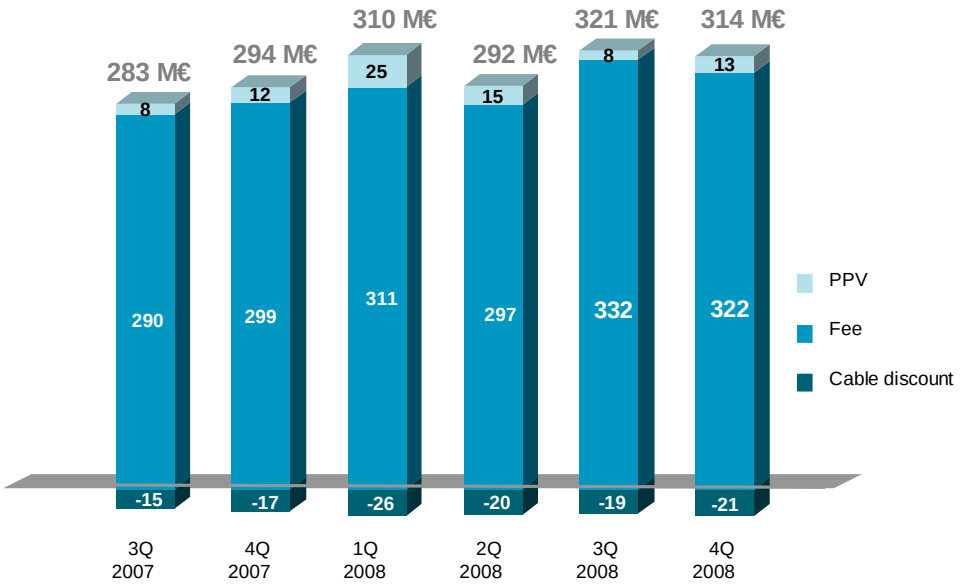
Figure 93. Households with pay TV by technology type (thousands)



Source: Household Panel, ONTSI

Accumulated expenditure in this market in the last year, from January to September 2008, totalled €1.237 billion which, compared to the €1.196 billion of the previous year represents a modest increase of 3.4%, driven by fees and consumption through purchasing pay per view (PPV) events or products.

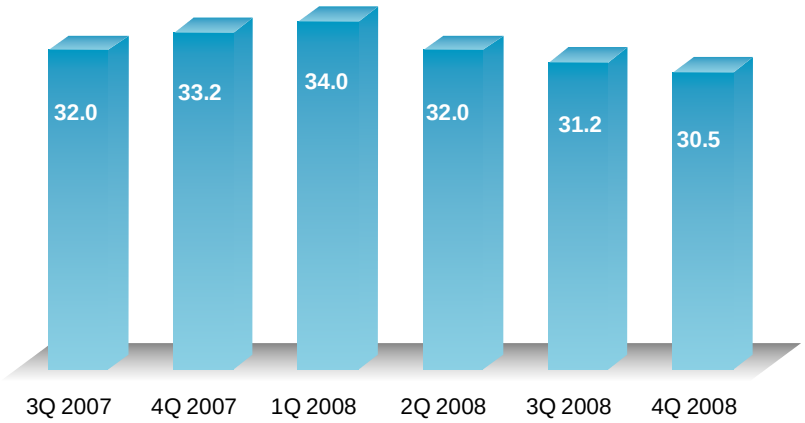
Figure 94. Total expenditure on pay TV per household (€ millions)



Source: Household Panel, ONTSI

Average monthly consumption per household recorded consecutive declines during the four quarters of 2008 compared to the same periods the previous year, specifically €0.20 less in the first quarter, nearly €1.00 in the two following quarters (€0.90 and €0.80 respectively) and, highest of all, €2.70 in Q3 2008 Q3, equivalent to €30.50/month per household during this last period.

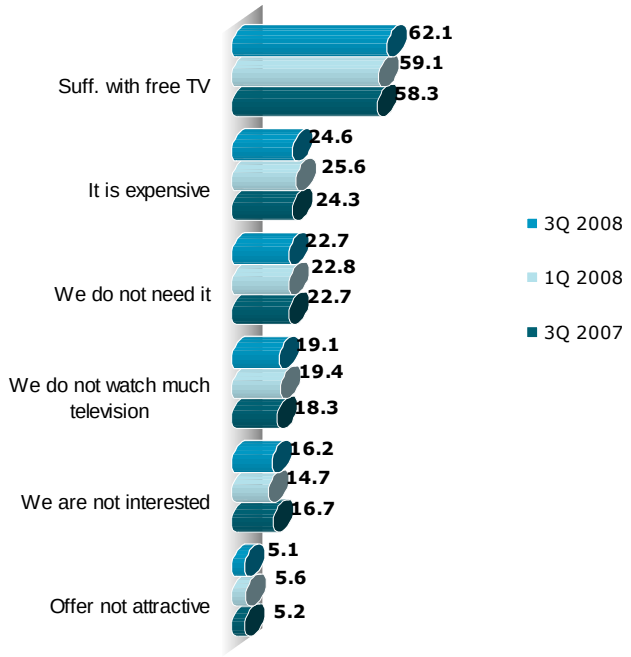
Figure 95. Average monthly expenditure on pay TV per household (Euros, including VAT)



Source: Household Panel, ONTSI

With regard to the motivating reasons of households without pay TV, these households are surveyed every six months with regard to their reasons for not adopting this offer of entertainment and content.

Figure 96. Reasons for not having pay TV (%)



Base: Households that do not have pay TV

Source: Household Panel, ONTSI

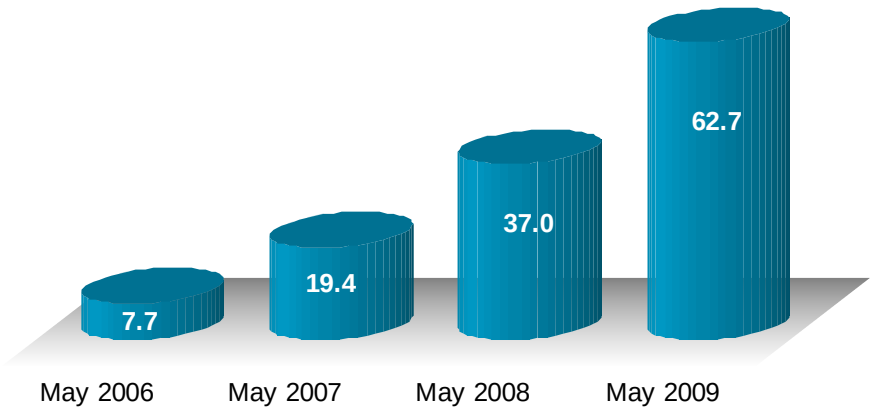
In the third quarter of 2008, some 62.1% of households without pay TV stated that the free television they currently received was sufficient. One quarter of households declared that they did not have it because it was too expensive, while one fifth simply considered that they did not need it.

Digital Terrestrial Television (DTT)

According to Impulsa TDT, the Association for the Implementation and Development of Digital Terrestrial Television in Spain, the percentage of Spanish households with access to DTT reached 62.7% in May 2009, progressively approaching the figure for DTT coverage of the population, which is almost universal in Spain, exceeding 95% of citizens, the highest percentage in the world.

The sharp growth recorded in 2009 in households with access compared to the same period in previous years, was around 26 pp compared to 2008 and 43 pp compared to 2007.

Figure 97. Households with access to DTT (%)



Base: Total households

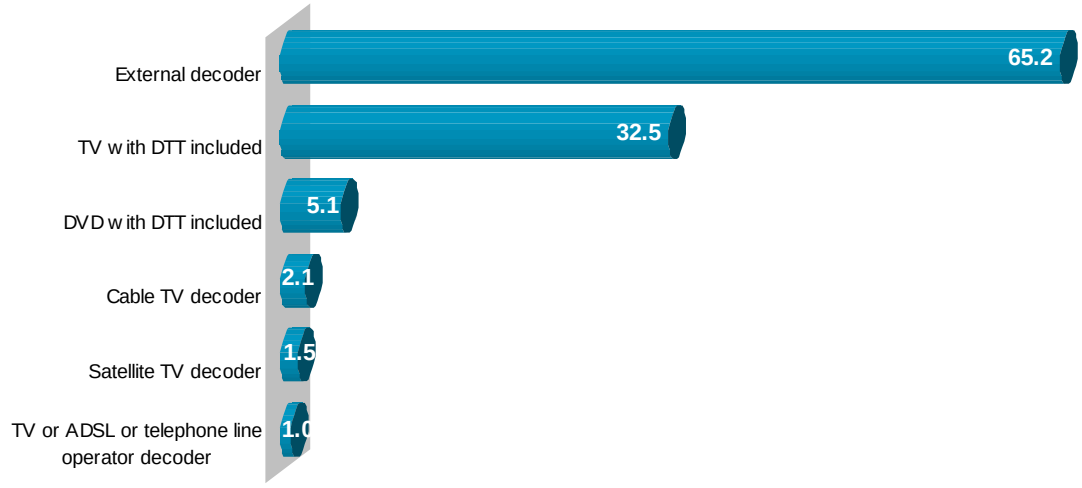
Source: IMPULSA TDT

A total of 62.7% of households had access to DTT in May 2009

With regard to the method for receiving the DTT signal, according to estimates by the INE (Spanish Statistics Institute) in the "Survey on equipment and use of information and communication technologies in households", 32.5% received the signal via a television set with DTT, while 5% of households used DVD with DTT.

However, although a high percentage of television renewals involve upgrades to flat-screen models with DTT, at present the most frequent method of receiving these digital channels continues to be via an external decoder, with two out of every three households receiving DTT signal in this way.

Figure 98. DTT signal reception method. 2008 Q3 (%)



Base: Households that receive DTT signal

Source: INE (Spanish Statistics Institute)

7.8. Evaluation and attitudes towards new technologies

The positive global attitude towards new technologies recorded in previous years among the population as a whole barely changed on a year-to-year basis, recording only very minor variations that significantly reinforced this favourable attitude, including in 2008.

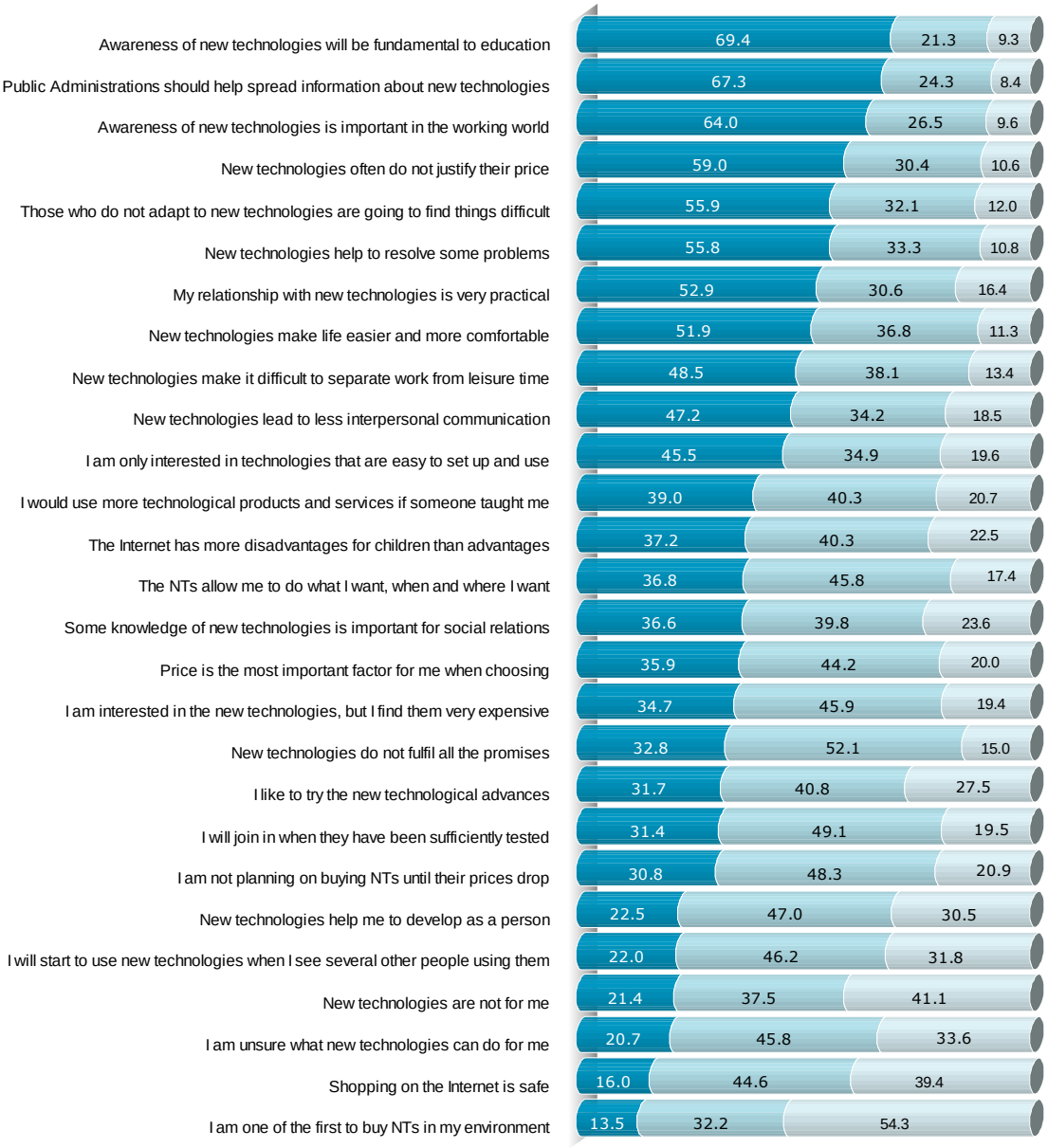
Spaniards' attitude towards ICTs is examined in the survey with a household panel sample carried out by Red.es, through a group of twenty-seven items which individuals rate their degree of agreement on a five-point scale (from 1 to 5, where 1 means "totally disagree" and 5 "totally agree").

As in previous years, in 2008 there was little variation in the degree of agreement about the utility and the importance of new technologies, being the two factors with the highest average values.

The aspects that achieved the highest level of agreement refer to the fundamental role of new technologies in education and the workplace, as well as the support that these technologies provide for solving common problems and their capacity for making life easier and more comfortable.

The importance of these technologies to social integration and individual and collective success is highly valued, which is also reflected in the need for public administrations to contribute to raising awareness about them and disseminating them.

Figure 99. Frequency distribution of attitude items towards new technologies 2008 Q3 (%)



Base: Total individuals

Source: Household Panel, ONTSI

Overall, the most outstanding feature of 2008 in terms of year on year variations in attitudes was the increase in the importance attributed to the use of the new technologies for social relationships. This is the aspect that recorded the highest growth in the population as a whole, in a year that witnessed the genuine rise of the social networks.

Table 9. Utility and importance of new technologies

	Average values (1 totally disagree- 5 totally agree)	3Q 2007	1Q 2008	3Q2008
Utility	Awareness of new technologies will be fundamental in education	3.84	3.88	3.82
	Awareness of new technologies is important in the working world	3.76	3.83	3.73
	New technologies help to solve some problems	3.51	3.50	3.51
	New technologies make life easier and more comfortable	3.47	3.52	3.48
Importance	Public administrations should help to disseminate new technologies	3.81	3.80	3.81
	Those who do not adapt to new technologies are going to find things difficult	3.52	3.59	3.55

Base: Base: Total individuals

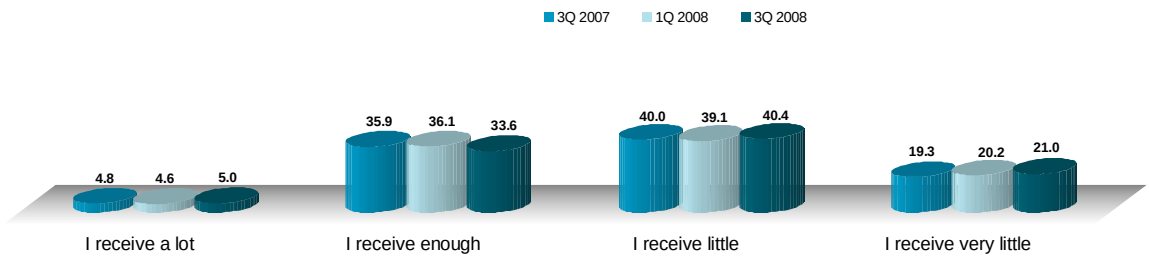
Source: Household Panel, ONTSI

This is evidenced by the sharp year-on-year growth in the percentage of social network users in 2008, according to comScore World Metrix estimates, positioning Spain as the second country in Europe with the highest percentage of Internet users who have visited a social network (73.7% of Spanish Internet users) after the United Kingdom (79.8%), with high growth of 10.8 pp in Spain between December 2007 and 2008.

Below shows the users' evaluation of the relationship between the price paid for the services or equipment and their benefits. This cost/benefit evaluation includes both the price paid for acquiring the equipment and registration for the service as well as payment for using it.

Of the four ICT services considered, fixed telephony has the lowest cost/benefit ratio. During the July-September 2008 period, only 38.6% of individuals stated that they had received a lot or sufficient in return for the price paid, compared to 61.4% who considered to have received little or very little, a situation that has worsened compared to the same period in 2007, with a drop in the percentage of those who believed they had received sufficient.

Figure 100. Cost/benefit ratio of the fixed telephony service (%)

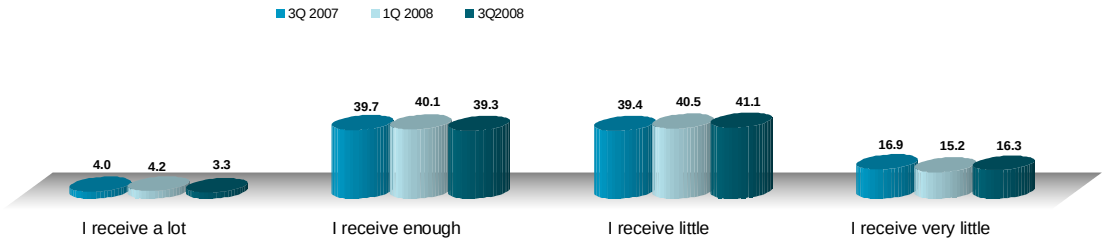


Base: Total individuals

Source: Household Panel, ONTSI

In the case of mobile telephony, the evaluation was significantly better than for fixed telephony, although it is progressively deteriorating. In the third quarter of 2008, 57.4% thought they received little or very little in return for the price paid, compared to 56.3% the previous year.

Figure 101. Cost/benefit ratio of the fixed telephony service (%)

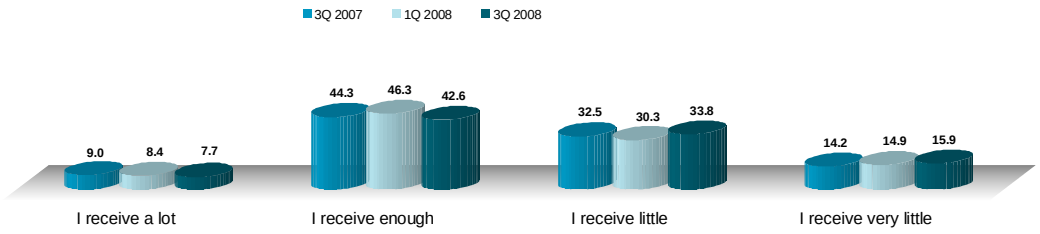


Base: Total individuals

Source: Household Panel, ONTSI

Internet continues to be the most highly valued service in terms of its cost/benefit ratio, although this positive evaluation continue its decline last year. In the period July-September 2008, 50.3% of individuals stated that they had received a lot or sufficient for the price they paid for the Internet. A year before, this percentage reached 53.3% and two years before, 58.5%.

Figure 102. Cost/benefit ratio of the Internet service (%)

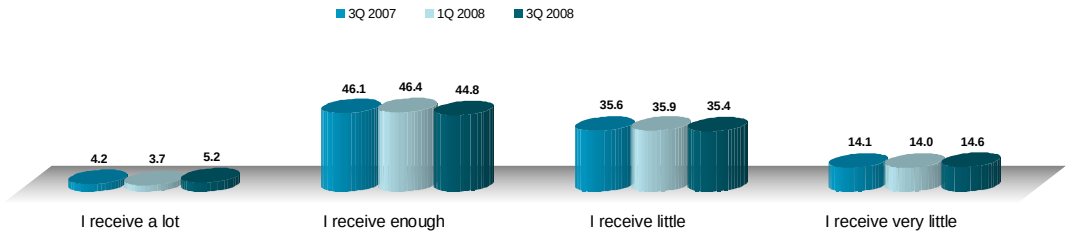


Base: Total individuals

Source: Household Panel, ONTSI

In 2008, the second highest rated service, pay TV, recorded both positive and negative growth, with 5.2% considering to have received a lot, 1 pp more than a year before, and 14.6% who considered to have received very little.

Figure 103. Cost/benefit ratio of the pay TV service (%)

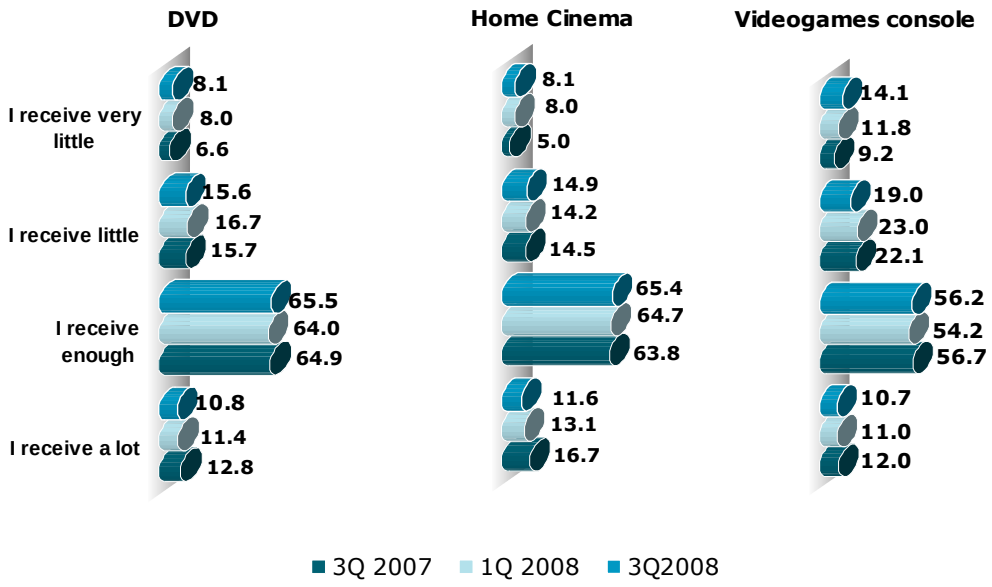


Base: Total individuals

Source: Household Panel, ONTSI

With regard to household audiovisual devices, the evaluation of the cost/benefit ratio remained at levels well above those for ICT services, since household audiovisual devices do not entail payment of fees after their purchase, unlike the services. Nevertheless, in the last year the three devices recorded modest declines in their ratios.

Figure 104. Cost/benefit ratio of audiovisual devices (%)



Base: Total individuals

Source: Household Panel, ONTSI

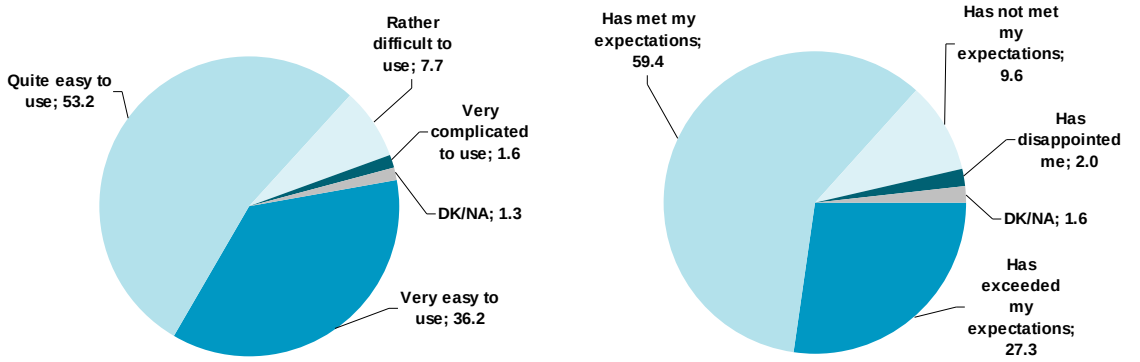
Home Cinema, which achieved penetration of around 16% of households, was the most highly rated of the three devices evaluated. In the third quarter of 2008, 77% of individuals considered that they had received a lot or sufficient in return for the price paid, compared to 80.5% the year before.

Digital or DVD video players, with a market penetration of around 70% of households, maintained practically the same positive rating, although the individuals who stated that they had received a lot or sufficient in Q3 2007 declined from 77.7% to 76.3% during the same period in 2008.

With regard to videogames consoles, present in 28.8% of households, the percentage of individuals who said they had received a lot or sufficient rose from 68.7% to 66.9% from Q3 2007 to Q3 2008.

Specifically in relation to the Internet, the indicators for ease of use and use expectations obtained better scores, based on the opinion of users of this technology. A total of 89.4% of Internet users evaluated its use as easy or very easy, compared to 7.7% who considered it rather difficult and 1.6% very complicated..

Figure 105. Simplicity and use expectations of the Internet. 2008 Q3 (%)



Base: Internet Users

Source: Household Panel, ONTSI

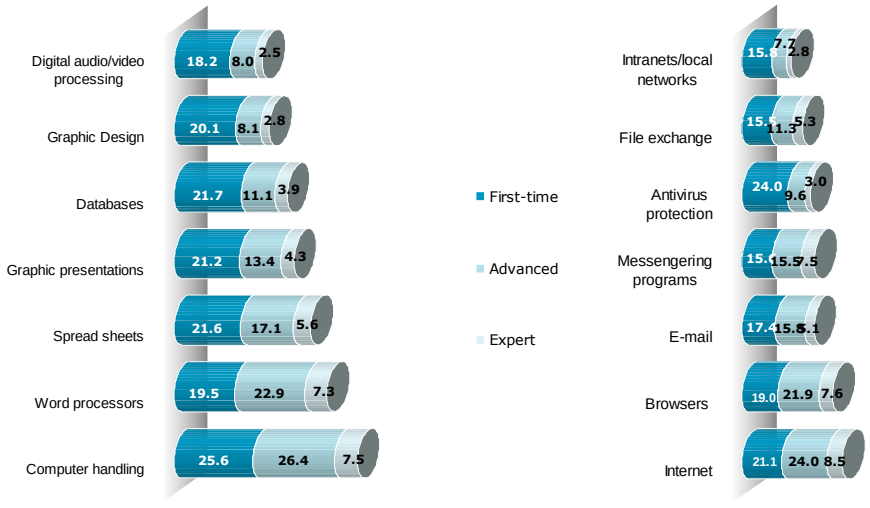
Just as significant is the 86.7% of users who consider that the Internet has met or exceeded their expectations, broken down into 59.4% who consider that it meets their expectations and 27.3% that it exceeds them.

A total of 60% of Internet users consider that Internet use has met their expectations

Finally, this chapter includes the growing levels of skills and knowledge about computers and the Internet in relation to other aspects of using these technologies, the reasons for using new technologies in general and for using computers and the Internet in particular.

In the third quarter of 2008, 59.5% of the Spanish population aged 15 and over knew how to use a computer, broken down into 7.5% of individuals who consider themselves experts, 26.4% advanced users and 25.6% who consider themselves to be beginners.

Figure 106. Knowledge of computers and Internet. 2008 Q3 (%)



Base: Total individuals

Source: Household Panel, ONTSI

in terms of Internet use, 53.6% of individuals aged 15 and over claimed to have some Internet knowledge, compared to 49.5% during the same period the previous year, an increase of 4.1 pp. Some 24% considered themselves as advanced users, 8.5% claimed to be experts and 21.1% beginners.

7.9. B2C e-Commerce in Spain

E-Commerce between companies and end consumers (B2C) continued to grow following its trend from recent years. According to the report "B2C e-Commerce 2009", this trading method generated sales of more than €5.360 billion. The key to this growth in sales lies in the percentage of Internet users, which grew from 53.5% to 58.3% of the population aged 15 and over. Thanks to this growth, and with the percentage of purchasers growing from 39.8% to 40.3% of Internet users, the number of online users grew by nearly 900,000 individuals which, added to an average expenditure of €604 were the underlying bases for sales in 2008.

The most representative figures are included in this section; full details can be found in the study "B2C e-Commerce 2009", which analyses consumer habits and characteristics of purchases, in addition to the perceptions and evaluations of e-Commerce both among Internet users who made purchases and those who did not.

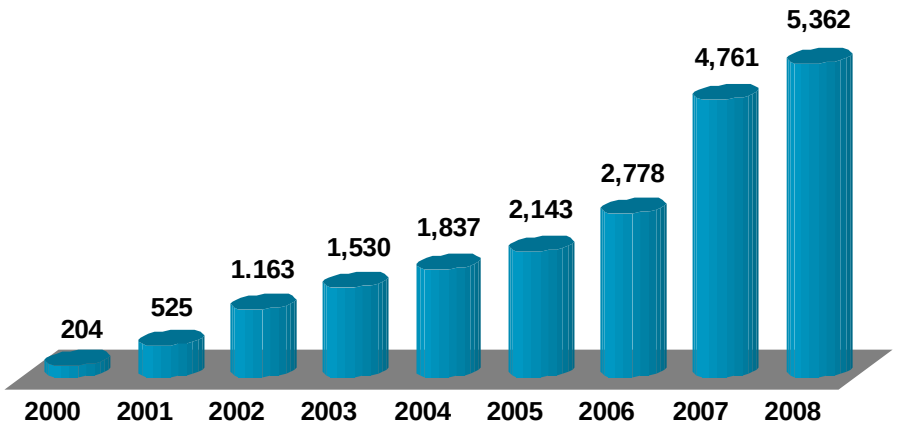
Volume of e-Commerce in Spain

B2C sales

After the spectacular growth in B2C e-Commerce sales in 2007, one year on this figure reached €5.362 billion, a 12.6% increase year-on-year. In the last seven years, the B2C market has grown tenfold and the percentage of Internet users making purchases has tripled.

The B2C market grew by more than €2.500 billion in the last two years

Figure 107. B2C e-Commerce volume

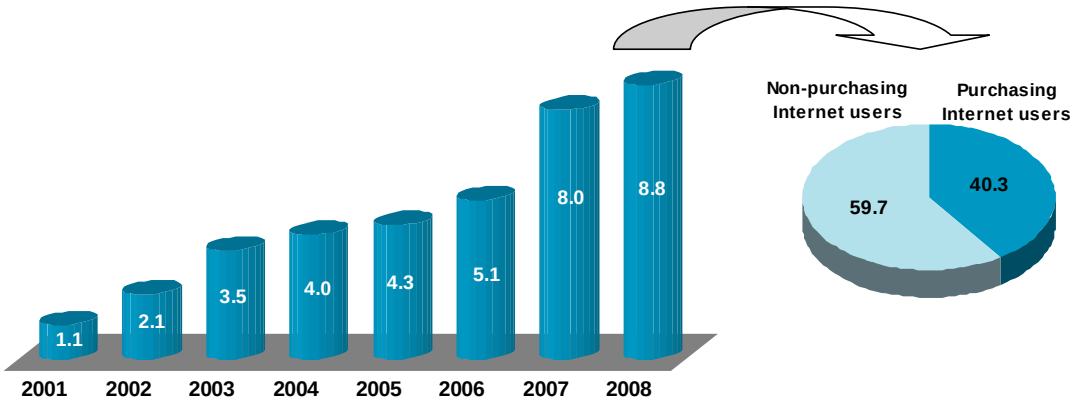


Source: ONTSI (Spanish Observatory for Telecommunications and Information Society)

Online purchasers

Four out of every ten Internet users made at least one online purchase in 2008, representing 8.8 million online purchasers aged 15 and over. The growth trend, which was only broken in 2007, continued with a spectacular increase of 2.9 million Internet users.

Figure 108. Evolution of online purchasers (millions)



Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society)

Average expenditure per purchaser totalled €604, remaining practically unchanged with respect to the previous year but 15.5% more than 2006.

Internet use

Online purchasers used in the Internet more intensively than non-purchasers. With respect to purchasers' experience of using the Internet, 77.3% had been using the Internet for more than three years compared to 58.8% of non-purchasing Internet users.

Very significant differences also occurred with regard to Internet access frequency. While 86.2% of those who made online purchases had accessed the Internet during the last week, this percentage was only 63.0% among non-purchasers.

This type of Internet connection at home (specifically ADSL or cable) is one of the differentiating elements between purchasers and non-purchasers. Purchasers are more likely to have ADSL (59.7%) than non-purchasers (44.9%). On the other hand, 17.7% of purchasers had cable Internet at home, compared to 12.2% of non-purchasers.

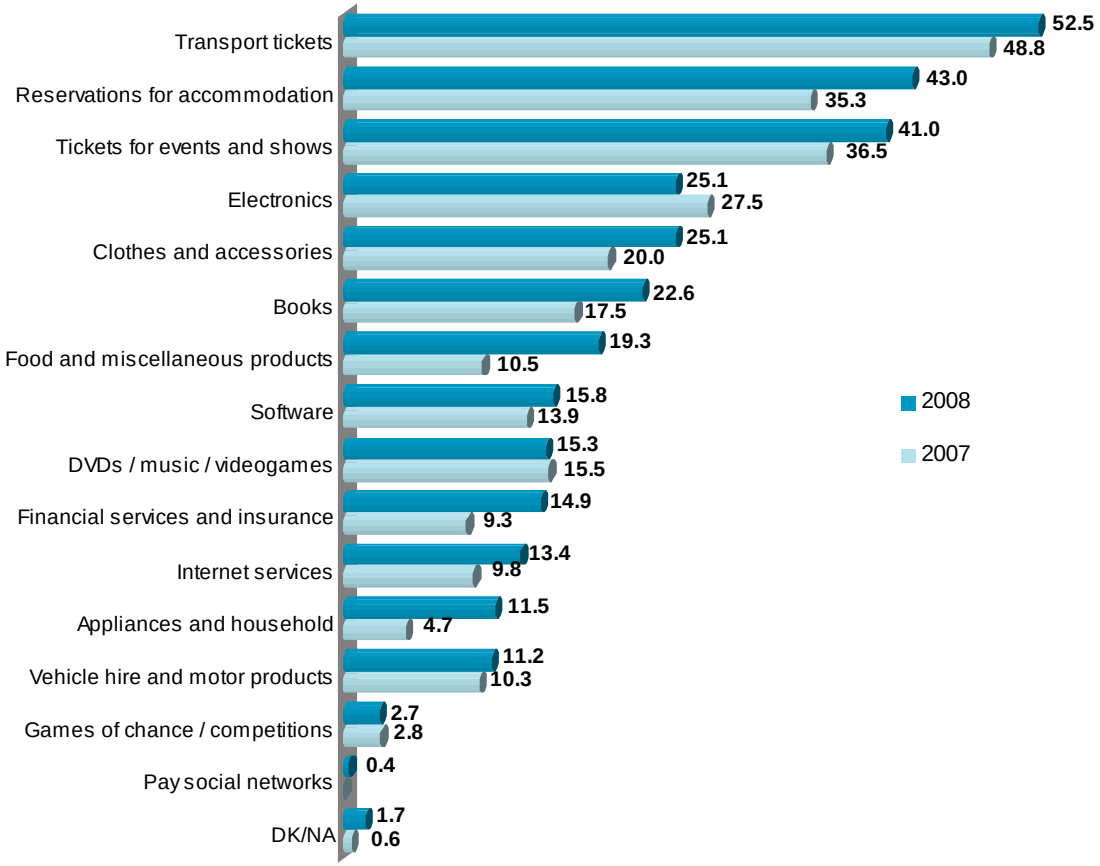
Internet purchases

Articles purchased

The tourism sector and leisure activities continue to be important among online purchases, especially the purchase of transport tickets, accommodation reservations or show tickets. Half of online purchasers had acquired transport tickets online and more than 40% had booked tickets or accommodation. The growth in accommodation reservations was among the most notable in 2008, rising by 8 pp.

Other highly demanded products included electronic equipment, clothing and accessories as well as other products such as books or food, the latter growing 9 pp last year. Software and DVDs, music and videogames completed the ranking of the most popular products. The remaining products and services were demanded by less than 15% of online purchasers. Games of chance and participation in subscription social networks were the only products that did not exceed 10%, with figures of 2.7% and 0.4% respectively.

Figure 109. Goods and services purchased on the Internet (%)



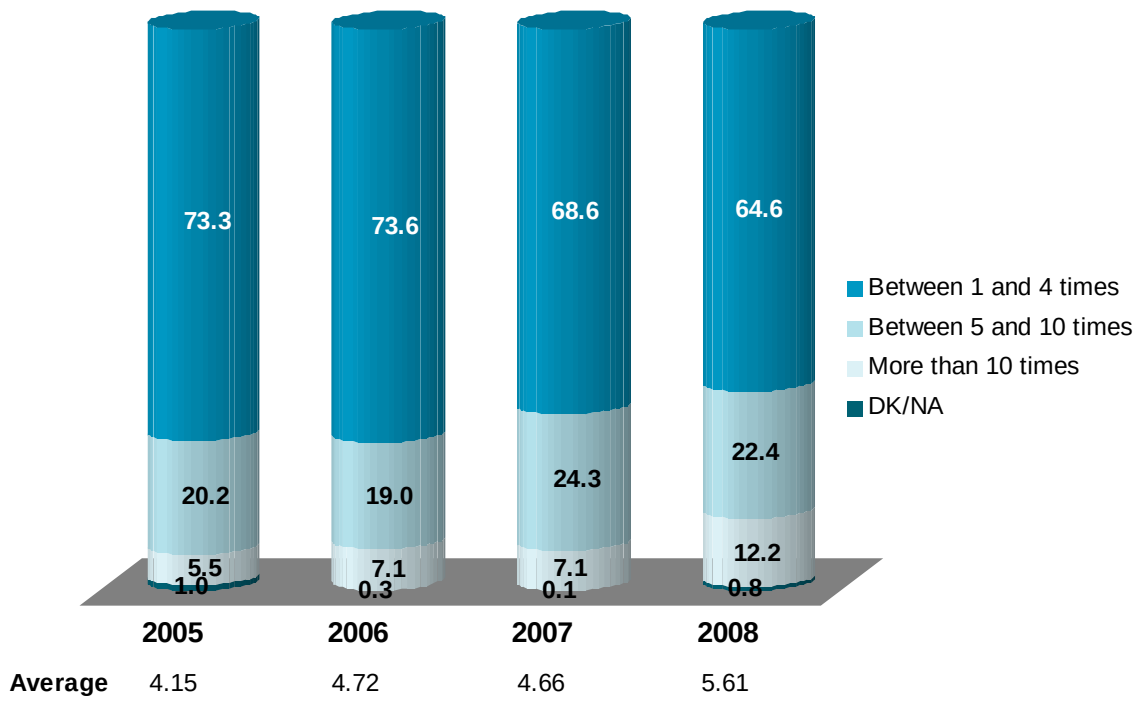
Base: All Internet purchasers

Source: ONTSI (Spanish Observatory for Telecommunications and Information Society)

Number of transactions

The average number of online purchases made per purchaser in 2008 was 5.6, nearly one purchase more with respect to the previous year (4.7 purchases). One out of every ten online purchasers made more than ten purchases in 2008 while 22.4% made between five and ten.

Figure 110. How many online purchases did you make during the year? (%)



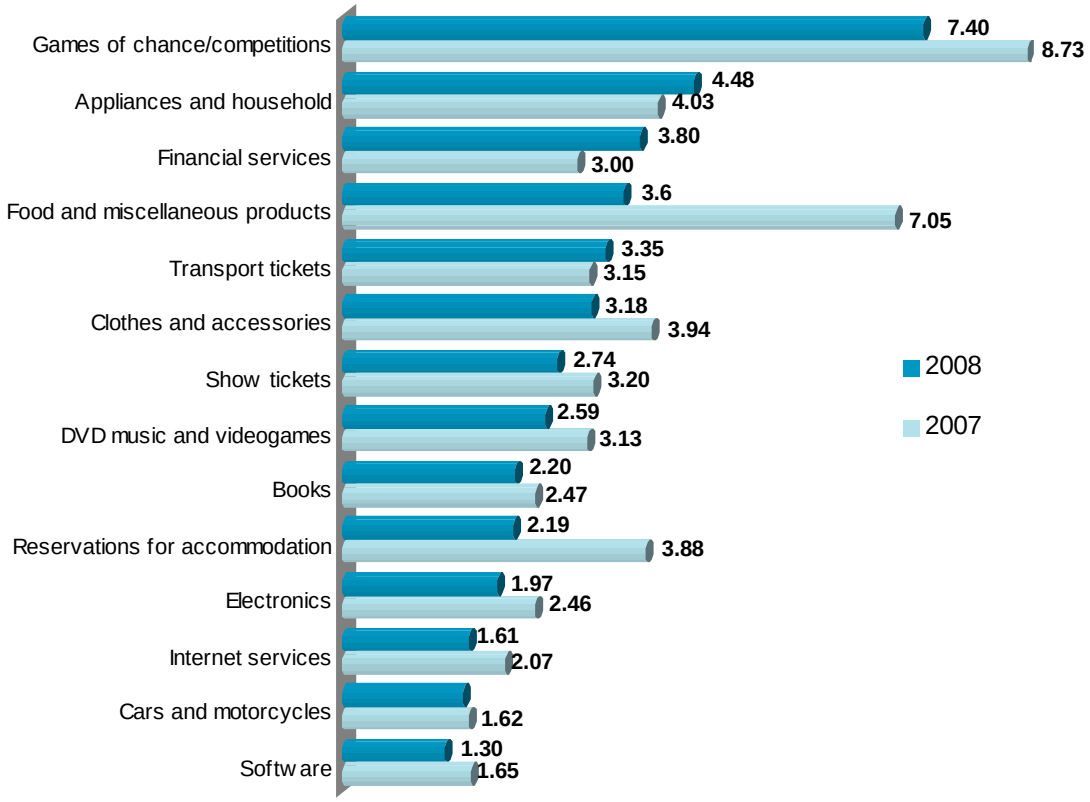
Base: Total Internet purchasers

Source: ONTSI (Spanish Observatory for Telecommunications and Information Society)

The analysis by type of product and service with respect to the number of online purchases reveals positive variations in the purchase of financial services (0.8 pp), domestic appliances and household goods (0.45 pp), and transport tickets (0.2 pp). These products and services are among the five most important online purchases.

Games of chance and competitions continued to have the highest average number of purchases, although this figure fell from 8.7 to 7.4.

Figure 111. Average number of purchases per purchaser in 2007 by product type (%)



Base: All Internet purchasers

Source: ONTSI (Spanish Observatory for Telecommunications and Information Society)

Problems with Internet purchases

While the degree of satisfaction with purchases has increased slightly, the percentage of purchasers who claimed to have experienced problems with their online purchases rose from 18.5% in 2007 to 21.6% in 2008.

The main problem with online purchases is that the product or service acquired does not correspond to that offered on the website. Specifically, one of out every three purchasers who suffered some type of difficulty with their purchases in 2008 alleged this reason, although compared to last year the figure is lower (41.4%). Logistics problems grew in prominence: around 59.5% had a bad experience. Above all, one out of every four victims alleged delivery delays and nearly 20% claimed to have received damaged products. In both cases, the reference percentages are higher than those recorded previously. However, cases where the product was not received decreased.

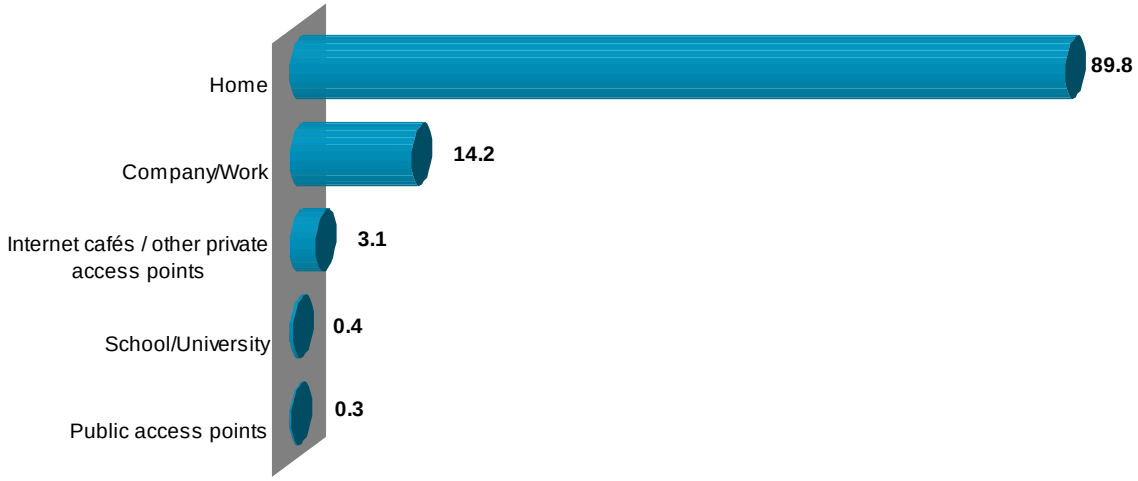
In this survey, payment problems were more frequent, mainly due to errors relating to duplicate charges (9.3%). However, fraud attempts decreased slightly compared to the last edition (6.6% vs 7.3%).

Purchasing habits

Both the home and the workplace are becoming more popular as locations for making online purchases compared to the previous year, with home increasing its dominance over the workplace, with nine out of every ten purchasers (89.8%) stating that they make purchases at home, compared to 84.3% the previous year.

In 2008, 14.2% of Internet purchasers acquired goods or services while at work, up from 12.8% the previous year.

Figure 112. Where do you usually make online purchases from? (%)



Base: Total Internet purchasers

Source: ONTSI (Spanish Observatory for Telecommunications and Information Society)

Online stores that also have physical premises continued to be the most frequently visited sites for online purchases. In 2008, 70% of purchasers used a website with these characteristics, a figure that rose by 15 pp compared to the previous year.

The second most frequently visited sites were those of stores exclusively selling online, accounting for 53.2% of purchasers compared to 44.7% one year ago. However, during 2008 the offer on the Internet diversified, with the manufacturer's website taking a larger share, which almost doubled, going from 23% in 2007 to 45% in 2008, whilst buying and selling portals almost tripled their sales (7.4% vs. 20.8%) and the online auction sites also increased (16% vs. 25%).

With regard to the website search method, 84.9% of purchasers used general search engines, compared to 72.2% the previous year.

Within the general increase in the different ways of finding a virtual store, word-of-mouth recommendations become more important last year, a rise that could be related, at least partially, to the popularity of Web 2.0 or social networking. Around

68.2% of purchasers found out about an online store from the suggestions of other purchasers, compared to 37.5% in 2007.

In addition to the significant rise in recommendations, this year a more mature and experienced use of purchasing channels was registered, as indicated by the significant number of people already knew about the page (61.4%) or had it stored in their favourites (45.4%). Lastly, various other forms of advertising are very important, both off line and online, direct and indirect, including the use of electronic mail as a form of advertising. The percentage of online purchasers who learned via such means about the virtual shop where they made their purchases has doubled or tripled.

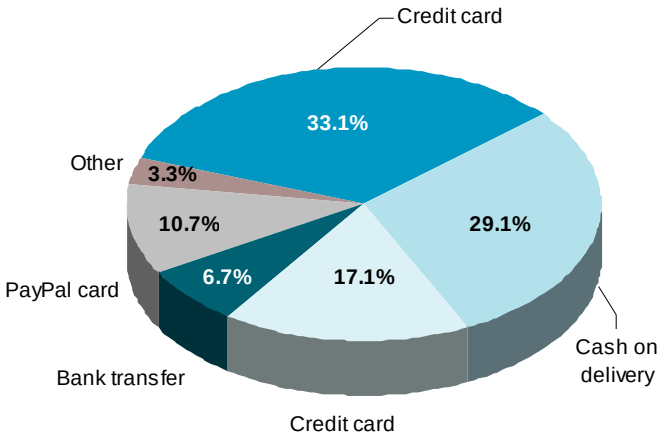
A total of 82.1% of purchasers finally accessed the website where they made online purchases via general search engines, compared to 73.9% in 2007. As previously noted, a more mature and experienced use of online shopping channels was observed. In 2008, 75.3% of purchasers directly typed the site address into their browser address bar, a significantly higher figure compared to 47.1% in 2007.

Methods of payment

Half of all purchasers preferred to pay for their online purchases with a credit or debit card. Cash on delivery, which has become an increasingly preferred method in recent years, ranked second (29%).

Of purchasers using a credit or debit card, the majority (62%) entered a PIN number to confirm the operation. Use of this option grew by 10 pp since last year.

Figure 113. What payment method do you prefer for your online purchases? (%)



Base: Total Internet purchasers

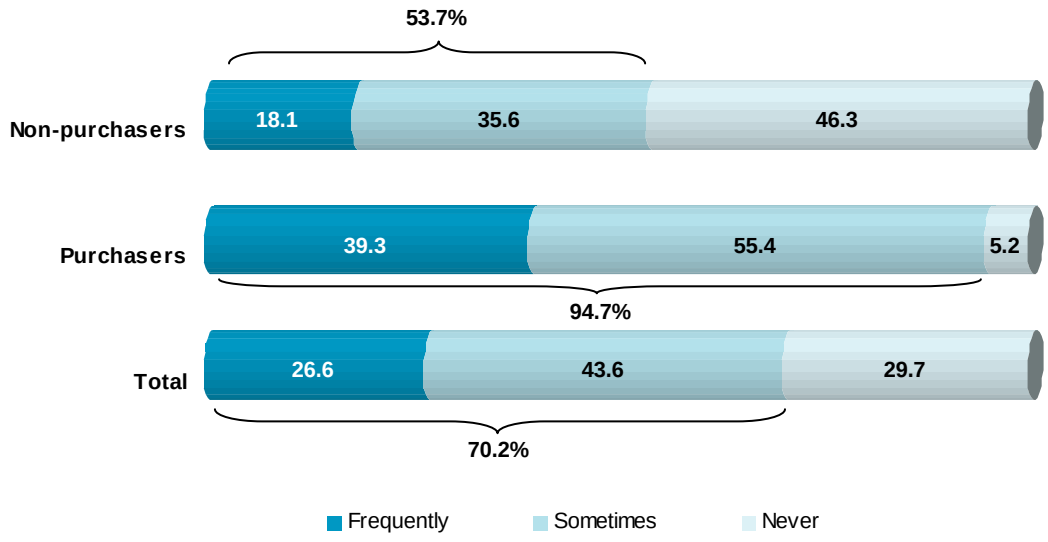
Source: ONTSI (Spanish Observatory for Telecommunications and Information Society)

The Internet as a commercial information channel

As in the previous year, in 2008 Internet users used the web as a source of information in order to later purchase products or services at a physical store (70.2%).

A total of 94.7% of purchasers who were most familiar with the Internet (their last connection is the most recent, they have better access and more experience) used it as a commercial information channel in order to later make purchases at a physical store, compared to 53.7% of non-internet purchasers.

Figure 114. Do you use the Internet as a source of information to later purchase products or services in a physical shop? (%)



Base: Internet purchasers and non-purchasers

Source: ONTSI (Spanish Observatory for Telecommunications and Information Society)

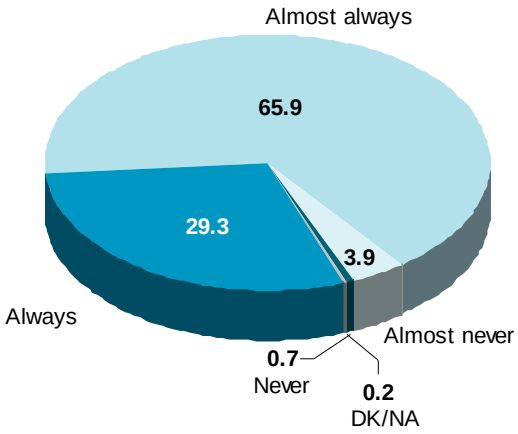
Perceptions and attitudes

A total of 95.2% of individuals who made online purchases in 2008 claimed to be satisfied with their purchases, while only 4.6% of purchasers indicated that their online purchases did not meet their expectations.

In 2008, 95% of individuals who made online purchases were satisfied with them

Perception improved slightly in relation to 2007, as the degree of satisfaction with online purchases rose by 1.5 pp from 93.7% in 2007 to the current 95.2%.

Figure 115. Has Internet purchasing met your expectations? (%)



Base: Total Internet purchasers

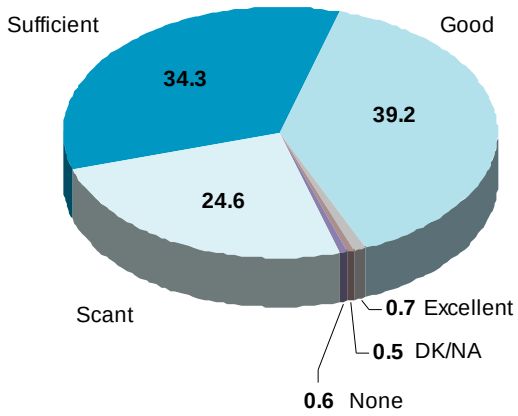
Source: ONTSI (Spanish Observatory for Telecommunications and Information Society)

Evaluation of the goods and services on Spanish websites

Three out of every four purchasers (74.2%) considered the presence of Spanish companies on the Internet sufficient for purchasing their products online, very similar to the perception in 2007 (73.5%).

In terms of evaluating the variety in the range of products and services offered by Spanish companies on the Internet, 54.3% of Internet users considered the Spanish range to be sufficient.

Figure 116. With regard to your opinion on the presence of Spanish companies on the Internet that sell online, would you say it is... (%)



Base: Total Internet purchasers

Source: ONTSI (Spanish Observatory for Telecommunications and Information Society)

The Networked Society 2008
Annual report

8. ICTs in Spanish households by autonomous region

8. ICTS IN SPANISH HOUSEHOLDS BY AUTONOMOUS REGION [20] [21]

8.1. ICT equipment

The analysis of ICT equipment in households reveals that mobile telephony was the service that had the greatest penetration at national level (92.1%). The lowest value corresponds to ADSL TV (4.6%), even though in this case penetration in relation to total households is not being measured, but rather in relation to those with television. Generally speaking, the Internet console kit recorded the lowest percentage (7.5%).

Table 10. ICT equipment available in households by autonomous region 2008

	Andalusia	Aragon	Asturias	Balearic Islands	Canary Islands	Cantabria	Castilla y León	Castilla-La Mancha	Catalonia	Region of Valencia	Extremadura	Galicia	Madrid	Murcia	Navarre	Basque Country	La Rioja	Ceuta	Melilla	Total population	Gap
Fixed telephony																92.6		66.1		81.3	26.5
Mobile telephony													95.3					81.9		92.1	13.4
Satellite TV*						14.8												40.5		21.4	25.7
Cable TV*			34.3								1.8									15.0	32.5
Digital Terrestrial Television*									51.4			25.4								37.4	26.0
Cable TV*														1.5					8.4	4.6	6.9
Internet												39.7	62.3							51.0	22.6
Video													69.4						50.8	62.9	18.6
DVD												63.6							88.3	78.3	24.7
Desktop computer									58.9		43.4									52.2	15.5
Laptop computer													34.0	20.2						26.6	13.8
Computer (total)											53.3		71.9							63.6	18.6
MP3												38.3	56.1							45.9	17.8
Home Cinema**				10.1									25.0							18.5	14.9
Printer**				42.9		59.1														50.4	16.2
Scanner**				27.4					42.2											34.9	14.8
CD recorder**				28.8													56.7			41.5	27.9
DVD recorder**				27.1													53.2			37.6	26.1
Videogames console**															25.8			49.0		34.3	23.2
Internet kit console**														2.7				12.9		7.5	10.2
Total videogames console**															26.5			51.8		35.7	25.3
Webcam**									37.7			16.7								25.9	21.0
GPS**				5.6					24.8											17.8	19.2
Digital camera**											48.5		73.6							64.7	25.1
Digital video camera**												19.1					41.2			29.1	22.1

% Max. % Min.

Base: Total households * Base: Total households with television
The ONTSI (Spanish Observatory for Telecommunications and the Information Society) considers Ceuta and Melilla jointly, unlike the INE (Spanish National Statistics Institute),

Source: INE (Spanish Statistics Institute)
***Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society)*

[20] See methodology in Chapter 12

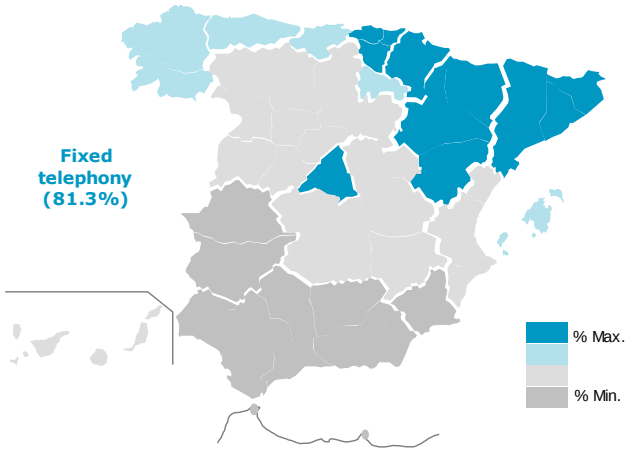
[21] The situation of each region in relation to the quartiles of the distribution of the variable considered in each case, is shown on the maps of the autonomous regions. The first quartile accounts for 25% of the distribution of the variable, the second accounts for 50% and the third includes the lowest 75% of the values. The legend of the maps and tables indicate: in navy blue, regions with the highest percentages; in light blue, regions with the highest intermediate percentages; in light grey, regions with the lowest intermediate percentages; and in dark grey, regions with the lowest percentages. The table shows the highest and lowest value in each of the horizontal categories.

Other equipment that should be highlighted includes the DVD, digital camera and the computer, which exceeded 60% in all cases. By region, Madrid and Catalonia were ranked at the top, occupying a largest number of positions in the first quartile for the different types of equipment considered.

8.2. Fixed telephony

The penetration of fixed telephony in Spanish households with members aged between 16 and 74 reached 81.3% in 2008. The Basque Country and Aragón achieved higher percentages with values of 92.6% and 90.1%, respectively. Ceuta (66.1%) and Andalusia (73.5%) recorded the lowest penetrations in Spain.

Figure 117. Penetration of the fixed telephony service by autonomous region (%)



Base: Total households

Source: INE (Spanish Statistics Institute)

In 2007, a total of 83.7% of Spanish households with members aged between 16 and 74 had a landline telephone, up 2 pp from 2008. This difference continued the decline of the previous year.

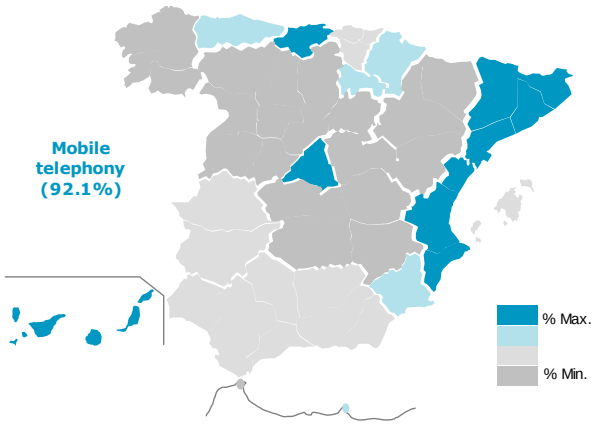
8.3. Fixed telephony

As in 2007, Madrid headed the list of autonomous regions with the greatest penetration of mobile telephony, which was present in 95.3% of households. Ceuta, which ranked last, obtained a similarly high percentage, 81.9% of total households. On average, Spain obtained a value of 92.1%.

Mobile telephony is an almost universal service in Spain, present in 92% of households

Analysing the difference between the highest and lowest penetration, by autonomous region, showed a gap of just over 13 pp, one of the lowest identified among all the selected equipment and services. The high penetration rates, together with a narrow gap, revealed the increasingly widespread use of this service in Spain.

Figure 118. Penetration of the mobile telephony service by autonomous region 2008 (%)



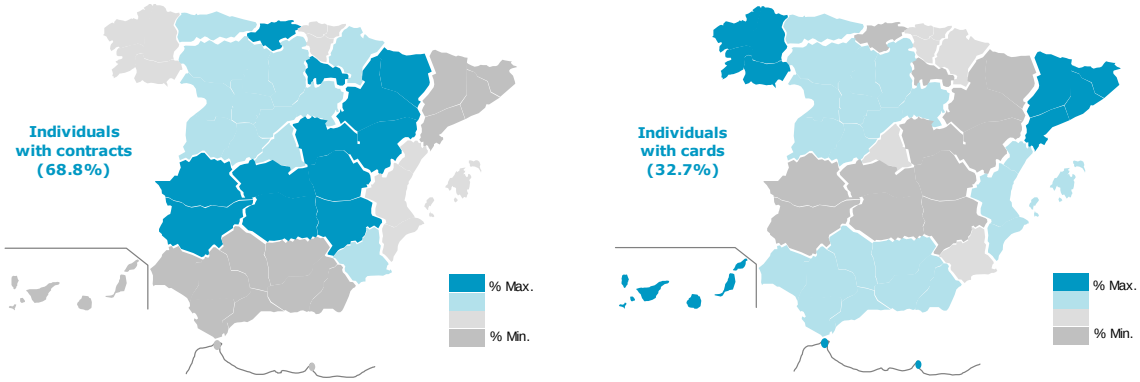
Base: Total households

Source: INE (Spanish Statistics Institute)

Contract mobile telephony maintained its leadership position compared to pay as you go telephones. Some 68.8% of individuals aged between 16 and 74 had a contract mobile telephone compared to 32.7% with a pay as you go telephone.

In relation to contract mobile telephony, the autonomous regions of Castilla-La Mancha and La Rioja, with values in excess of 75% in both cases, stood out in terms of the percentage of individuals with mobile telephones on contracts. Melilla and the Canary Islands ranked last on the list of regions with penetrations of 50.8% and 58.5%, respectively.

Figure 119. Mobile telephony according to payment method by autonomous region 2008 (%)



Base: Total individuals aged between 16 and 74 with a mobile telephone

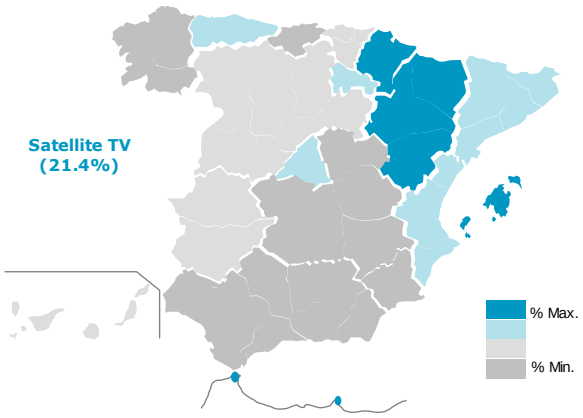
Source: INE (Spanish Statistics Institute)

The opposite occurred in the case of prepaid cards, for which the ranking is led by Melilla (50.5%) and the Canary Islands (42.9%), compared to the lower positions of Castilla-La Mancha (25.9%) and La Rioja (26.4%). In both cases, a 24 pp gap separated the highest and lowest values, even though as already seen in the case of households, the divide with mobile telephony services is only a little over 13 pp.

8.4. Television

One fifth of Spanish households with television receives the signal via a satellite dish. Ceuta and Melilla led the ranking by region with 40.5% and 32.3% respectively, while Cantabria (14.8%) and Andalusia (17.8%) recorded the lowest values.

Figure 120. Households with satellite TV 2008 (%)

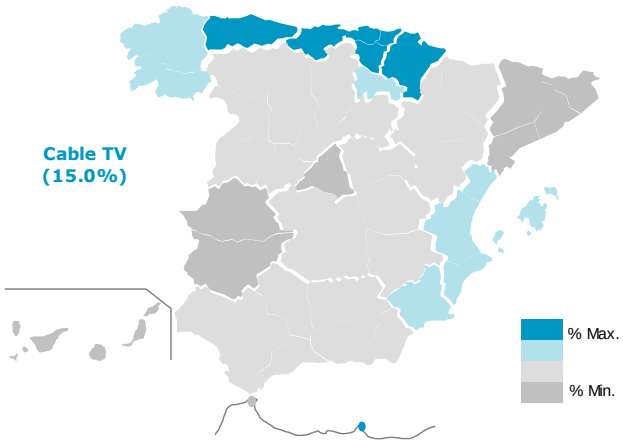


Base: Total households with television

Source: INE (Spanish Statistics Institute)

With regard to cable television, 15% of total households with a television set use this technology to receive a signal.

Figure 121. Households with cable TV 2008 (%)



Base: Total households with television

Source: INE (Spanish Statistics Institute)

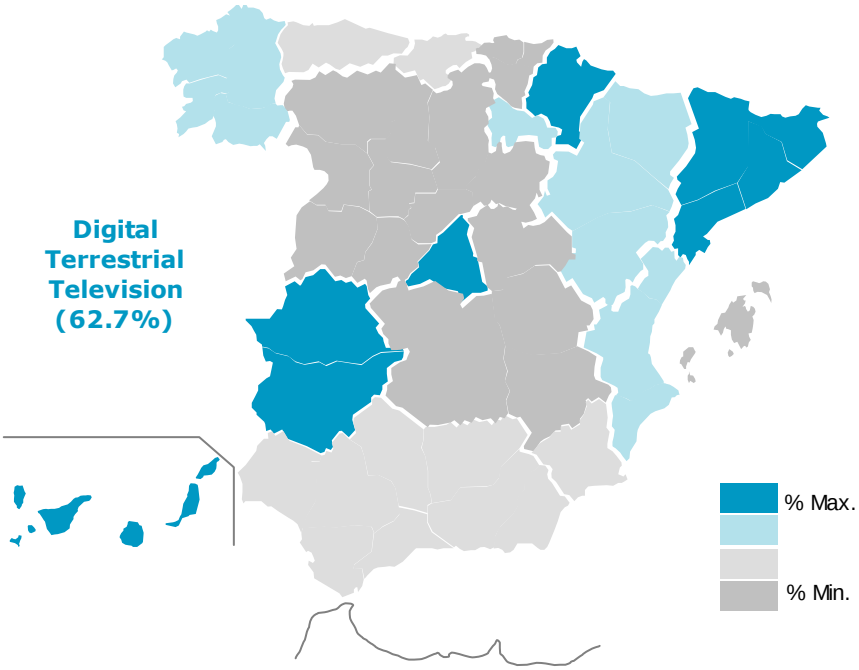
Asturias was the region with the most households with DTT, accounting for 34% of its total.

Another region which exceeded 30% was the Basque Country (31.6%). In this particular indicator, there was a gap of more than 32 pp between the highest and lowest percentages with Extremadura barely obtaining 2%.

Catalonia, the Canary Islands and Madrid obtained the highest percentages of households with DTT

However, with Digital Terrestrial Television (DTT) coverage encompassing nearly the whole population, the highest percentage in the world, by May 2009 two-thirds of households had access to DTT. Catalonia was the only region to exceed 70% (73.3%). It was followed by the Canary Islands (67.7%), Madrid (67.2%) and Navarre (66.3%). Even the regions with the lowest percentages, less than 55%, exceeded or equalled 50% in all cases: including the Balearic Islands and Castilla y León, both with 52.2%, the Basque Country and Castilla-La Mancha with 51.4% and 48.9%, respectively.

Figure 122. Households with Digital Terrestrial Television (DTT) 2008 (%)



Base: Total households

The geographical scope of the reference study for Impulsa TDT does not include Ceuta and Melilla in this variable.

Source: IMPULSA TDT

The percentage of households with DTT in Spain climbed steadily in anticipation of the analogue switch-off, which will occur in April 2010. This represented a rise of nearly 26 pp compared to May 2007, when 37% of households had television with DTT.

8.5. Internet

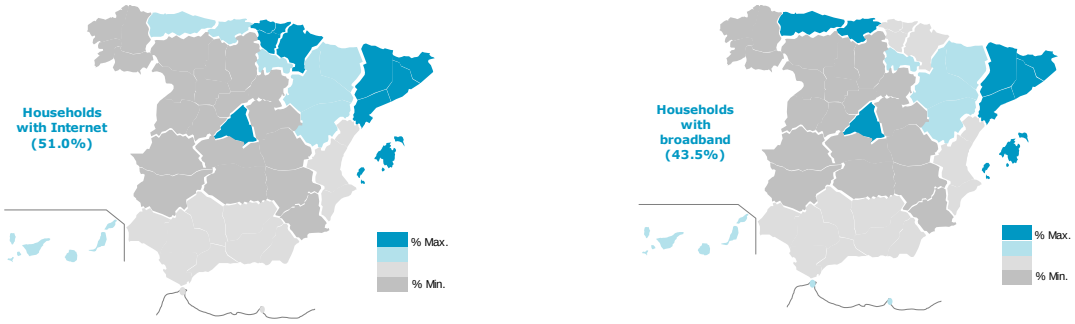
According to the latest data published by the INE (Spanish Statistics Institute), a total of 51% of Spanish households had Internet access in 2008. Madrid and Catalonia headed the list of regions with the highest percentage of households with the Internet, with values exceeding 60% in both cases (62.3% and 60.1%, respectively).

The greatest Internet penetration was recorded in the north-east and

Geographically, the north-east and central zones recorded the greatest penetration of Internet services in households. These were followed by the northern zone, comprised of Asturias, Cantabria, La Rioja and Aragón which, together with the Canary Islands, formed the regional block with the greatest penetration. Next in line was the southern zone, comprised of Andalusia, Ceuta, Melilla and Valencia.

The central zone, Extremadura, Castilla y León, Castilla-La Mancha, together with Galicia, comprised the regions with the lowest percentages, with Galicia recording the lowest household penetration value, reaching barely 40%.

Figure 123. Households with Internet and broadband by autonomous region 2008 (%)



Base: Total households

Source: INE (Spanish Statistics Institute)

Broadband penetration was slightly lower than that of the Internet. In fact, 43.5% of households had a broadband connection in 2008.

A total of 43.5% of Spanish households had a broadband network connection

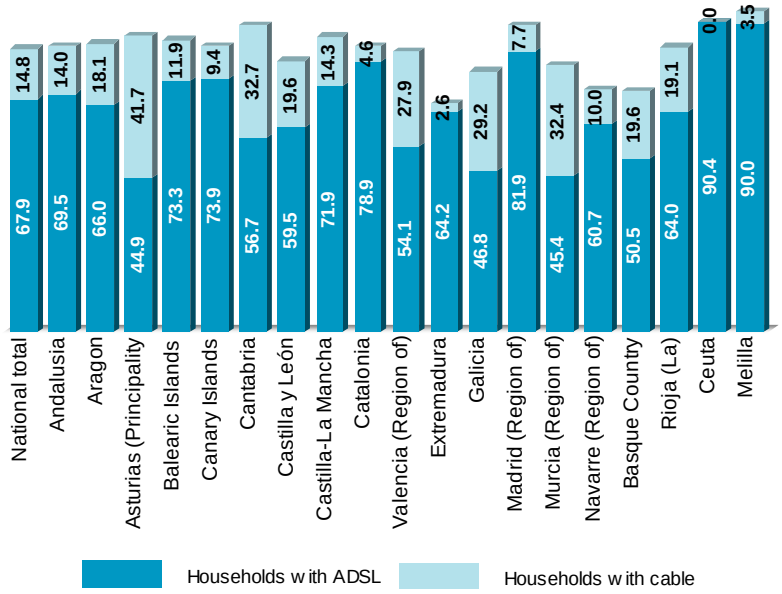
As in the case of the Internet, Madrid and Catalonia recorded greater penetration, with 57% and 52.1%, respectively. The gap between them and the region with the lowest value, Extremadura, was just over 27 pp.

Around 68% of households with Internet access connected using ADSL technology in Spain, while this percentage fell to 15% for cable network access.

By region, Ceuta (90.4%) and Melilla (90%) recorded the highest proportion of households with ADSL, compared to Asturias (41.7%), Cantabria (32.7%) and Murcia

(32.4%), which led the group of regions with the greatest penetration of cable as the Internet access technology.

Figure 124. Households with broadband by type of technology and autonomous region 2008 (%)



Base: Total households with Internet access

Source: INE (Spanish Statistics Institute)

8.6. Evaluation and attitudes toward new technologies

Fixed telephony services obtained the lowest cost/benefit ratio[22], with an average score of 2.49. The regional analysis revealed that the Balearic Islands obtained the best cost/benefit ratio of 2.66 with more than 73% of households with fixed telephony claiming to receive an excellent or adequate service. Galicia obtained the lowest score (2.01), where nearly 50% of households with fixed telephony claimed to receive a poor or very poor service.

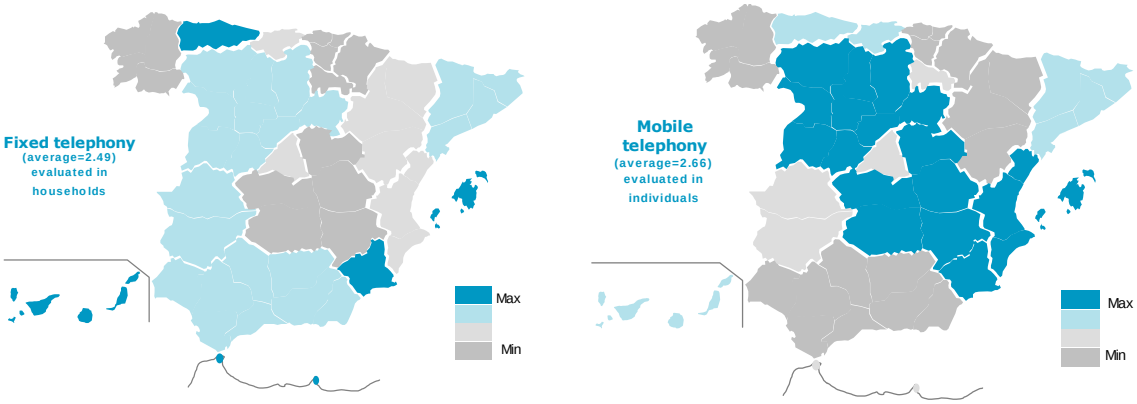
Mobile telephony, however, obtained the second-best score among mobile telephony users in Spain (2.66), higher than that of pay TV (2.62) and lower than the Internet (2.70), which was the service with the best cost/benefit ratio.

The Internet was the service with the best cost/benefit ratio

[22] The scores for the "cost/benefit ratio" variables and for attitudes are averages not percentages. The cost/benefit ratio scale ranges from 1 (receives a poor service) to 4 (receives an excellent service) and for attitudes it ranges from 1 (totally disagree) to 5 (totally agree). The colours of the maps indicate: in navy blue, regions with the highest average values; in light blue, regions with the highest intermediate values; in light grey, regions with the lowest intermediate values; and in dark grey, regions with the lowest intermediate values.

In the case of mobile telephony, the highest ratings corresponded to the Balearic Islands (2.85) and Murcia (2.81), where the percentages of mobile telephone users who received an excellent or adequate service reached 77.4% and 69.1%, respectively. Navarre, with an average of 2.46, had the lowest cost/benefit ratio. In this case, around 42% of mobile telephone users claimed to receive a poor or very poor mobile telephony service.

Figure 125. ICT services cost/benefit ratio by autonomous region: fixed and mobile 2008

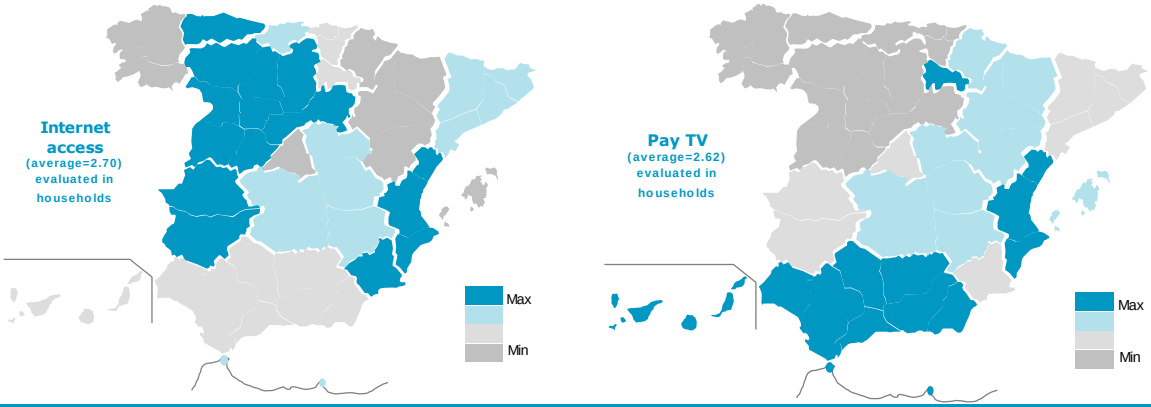


The ONTSI (Spanish Observatory for Telecommunications and the Information Society) considers Ceuta and Melilla jointly, unlike the INE (Spanish National Statistics Institute),

Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society)

The Internet access service in Murcia and Castilla y León was the most highly rated of all the regions. In fact, more than 74% of households claimed to receive an excellent or adequate service in return for the price paid in both cases. The average scores for the two regions were 2.84 and 2.83, respectively. Although Aragón recorded the lowest cost/benefit ratio (2.54), it was closely followed by Galicia, with 2.56, where more than 30% of households claimed to receive a poor or very poor service in return for the price paid.

Figure 126. ICT services cost/benefit ratio by autonomous region: Internet and pay TV 2008



The ONTSI (Spanish Observatory for Telecommunications and Information Society) considers Ceuta and Melilla jointly

Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society)

Ceuta and Melilla obtained the best cost/benefit ratio in the case of pay TV, recording an average of 2.82. In these two regions, around 72% of households claimed to receive an excellent or adequate service. Cantabria however obtained the lowest rating (2.23), with more than 47% households that claimed to receive a poor or very poor service.

A total of 89% of Spaniards considered ICTs useful to education

With regard to attitudes towards new technologies, 88.9% of individuals aged between 16 and 74 totally or partially agreed that ICTs are useful to education. The agreements in Asturias, Andalusia, Castilla-La Mancha and Ceuta and Melilla were especially notable. Education obtained an overall average rating of 4.38 points out of a maximum of 5.

Another highly rated aspect was the utility of new technologies in the business world. In fact, 85.4% of the selected individuals totally or partially agreed with this attitude, their distribution by region being similar to that of education. The average score was 4.27 points.

In third position was the opinion that ICTs make life easier, held by 83% of individuals, with an average score of 4.20 points. Those regions that assigned the highest value to this attitude were virtually the same as in the previous cases.

The fact that the lowest average score obtained was for the statement "new technologies are not for me" was clearly encouraging, highlighting that most individuals have a positive attitude toward ICTs. In general, they were in agreement with regard to the benefit of ICTs in areas such as education, business, personal, etc.

Table11:Average attitudes toward new technologies by autonomous region (1 Totally disagree – 5 Totally agree) 2008

Max
Min

	Andalusia	Aragon	Asturias	Balearic Islands	Canary Islands	Cantabria	Castilla y León	Castilla-La Mancha	Catalonia	Region of Valencia	Extremadura	Galicia	Madrid	Murcia	Navarre	Basque Country	La Rioja	Ceuta	Melilla	Total
For education			4.54									4.21								4.38
For the work environment												4.08						4.43		4.27
Make life easier																3.98		4.46		4.20
I would use it more if someone showed me															3.41			4.05		3.70
In social relations					3.95										3.52					3.85
They make me more independent															3.30			3.95		3.63
They are not for me														3.27			2.54			2.86

The ONTSI (Spanish Observatory for Telecommunications and the Information Society) considers Ceuta and Melilla jointly, unlike the INE (Spanish National Statistics Institute),

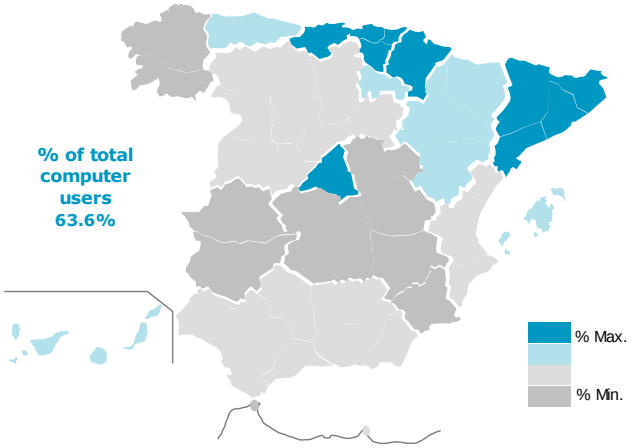
Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society)

8.7. Uses and habits of new technologies

Use of computers

Nearly 64% of Spanish households with at least one member aged between 16 and 74 were computer users, mainly of desktop computers which accounted for twice as many households as laptops. The regions that obtained the highest percentages were Madrid, Catalonia and the Basque Country.

Figure 127. Computer users by autonomous region 2008 (%)

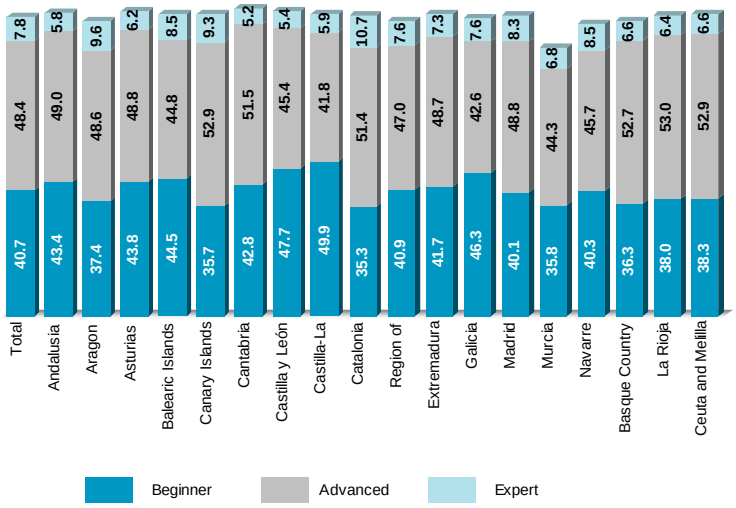


Base: Total households

Source: INE (Spanish Statistics Institute)

A total of 48.4% of individuals aged between 16 and 74 had advanced computer skills. These were followed by beginners, with 40.7%, and finally expert users, with 7.8%.

Figure 128. Level of computer skills by autonomous region 2008 (%)



Base: Individuals aged between 16 and 74
The ONTSI (Spanish Observatory for Telecommunications and the Information Society) considers Ceuta and Melilla jointly, unlike the INE (Spanish Statistics Institute).

Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society)

The greatest percentage of expert users was recorded in Catalonia, Aragón and the Canary Islands. Advanced level users predominated in La Rioja, the Canary Islands, Basque Country and Ceuta and Melilla.

Catalonia, Aragón and the Canary Islands have the highest percentage of expert

Finally, the regions with the highest percentage of beginner users were Castilla y León and Castilla-La Mancha.

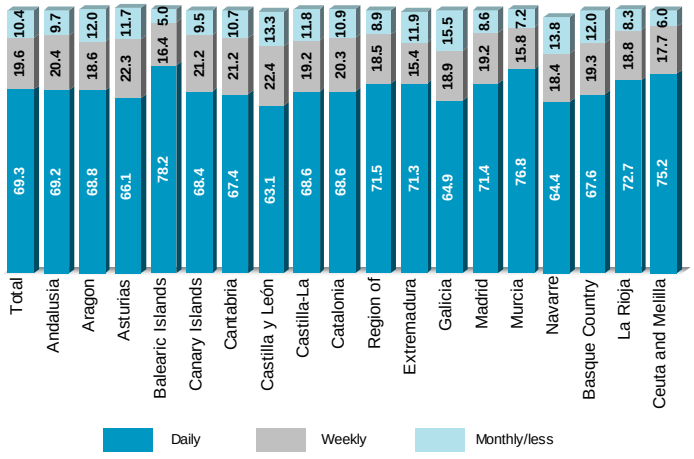
Use of mobile telephony

In line with the results above, the regions with the highest mobile telephony penetration rates are, in this order, Madrid, Catalonia, Canary Islands, Cantabria and Valencia, although the regions with the highest percentage of the most intensive users are the Balearic Islands and Murcia. The percentage of mobile users in these two regions that use their mobile daily were 78.2% and 76.8% respectively. By contrast, Galicia (15.5%) and Navarre (13.8%) have the highest percentage of the least intensive users, that is, individuals who use their mobile device only monthly or less.

Despite the regional differences in mobile phone use, it should be noted that this service is used intensively across all of Spain's regions. All regions have a percentage of daily users of over 60%, with the national average being 69.3%.

Intensive use of mobile phones in all Spanish autonomous regions

Figure 129. Mobile users according to frequency of use 2008 (%)



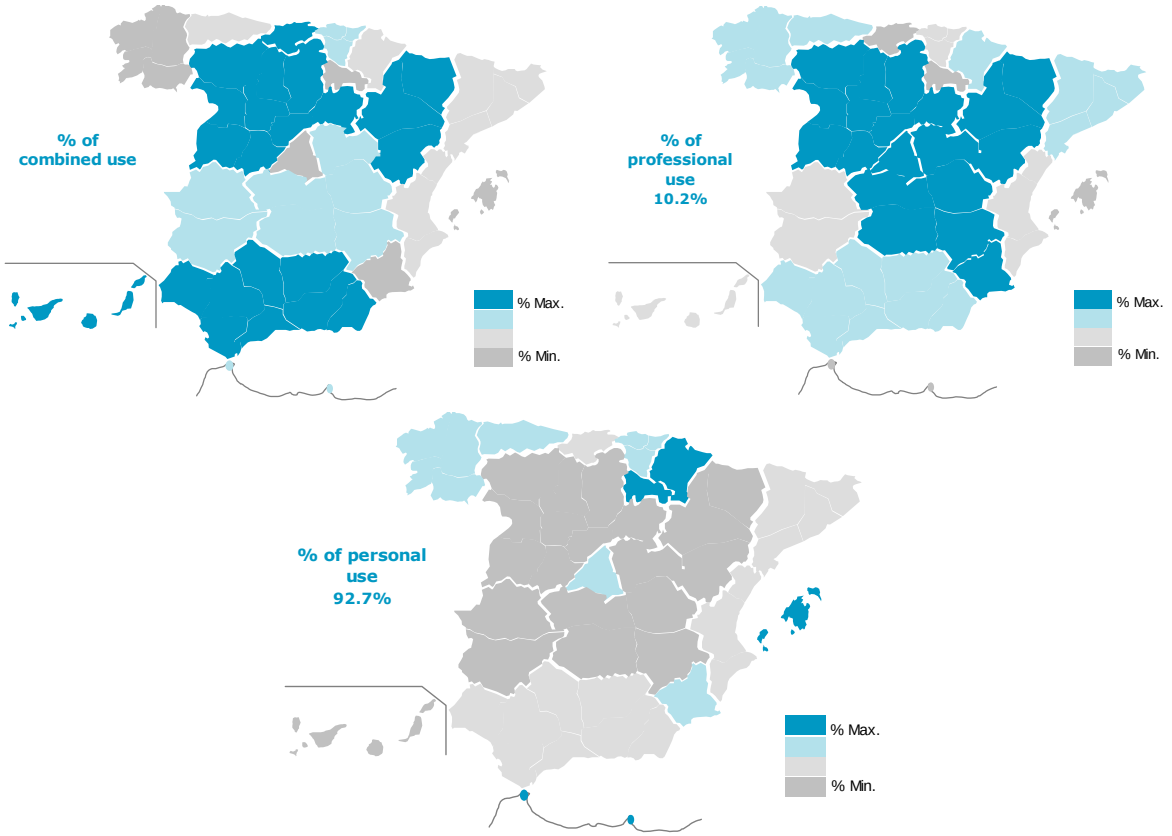
Base: Mobile telephony users
The ONTSI (Spanish Observatory for Telecommunications and the Information Society) considers Ceuta and Melilla jointly

Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society)

Mobile telephony in Spain is mainly used for personal matters A total of 92.7% of users of this service use it for this purpose. Around 10.2% of users use their phone for professional use and the figure for mixed use is 10.9%.

Analysing personal use, the region with the highest percentage of users in Navarre, with 96.1%. The figures for La Rioja, Balearic Islands, Melilla and Ceuta, the other regions in the leading group, range between 94.5% and 94.8%. The regions with the least users using their mobile for this purpose are Castilla-La Mancha and Aragon, the regions in which mobile telephony is most used for professional purposes.

Figure 130. Mobile users according to preferred type of service use 2008 (%)



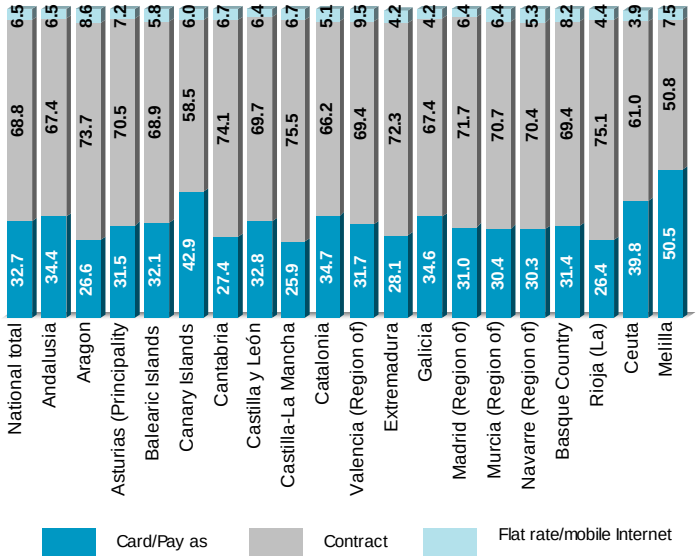
Base: Mobile telephony users
The ONTSI (Spanish Observatory for Telecommunications and Information Society) considers Ceuta and Melilla jointly

Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society)

Although the payment method for mobile telephony services varies according to the user's region, in general terms, contract payment for telephony is more prevalent and is gaining ground over the card/pay as you go method. Almost seven out of every ten mobile users have a contract with a mobile telephone operator, while just over three out of ten opt for the pre-pay method using a telephone card. The service which is yet to record a significant percentage of users is flat rate Internet access via the mobile. This method has yet to achieve 10% of users in any region.

The details for each region show that Melilla (50.5%), Canary Islands (42.9%) and Ceuta (39.8%) have the highest percentages of card users, while contracts are particularly prevalent in regions such as Castilla-La Mancha (75.5%), La Rioja (75.1%) and Cantabria (74.1%).

Figure 131. Mobile phone users according to payment method 2008 (%)



Base: Mobile telephony users

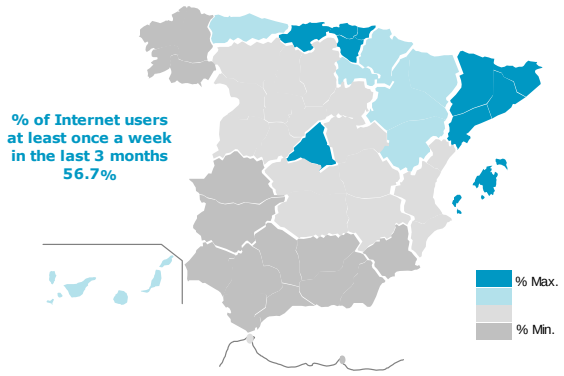
Source: INE (Spanish Statistics Institute)

Uses of the Internet

Madrid, Catalonia, Balearic Islands, Basque Country and Navarre recorded the highest percentages of

Around 57% of people aged 16 to 74 have accessed the Internet in the last three months, according to the latest figures from the INE (Spanish Statistics Institute) for 2008. Madrid, Catalonia, Balearic Islands, Basque Country and Navarre are the regions with the highest percentages of users among the selected population. Most notable among them is Madrid where 67% of individuals have accessed the Internet in the last three months, 8 pp more than Navarre, which, with a figure of 59% is at the bottom of the main of regions.

Figure 132. Internet users by autonomous region 2008 (%)



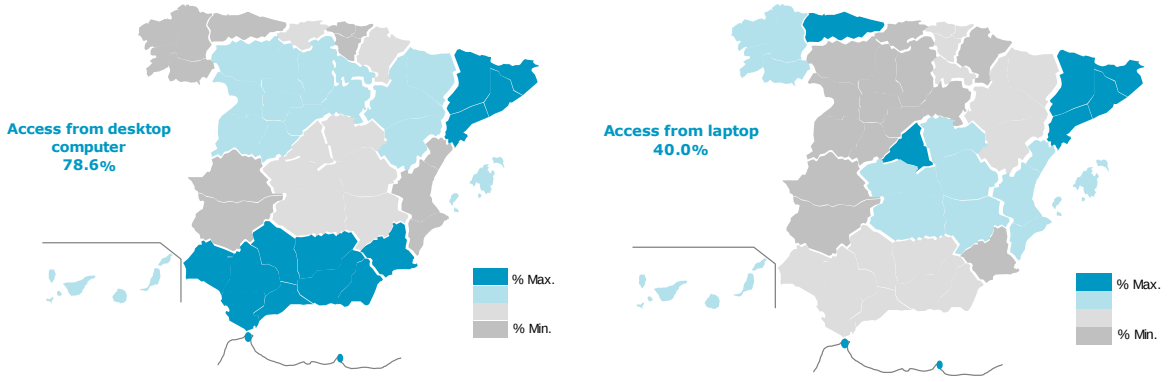
Base: Individuals aged between 16 and 74

Source: INE (Spanish Statistics Institute)

Extremadura, Galicia, Melilla and Murcia are in the block of regions with the lowest percentages of people who have used the Internet in the last three months. However, despite the differences across the country, the level of Internet penetration in Spain is high, with no region recording a penetration of less than 40%.

In the majority of cases, the Internet is still being accessed from a desktop computer, with 78.6% of households throughout Spain connecting to the Internet via this device. This is followed by access via laptop computers (40%), while other devices have minor percentages.

Figure 133. Internet access according to device 2008 (%)

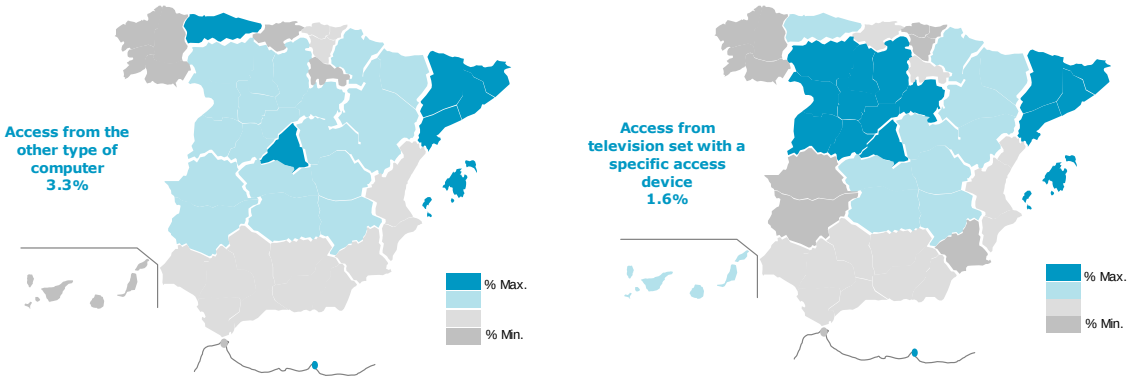


Base: Households with Internet access

Source: INE (Spanish Statistics Institute)

By region, Andalusia and Murcia, which both have high percentages of households that access via a desktop computer, are among the group of regions with the lowest percentages of laptop access. Catalonia and Melilla have high levels of laptop and desktop users.

Figure 134. Internet access according to device 2008 (%)

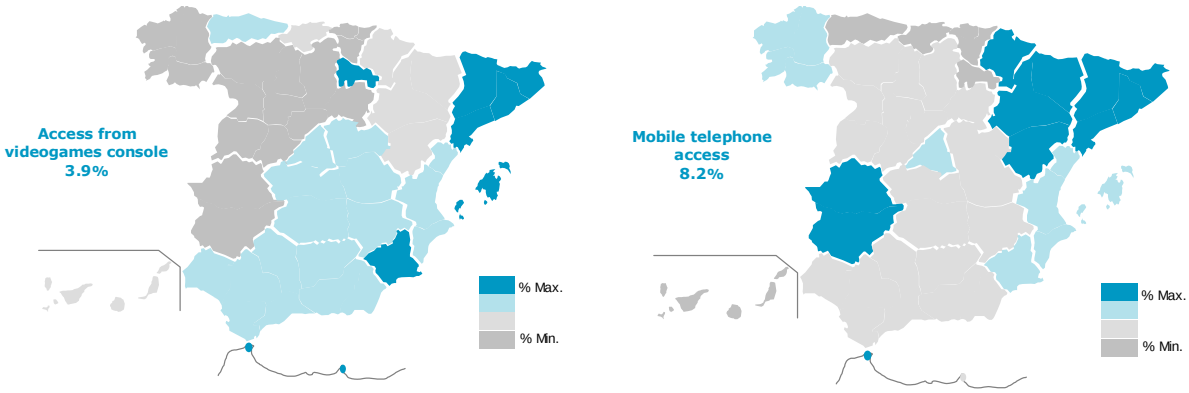


Base: Households with Internet access

Source: INE (Spanish Statistics Institute)

Among the devices which are not PCs, the mobile telephone is the most commonly used among households for accessing the Internet, with 8% of households using this device to connect to the Internet compared to figures such as 3.9% for the video console and 1.6% for televisions with an access device.

Figure 135. Internet access according to device 2008 (%)



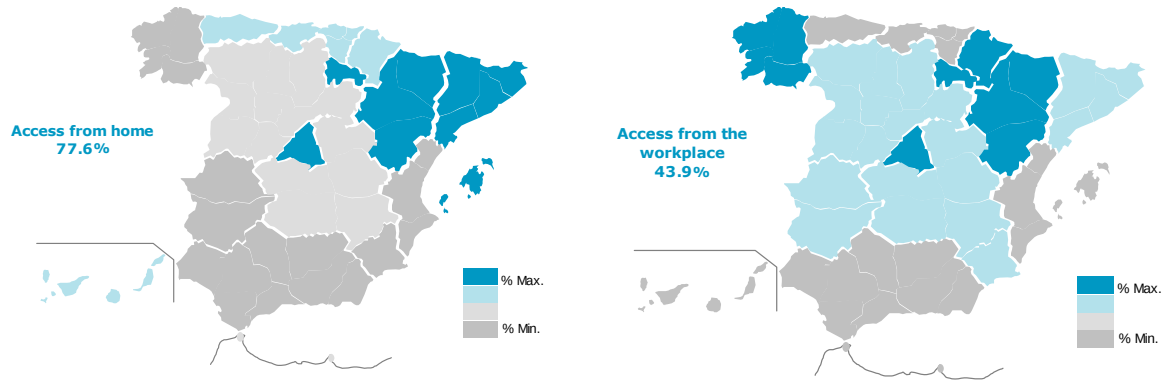
Base: Households with Internet access

Source: INE (Spanish Statistics Institute)

There are also clear differences between the location used for accessing the Internet, not only between the possible places but also between regions. In Spain, the Internet is accessed from home more than any other location, with a figure of 77.6%. This figure is almost 34 pp higher than the figure for access from work. Madrid, Aragon and La Rioja are the three regions with the highest figures both for home and work access and Andalusia is among the group of regions with the lowest number of users for both types of access.

The home is the main place for accessing the Internet

Figure 136. Internet access according to place of access 2008 (%)

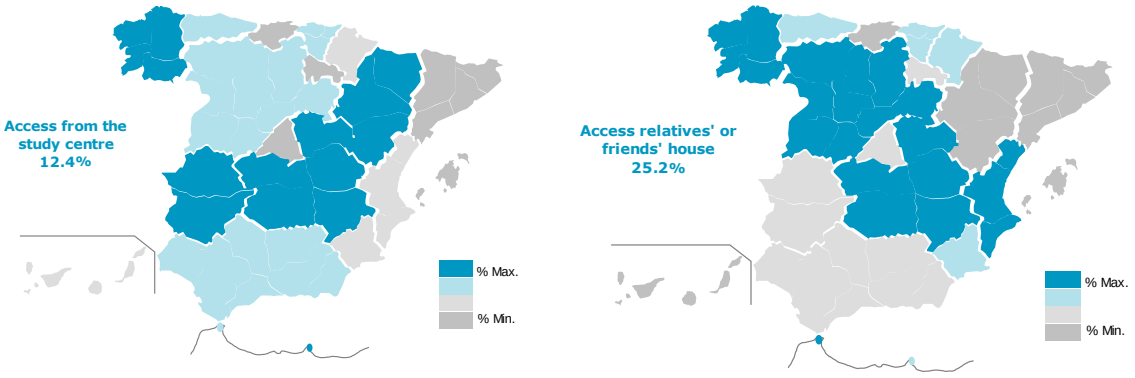


Base: Individuals aged between 16 and 74 who have used the Internet in the last three months

Source: INE (Spanish Statistics Institute)

The homes of friends or relatives are more popular than study centres as places used by individuals to access the Internet. However, the study centre is the place with the smallest difference between the maximum and minimum percentage of users, as it is the only one which does not exceed 10 pp.

Figure 137. Internet access according to place of access 2008 (%)

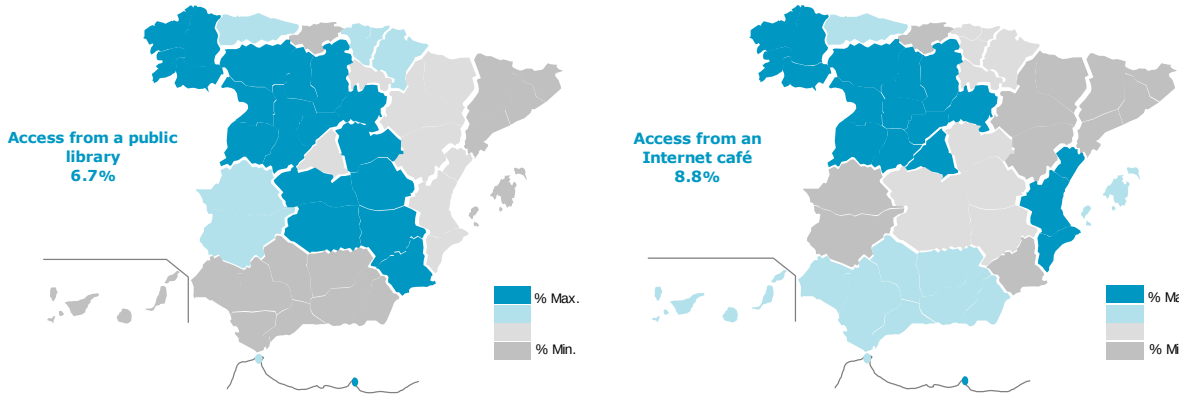


Base: Individuals aged between 16 and 74 who have used the Internet in the last three months

Source: INE (Spanish Statistics Institute)

In relation to study centres, it is worth noting that Extremadura leads the ranking with almost 20% of users, while the figure for Madrid is barely 10%. Likewise, Castilla-Leon (36%) is prominent for access from the homes of relatives or friends, compared to 14% for Catalonia, which is among the group with the lowest percentage of users.

Figure 138. Internet access according to place of access 2008 (%)



Base: Individuals aged between 16 and 74 who have used the Internet in the last three months

Source: INE (Spanish Statistics Institute)

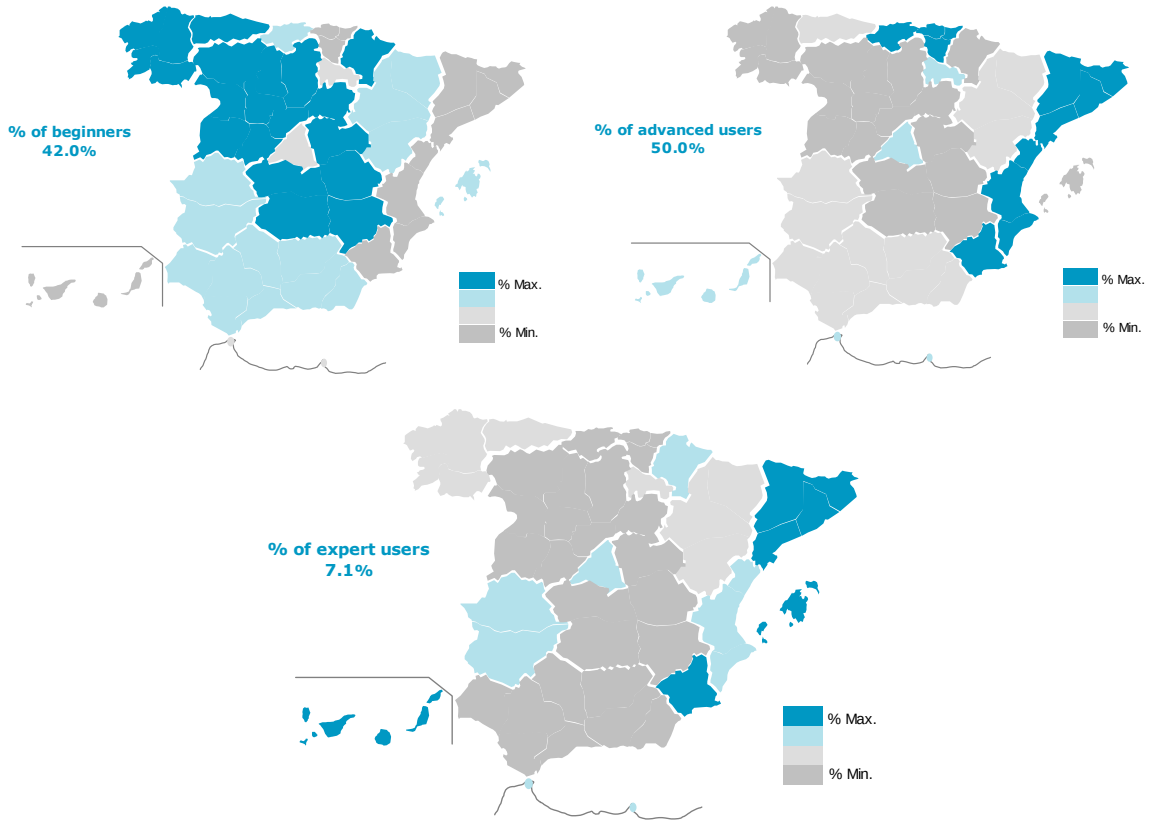
A total of 50% of the population aged 16 to 74 are considered to be advanced Internet users compared to 42% who are beginners. Only 7% consider themselves to be capable of using highly sophisticated Internet services, and could be considered as expert users.

The highest concentration of advanced users is in the regions of Valencia (56.4%), Basque Country (54.2%), Catalonia (53.2%), Murcia (51.9%) and Cantabria (51.7%). By contrast, the two Castilla regions have the highest percentages of beginner users, with figures of more than 50% in both cases.

Expert Internet users are concentrated in Catalonia, Murcia, Balearic Islands and Canary

In the expert category, which has the smallest variation between the maximum and the minimum number of users between regions, Catalonia is the only region where 10% of users are considered as experts. Murcia, Balearic Islands and Canary Islands all fall into the group of regions with the highest percentages, with figures of around 8%.

Figure 139. Degree of Internet use by Internet users 2008 (%)



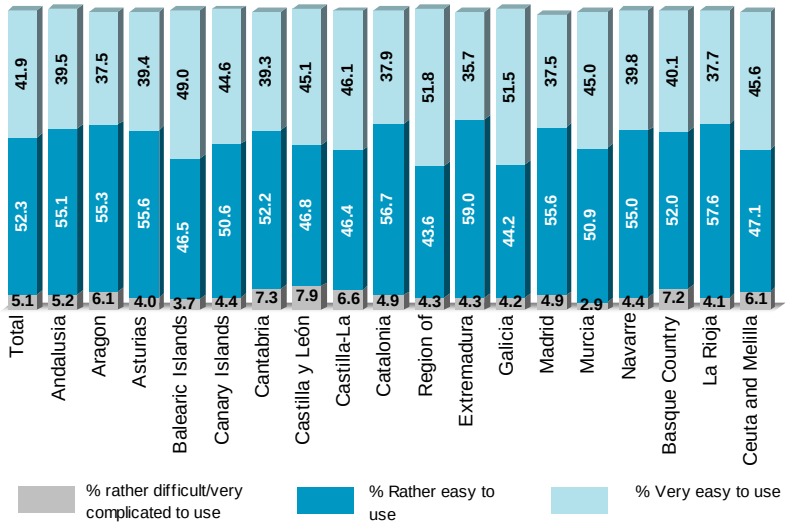
Base: Individuals aged between 16 and 74
The ONTSI (Spanish Observatory for Telecommunications and Information Society) considers Ceuta and Melilla jointly

Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society)

More than 90% of Internet users consider the Internet to be very simple or even easy to use, leaving a very small percentage of users who consider using the Internet to be difficult or complicated. These experiences could be considered important when evaluating the potential growth of the Internet in Spain, alluding to a positive rate of growth in the number of Internet users, not only at a national level but also at a regional level.

Castilla-Leon, Cantabria and the Basque Country are home to more than 7% of Internet users who consider the Internet to be difficult or very complicated to use. The regions of Valencia, Galicia and the Balearic Islands have the highest percentages of users who consider the Internet to be very simple to use.

Figure 140. Experience of Internet use 2008 (%)



Base: Internet Users
The ONTSI (Spanish Observatory for Telecommunications and Information Society) considers Ceuta and Melilla jointly

Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society)

For nine out of ten users, the Internet has exceeded their expectations

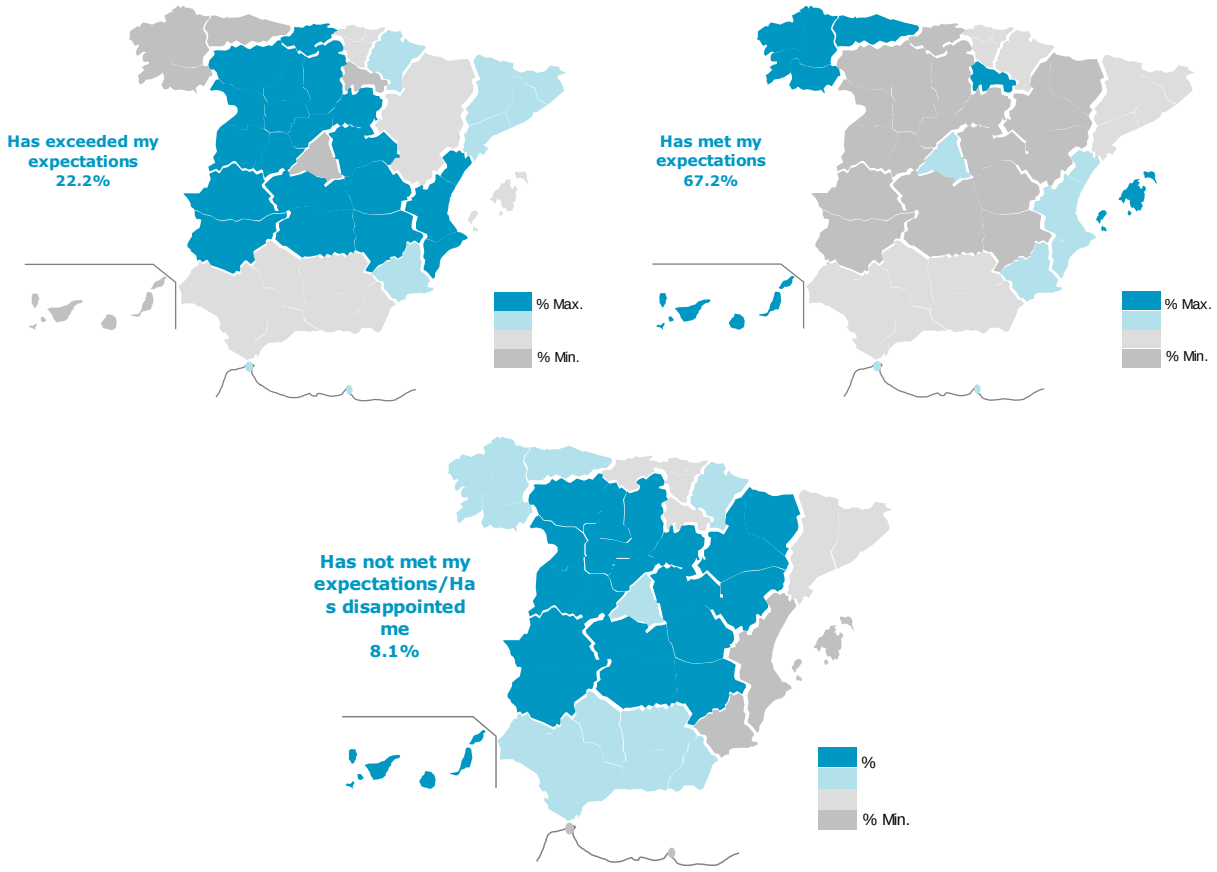
In addition to the generalised good experience that users have in relation to the Internet, one very positive aspect is the degree to which users consider the Internet to have met their expectations.

For nine out of every ten users, not only has the Internet met their expectations, it has exceeded them. Only 8%, that is, less than one in every ten people, claim that the Internet has not met their expectations or that they have been disappointed with the Internet.

Most users fall into the category "has met my expectations" which accounts for 67.2% of the 75% of positive expectations. The 22.2% of users whose expectations have been exceeded accounts for the remaining 25%.

Castilla-La Mancha, Castilla-Leon and Extremadura have both extremes, being the regions with the highest percentages of users whose expectations have been exceeded and users who have been disappointed. La Rioja (74.7%), Balearic Islands (71.1%), Galicia (70.9%), Asturias (70.4%) and Canary Islands (70%), head the ranking of regions with users who consider their expectations to have been met.

Figure 141. Expectations of Internet use 2008 (%)



Base: Internet Users
The ONTSI (Spanish Observatory for Telecommunications and Information Society) considers Ceuta and Melilla jointly

Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society)

There is an extensive range of Internet services, whose use varies considerably. There are services with a large number of followers, which are used by between 60%-80% of users; the largest group, consisting of almost a dozen services, has an important number of users (between 30%-60%); while the last group has the lowest percentages of users (5%-30%).

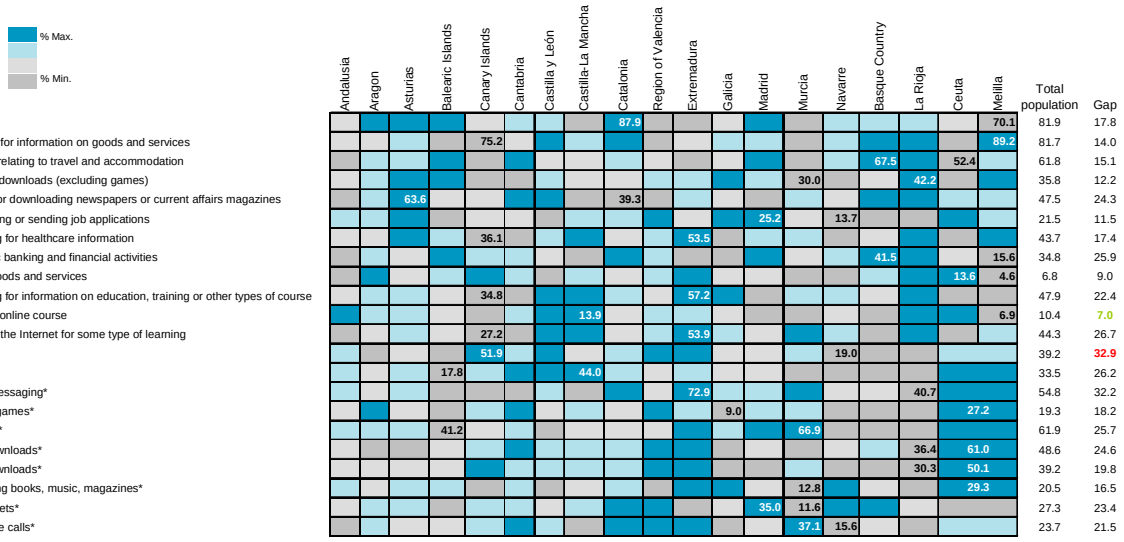
More than 80% of Internet users use the Internet for e-mail and searches for information on goods and services.

The Internet services most widely used by Internet users are e-mail and searches for goods and services, used by more than 80% of users in both cases. These are followed by the use of the Internet as a study support and for services related to travel and accommodation, used by 61.9% and 61.8% of users respectively. Lesser used services include the sale of goods and services accounting for less than 10% of Internet users.

Another aspect of the analysis on Internet use considers the range between the maximum and minimum values in the autonomous regions as a whole. The smallest

gap is found among Internet users who use the Internet for courses or for selling goods and services, with a difference of less than 10 pp in each case. The opposite is true for chat and instant messaging, considered to be two very similar and related types of service, with differences of more than 30 pp.

Table 12. Uses of the Internet by autonomous region 2008



Base: Individuals who have used the Internet in the last three months
The ONTSI (Spanish Observatory for Telecommunications and Information Society) considers Ceuta and Melilla jointly

Source: INE (Spanish Statistics Institute)
**** Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society)***

The Networked Society 2008
Annual report

9. ICT in Spanish SMEs and large companies

9. ICT IN SPANISH SMEs AND LARGE COMPANIES

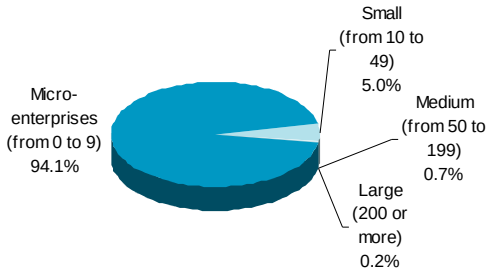
This chapter analyses the degree to which information and communications technology has been adopted by Spanish companies with 10 or more employees and the main uses of the networks, with particular emphasis on the use of ICTs for administrative and production management, Internet and electronic commerce.

The sector analysis highlights the extent to which business activity influences different preferences for technology and using the Internet.

Business structure in Spain

According to figures from the DIRCE (Central Company Directory; DIRCE 2008) the number of companies in Spain has risen to 3,422,239, of which 94.1% are micro-companies (from 0 to 9 employees) and the remaining 5.9% are small, medium-sized and large companies.

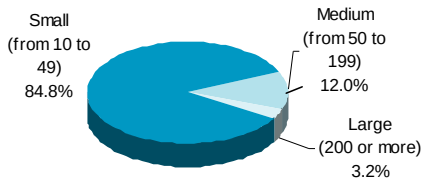
Figure 142. Distribution of companies in Spain by number of employees



All companies: 3.422.239

Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society) based on DIRCE (Central Company Directory) data for 2008

Figure 143. Distribution of companies with 10 or more employees



all companies

with 10 or more employees: 202.846

Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society) based on DIRCE (Central Company Directory) data for 2008

Within the classification analysed in this section, companies with 10 or more employees outnumber those with lower staff numbers, with 84.8% classified as "small" with 10 to 49 employees Likewise, the "SME" group, which includes small and medium-sized companies (between 10 and 199 employees), accounts for 96.8% of companies with 10 or more employees.

Analysing distribution by economic sector, the activities with the highest number of companies are construction, accounting for 22.1% of all companies with 10 or more employees, and industry, accounting for one fifth (21.4%). Following these are business activities (professional activities, R&D, real estate, etc.) and wholesaling, with 12% and 10.1% respectively. The survey[23] used in this analysis is based on

[23] Survey on the Use of Information and Communication Technologies and Electronic Commerce 2007-2008, carried out by the Spanish Statistics Institute

companies in the 10 sector groups indicated in the table, which account for 83.3% of all Spanish SMEs and large companies.

Table 13. Sector grouping of companies with 10 or more employees in Spain

Sectors included in the survey				
No.	**Group name**	**CNAE (Spanish Economic Activity Code)**	**companies**	**% of total companies**
1	**Industry**	15 to 41 Industry	43,328	21.4%
2	**Construction**	45 Construction	44,868	22.1%
3	**Sale and repair of motor vehicles**	50 Sale, maintenance and repair of motor vehicles, motorcycles and mopeds	6,701	3.3%
4	**Wholesale Trade**	51 Wholesale trade and intermediaries, except motor vehicles and motorcycles.	20,476	10.1%
5	**Retail Trade**	52 Retail trade, except motor vehicles, motorcycles and mopeds	10,223	5.0%
6	**Hotels, Campsites and Travel Agencies**	551, 552, 633 Hotel, Campsites and Travel Agencies	3,987	2.0%
7	**Transport and related activities and Postal Services**	60 to 63 and 641 (excluding 633) Transport and related activities and Postal Services	10,165	5.0%
8	**Information Technology, Telecommunications, Audiovisual Services**	72,642,921,922 Information Technology, Telecommunications, cinema and video, radio and television	3,710	1.8%
9	**Business, Real Estate and R&D activities**	70,71,73,74	24,293	12.0%
		70 and 71 Real estate activities and Machinery rental	5,202	2.6%
		73 R&D	329	0.2%
		74 Other business activities (legal, technical services: architecture, engineering..., Tests and technical analyses, etc.)	18,762	9.2%
10	**Financial sector**	65 to 67 Financial activities	1,297	0.6%
Total companies in the sectors covered by the survey (Universe)			**169,048**	**83.3%**
Other companies (from sectors not covered by the survey)			**33,798**	**16.7%**
TOTAL SPANISH COMPANIES WITH 10 OR MORE EMPLOYEES			**202,846**	**100.0%**

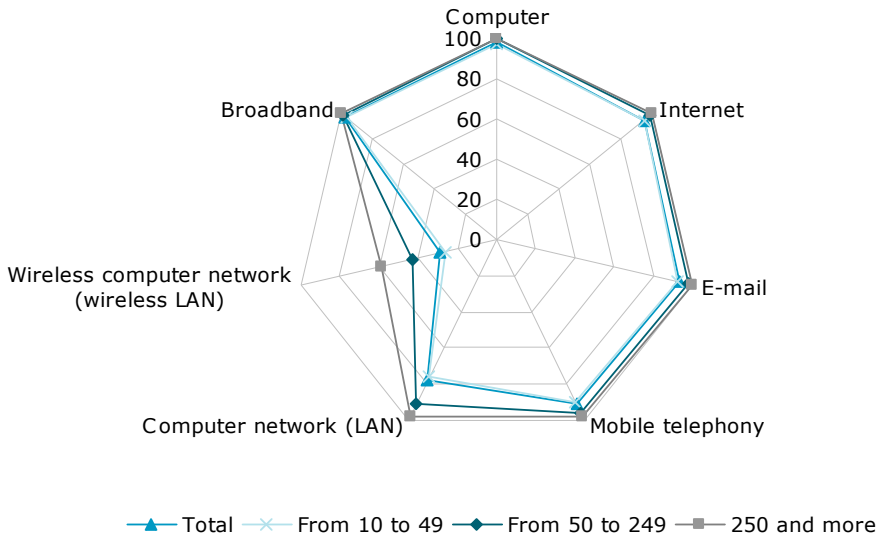
Source: ONTSI (Spanish Observatory for Telecommunications and Information Society) based on DIRCE (Central Company Directory) data for 2008

9.1. Access and network devices

There is a high degree of maturity among Spanish companies in terms of access to basic information and communication technologies, such as computers, Internet connections, mobile telephony and broadband, all of which are present in more than 90% of SMEs and large companies.

With regard to more advanced infrastructures, such as local area networks (LAN[24]) and wireless networks (wireless LAN), although penetration is lower than for computers and the Internet, there has been significant growth over the last year, as we shall see further on.

Figure 144. ICT infrastructure and connectivity by type of company (%)



Base: all companies with 10 or more employees

Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society) based on INE (Spanish Statistics Institute) for 2008

A total of 97.8% of companies with 10 or more employees have a computer and 78.5% have a local area connection (7.6 pp more than the previous year). Wireless computer connections are also increasingly used, and in 2008 they were used by three out of every ten companies, with growth of 10 points in the last year.

Spanish companies are increasingly choosing a broadband Internet connection instead of connections via a modem and ISDN. Of the 94.9% of companies with 10 or more employees with an Internet connection, more than 97% access the Internet via broadband, 2 points more than the previous year.

A total of 98% of SMEs and large companies have a computer and 95% have Internet access

[24] Local Area Networks (LAN):): Communication network between computers located in the same building or nearby buildings that enables users to exchange data and share resources.

Table14: Availability of ICT infrastructure by company size (%)

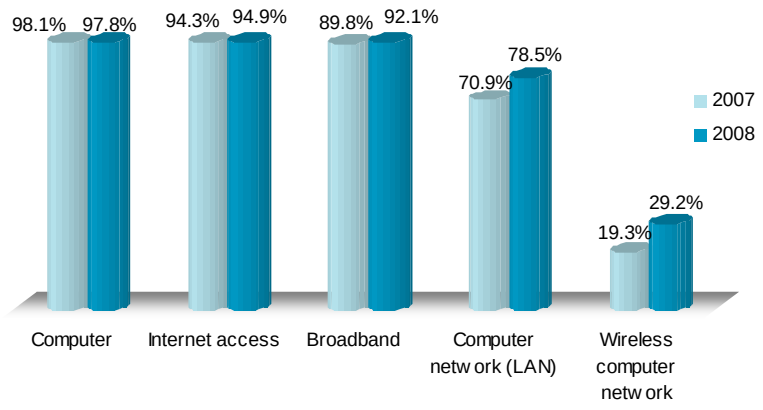
Total companies	Total	From 10 to 49	From 50 to 249	250 and more
Computer	**97.8**	97.5	99.6	99.9
Internet	**94.9**	94.2	98.6	99.7
E-mail	**93.3**	92.4	98.3	99.7
Mobile telephony	**91.2**	90.3	96.0	97.9
Computer network (LAN)	**78.5**	76.1	90.5	98.0
Wireless computer network (wireless LAN)	**29.2**	26.4	42.3	59.3
Broadband	**92.1**	91.2	97.2	99.3
Intranet (website for internal use)	**18.2**	14.0	35.5	77.3
Extranet	**9.1**	6.6	18.5	53.9

Base: all companies with 10 or more employees

Source: ONTSI using INE 2008 data

Web pages exclusively for internal use such as intranets[25] and extranets[26] are less widely used, with 18.2% of companies with 10 or more employees having access to an intranet, and 9.1% with an exterior connection to their intranet (extranet). However, medium-sized companies (50 to 249 employees) and large companies (250 or more) have, to a large extent, both intranet and extranet, with intranets found in 35.5% of medium-sized companies and 77.3% of large companies.

Figure 145. Evolution of the main ICT indicators



Base: all companies with 10 or more employees

Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society) based on data for INE2008

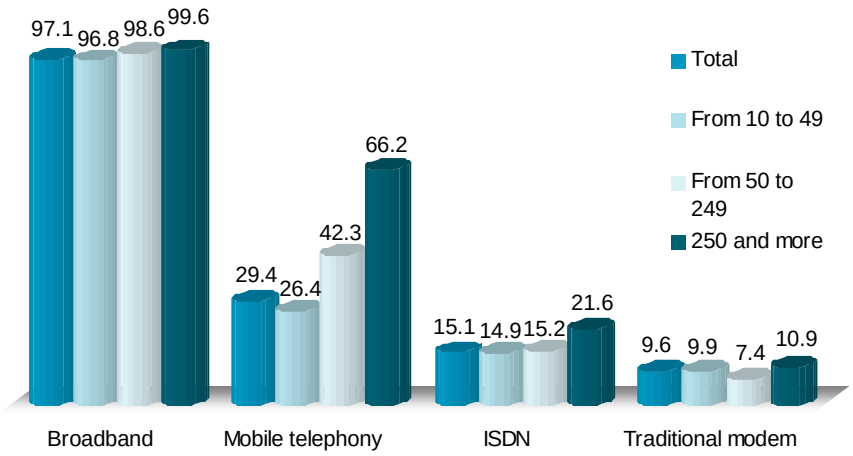
[25] Intranet: Internal network of an organisation that provides content and services for the exclusive use of the organisation, usually based on Internet standards.

[26] Extranet: Secure extension of the Intranet enabling an external user to access some parts of the organisation's Intranet.

Type of Internet connection

A total of 97.1% of SMEs and large companies with Internet, connect via broadband, with the most widely used technology being XDSL (ADSL, SDSL, …), used in 94.4% of cases.

Figure 146. Type of Internet connection



Base: all companies with 10 or more employees with Internet

Source: ONTSI using INE 2008 data

Internet access via mobile telephony continues to gain ground and grew by almost 5 pp to 29.4% of all companies with 10 or more employees compared to the previous year. Specifically, 42.3% of medium-sized companies (with 50 to 249 employees) make use of this technology as do 66.2% of large companies (250 or more employees).

Three out of every ten companies connect to the Internet via mobile telephony

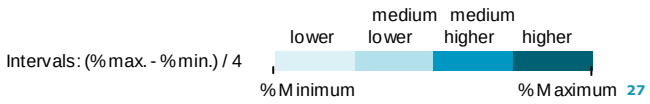
Analysis by sector

Although the availability of equipment and basic access (computer, Internet, mobile telephony) is fairly generalised among companies with 10 or more employees, there are considerable differences between the sectors with regard to local networks for internal use (LAN computer networks, intranet, extranet).

More than 90% of companies in the wholesale trade, hotel, travel agency, telecommunications and financial sectors use local LAN networks compared to the average of 78.5%. In terms of web pages for internal use (intranet), only the IT, telecommunication and financial sectors have penetration rates of over 50%.

Table15: ICT infrastructure and access by sector (%)

% companies which had:	Total Spain	Industry	Construction	Sale and repair of vehicles	Wholesale commerce	Retail commerce	Hotels and travel agencies	Transport and postal services	Computers and telecommunications	Business activities	Finance
Computers	97.8	98.0	96.1	99.9	99.9	96.6	99.9	96.8	100.0	98.5	100.0
Internet Connection	94.9	94.7	91.5	99.7	98.5	90.8	99.1	94.1	99.9	97.5	100.0
Electronic mail: (e-mail)	93.3	93.0	90.0	99.1	97.5	86.1	98.4	92.3	99.3	96.5	100.0
Broadband	92.1	91.7	88.9	97.3	95.3	87.8	97.1	91.2	99.6	94.9	100.0
Mobile telephony	91.2	89.4	94.9	89.3	95.7	82.2	77.1	94.1	96.4	88.7	93.2
Local Area Network	78.5	78.4	66.5	86.9	90.8	76.0	89.9	78.6	95.8	84.8	99.2
Wireless Local Area Network	29.2	26.8	23.6	35.9	34.0	25.9	46.5	27.6	60.0	32.8	38.2
Intranet (web page for internal use)	18.2	17.4	6.7	26.3	22.8	18.0	29.7	20.6	60.5	25.8	64.0
Extranet	9.1	8.0	1.8	12.7	13.0	9.1	16.2	13.0	38.7	13.7	46.1



27

Base: all companies with 10 or more employees

Source: ONTSI using INE 2008 data

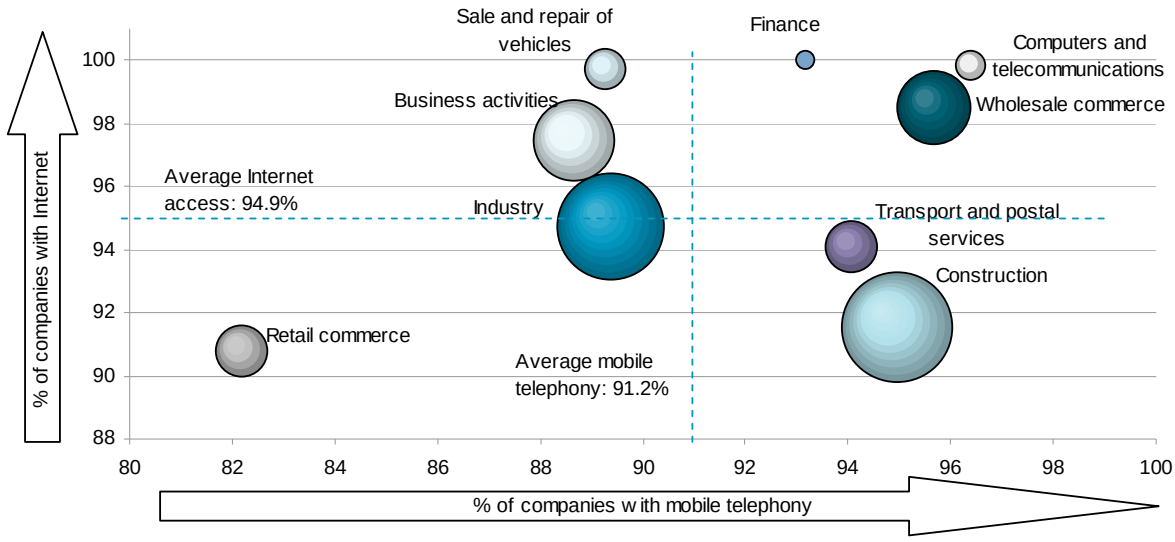
Employees' different mobility requirements for performing their duties are reflected in the bubble graph which shows the level of availability of Internet compared to the availability of mobile telephony for business use.

For example, although the construction, transport and mail sectors lag behind with regard to Internet access, they have above average figures for availability of mobile telephony.

The construction, transport and mail sectors, despite lagging behind in terms of Internet access, exceed the average for availability of mobile telephony

[27] The colour scale indicates the interval to which each sector belongs, which is calculated for each use taking the maximum percentage for each sector, less the minimum, and dividing it into four sections or intervals: low, low average, high average and high. The dark blue colour corresponds to the high interval and the lightest blue to the low interval.

Figure 147. Companies with Internet access vs. companies with mobile telephony (%)



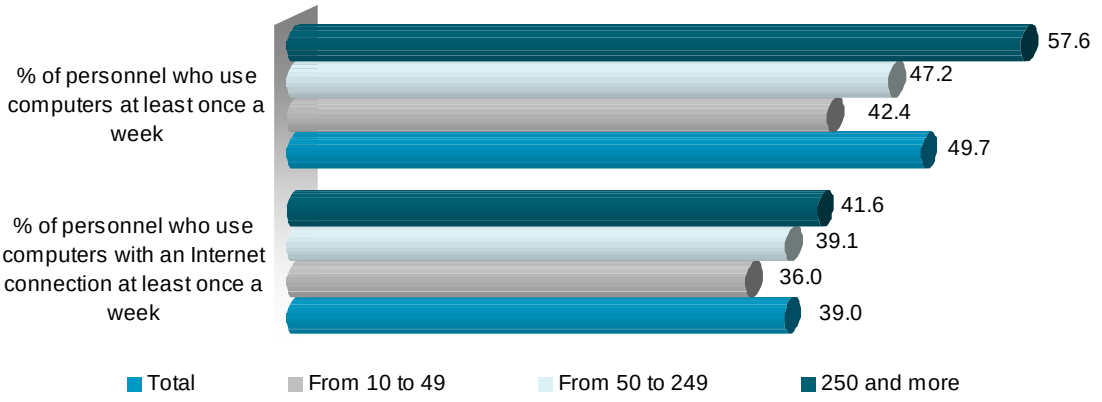
Base: all companies with 10 or more employees
Note: the size of the bubble is proportional to the number of sector companies

Source: ONTSI using INE 2008 data

9.2. Use of ICTs by employees

Half of all employees in SMEs and large companies use a computer at least once a week and four out of ten use a computer with an Internet connection.

Figure 148. Staff who use computers and computers connected to the Internet, at least once a week (%)



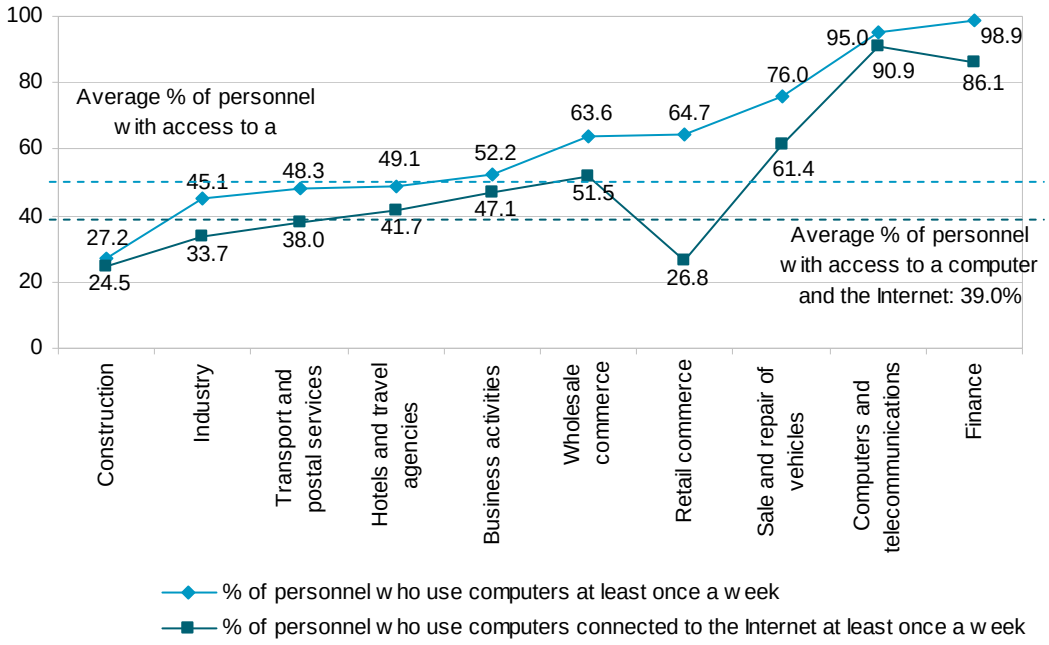
Base: all employees in companies with 10 or more employees

Source: ONTSI using INE 2008 data

At a sector level, the percentage of staff that uses computers varies from just under 30% in the construction sector to 100% in the finance sector.

In general, the difference between the percentage of staff that use computers and the percentage that use computers with Internet is 10 pp, with the exception of the retail sector, where the percentage of the workforce who use computers connected to the Internet is almost 40 pp less.

Figure 149. Staff who use computers and computers connected to the Internet, at least once a week (%)



Base: all employees in companies with 10 or more employees

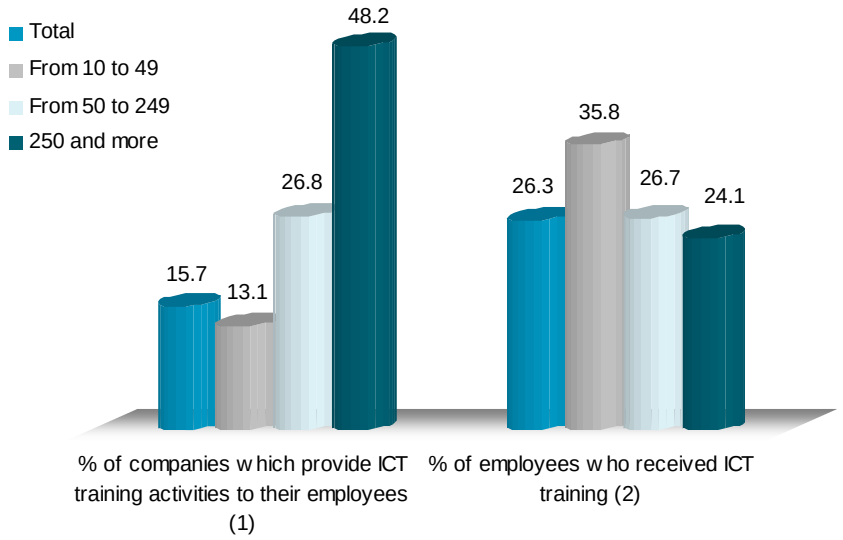
Source: ONTSI using INE 2008 data

The changing and dynamic characteristics of ICT products and services means that there is a need to train staff on an ongoing basis in companies that offer or use them.

An average of 15.7% of SMEs and large companies provide ICT training activities, 6.4 pp more than the previous year.

More than a quarter (26.3%) of the workforce of companies that provide ICT training benefited from this training. Larger companies (250 or more employees) are still the most active in this area, with almost half (48.2%) having provided training.

Figure 150. ICT training for employees (%)



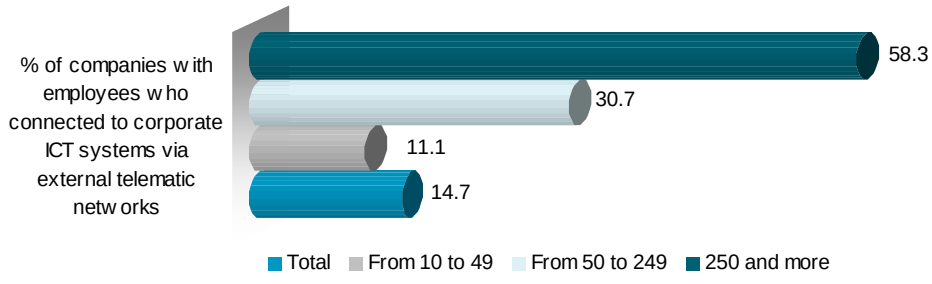
Base 1: total companies with 10 or more employees
Base 2: all employees from companies with 10 or more employees that provided ICT training

Source: ONTSI using INE 2008 data

One of the benefits of ICTs for employees and their companies is the opportunity they provide for teleworking, mainly used in large companies. A total of 58.3% of this subgroup of companies have employees who connect to their ICT systems via external telematic networks so they can work away from the company's premises at least half a day per week.

The home has strengthened its position as a point of connection for

Figure 151. Companies with employees who connect to the company's ICT systems via external telematic networks in order to work, at least half a working day (%)



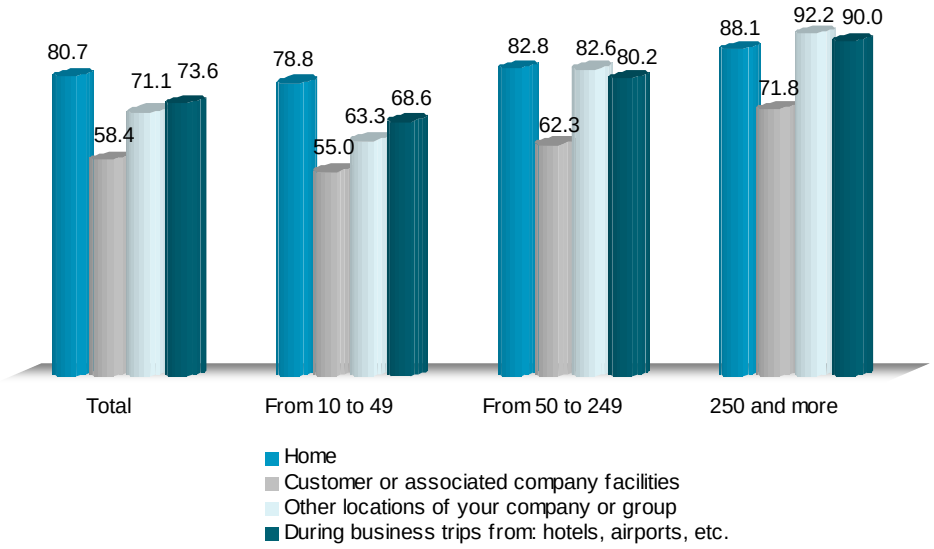
Base: total companies with 10 or more employees

Source: ONTSI using INE 2008 data

In general terms, almost 14.7% of all companies with 10 or more employees use this kind of remote work. Employees in these companies can connect from their homes, from the facilities of clients or business associates, other locations within their company or, during business trips, in hotels, airports, etc.

The number of companies with employees that connect from each of these points does not vary significantly, with companies with employees that connect from home (80.7%, 10 pp more than the previous year) being the most common.

Figure 152. Companies whose employees connect to the company's ICT systems via external telematic networks, by place of connection (multiple response - %)



Base: companies with 10 or more employees with employees who connected to their ICT systems via external networks to work at least half a day per week

Source: ONTSI using INE 2008 data

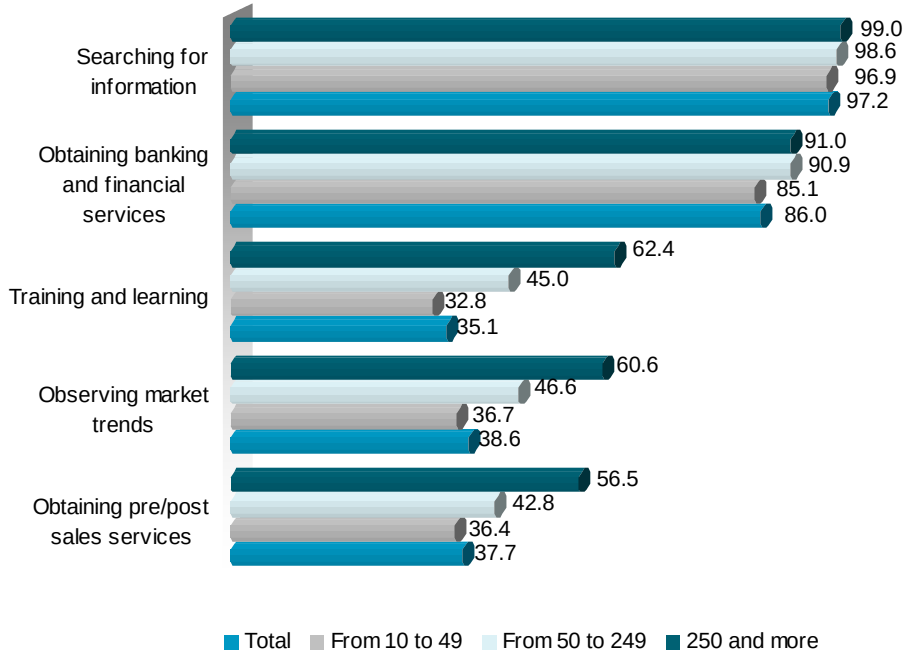
9.3. Internet

Internet use

The Internet is still mainly used for information searches (97.2%) and accessing banking and financial services (86%) within 94.9% of SMEs and large companies who access the Internet.

There has been significant growth in the last year in the number of companies that make use of more Internet services, for example, companies that access after-sales or pre-sale services (37.7% with an increase of 11 pp), and that use the Internet to monitor market behaviour (38.6% with an annual increase of 6 pp).

Figure 153. Main uses of the Internet (%)



Base: companies with 10 or more employees with Internet

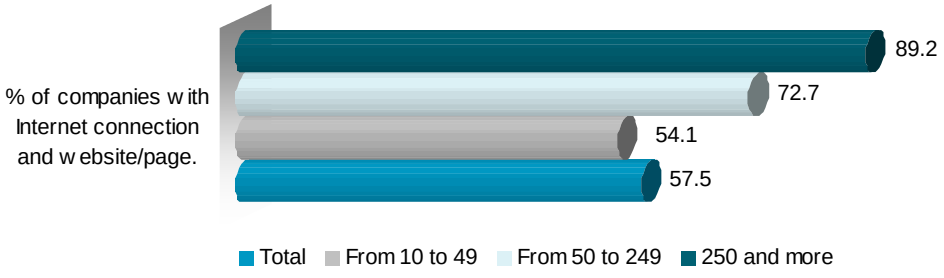
Source: ONTSI using INE 2008 data

Web page

One of the main advances in relation to the previous year is the greater proliferation of websites. A total of 57.5% of companies with Internet access have a website, over 5 pp more than in previous year. For the first time, more than half (54.1%) of small companies have a website and among medium-sized companies, the figure is over 72%.

Increase of 5% in the number of companies with a website to 57.5% of all companies.

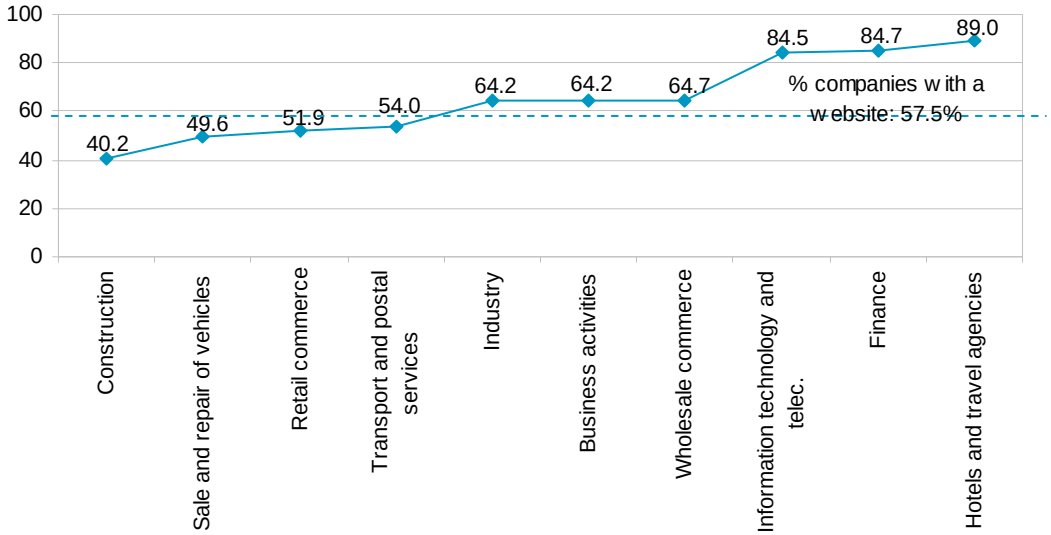
Figure 154.Companies with a website (%)



Base: companies with 10 or more employees with Internet

Source: ONTSI using INE 2008 data

Figure 155. Companies with a website by sector (%)

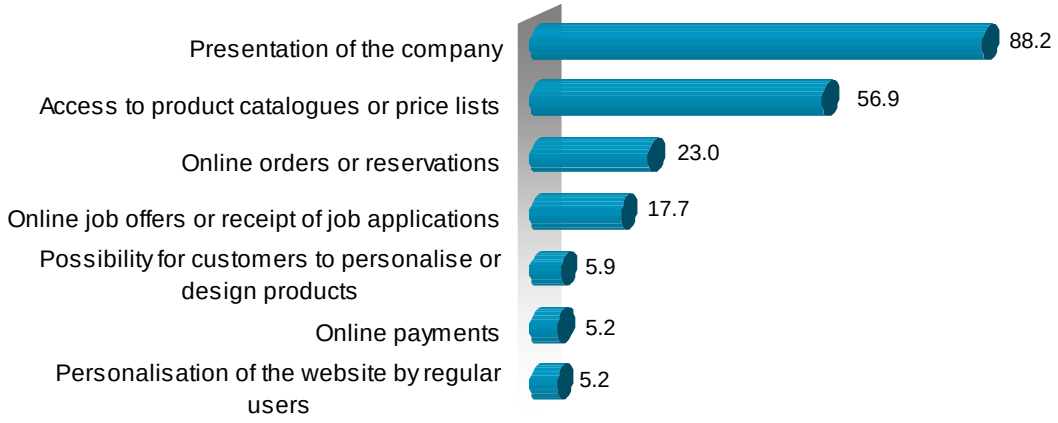


Base: companies with 10 or more employees with Internet

Source: ONTSI using INE 2008 data

Almost 9 out of 10 companies in the hotel and travel agency sector have a website, making them leaders in this use of the Internet. The percentages are equally high for financial, IT and telecommunications activities, accounting for 84%-85% of all companies. At the other end of the scale is the construction sector, in which 4 out of every ten companies has a website.

Figure 156. Objectives / services of corporate websites (%)



Base: companies with 10 or more employees with Internet access and website

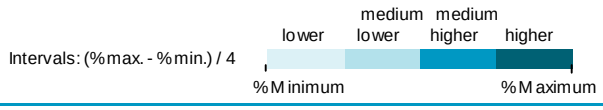
Source: ONTSI using INE 2008 data

In terms of the objectives and services provided by websites, a total of 88% of companies with 10 or more employees with a website use it to publicise the characteristics of their company and the type of products and services they offer. Following this, and with a clear improvement on the previous year, almost 57% provide access to product catalogues and price lists (an increase of 12 pp). In another step towards completing transactions, 23% of companies allow customers to place orders or make bookings online.

The greatest variety of services are found on the websites of companies dedicated to financial activities and hotels and travel agencies. Hotels and travel agencies are the leaders in the provision of services that enable customers to purchase or book their products, with 77% of companies offering online ordering or booking and 31% accepting payment via the Internet. With a different set of objectives, the IT and telecommunications sector is notable for its use of websites to publicise job offers and to receive job applications, used in 43% of cases.

Table16: Objectives / services of corporate websites by sector (%)

% companies which had:	Total Spain	Industry	Construction	Sale and repair of vehicles	Wholesale commerce	Retail commerce	Hotels and travel agencies	Transport and postal services	Information technology and telec.	Business activities	Finance
Presentation of the company	88.2	90.3	82.1	85.1	87.8	86.8	97.9	88.4	93.8	88.4	97.5
Access to product catalogues or price lists	56.9	65.0	32.6	62.2	68.2	54.4	88.0	46.4	65.4	51.4	82.9
Online orders or reservations	23.0	18.6	14.6	28.2	21.3	29.8	77.0	30.1	24.0	21.8	45.1
Online job offers or receipt of job applications	17.7	9.2	16.4	13.2	14.9	22.5	23.7	20.2	42.9	30.5	36.9
Possibility for customers to personalise or design products	5.9	5.1	2.3	18.1	5.7	2.5	14.6	10.8	11.6	4.6	25.5
Online payments	5.2	4.3	0.3	3.5	3.8	11.6	31.0	5.6	11.7	3.9	26.1
Personalisation of the website by regular users	5.2	3.5	3.0	3.7	5.4	5.8	8.2	12.1	10.9	6.6	22.6



Base: companies with 10 or more employees with Internet access and website

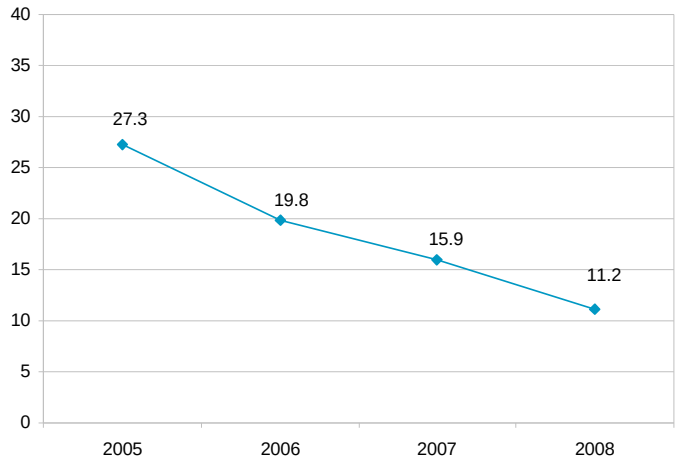
Source: ONTSI using INE 2008 data

IT security

There has been a marked decline in IT security problems. The percentage of SMEs and large companies that have had a security problem in the last twelve months has fallen from 27.3% in 2005 to 11.2% in 2008. The difference by size of company is minimal, with a higher percentage among large companies (15.1%).

The number of companies with security problems has fallen by more than half in three years.

Figure 157. Evolution in the percentage of companies that had some type of security problem in the last 12 months (%)

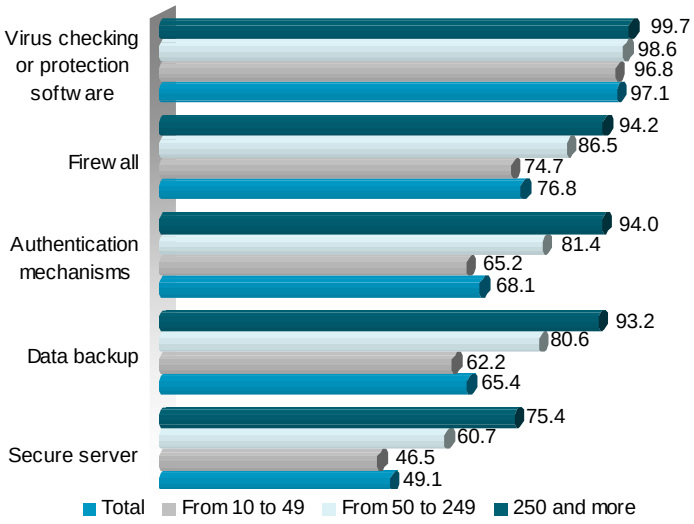


Base: companies with 10 or more employees with Internet connection

Source: ONTSI using INE 2008 data

Irrespective of company size, the main problem is computer viruses, worms or trojan horses affecting 10.6% of all companies with Internet access. The frequency of all other problems is very low; only 1% of companies have experienced unauthorised access to their computer system or data and 0.6% have experienced financial fraud (e.g. phishing).

Figure 158. Companies that use internal security services, by type of service (%)



Base: companies with 10 or more employees with Internet connection

Source: ONTSI using INE 2008 data

More than 81% of medium-sized companies and 94% of large companies use authentication mechanisms

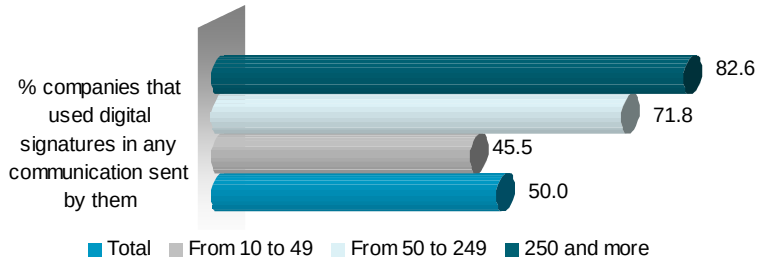
Companies are increasingly introducing measures to protect their systems and to ensure the privacy and the integrity of the information they manage. In companies with 10 or more employees, virus protection or checking software is the most common security service used, found in 97.1% of companies. This is followed by firewalls used by 76.8%, and authentication mechanisms, 68.1% and data back up, 65.4%. The availability of security mechanisms is significantly higher than the average in both medium-sized and large companies, by approximately 10 pp and 20 pp (except for the availability of antivirus, for which the figures are practically the same).

Authentication mechanisms, which make it possible to connect to the company's systems through user identification and verification, are available in more than 81% of medium-sized companies and in 94% of large companies.

Digital signature

Five out of ten companies use a digital signature[28] in some communication with external agents, a figure which rises to seven out of ten and eight out of ten for medium-sized companies and large companies respectively. In these companies, the digital signature is mainly used in dealings with the public administration (91.7%), while 19.8% use it when dealing with their customers or suppliers.

Figure 159. Companies that use a digital signature (%)



Base: companies with 10 or more employees with Internet connection

Source: ONTSI using INE 2008 data

9.4. e-Business

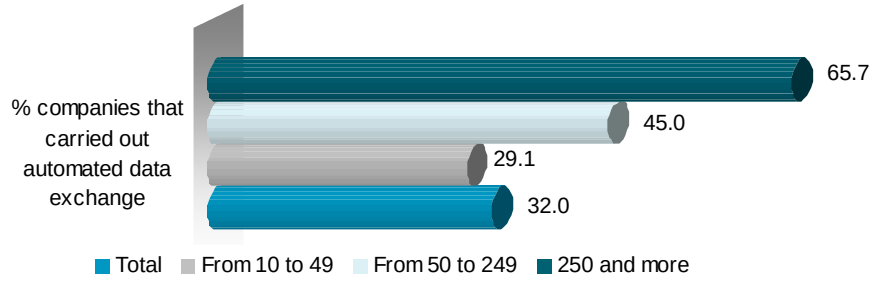
ICTs fulfil their role in a company if they facilitate and transform the company's business processes, both in relation to internal administrative and production management and relationships with customers, suppliers and the main agents within their sphere of activity.

[28]Digital signature: Encoded information that identifies the author of an electronic document and authenticates his or her identity. It is unique and specific to the user or computer, as in the case of manual signatures.

Automated data exchange with external ICT systems

A total of 32% of companies with 10 or more employees carry out automated data exchange [29]with other external ICT systems, doubling to 65.7% for large companies.

Figure 160. Companies that perform automated data exchange with external ICT systems (%)

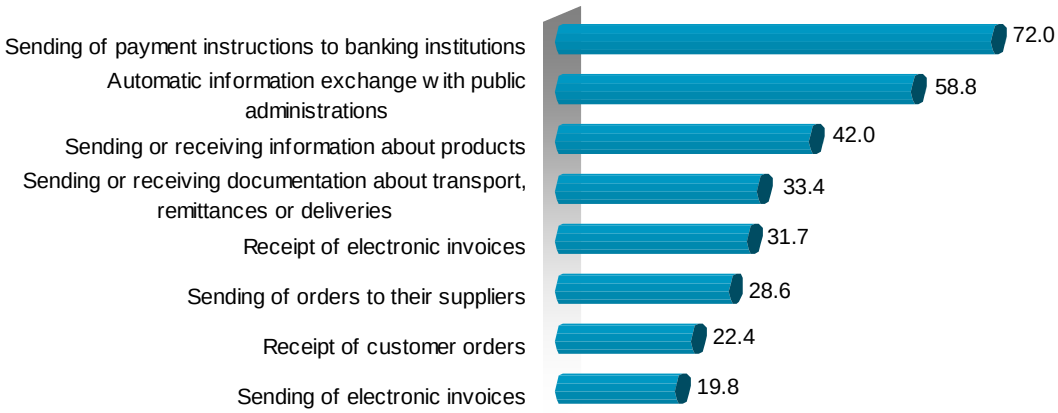


Base: all companies with 10 or more employees

Source: ONTSI using INE 2008 data

The main recipients of companies' electronic communications are banks and the public administration. Specifically, of the companies that exchange data with external ICT systems, 72% send payment instructions to banking institutions and 58.8% exchange information with public administrations.

Figure 161. Type of automated data exchange with external ICT systems (ranked by reason for the communication %)



Base: companies with 10 or more employees who perform automated data exchange with external ICT systems

Source: ONTSI using INE 2008 data

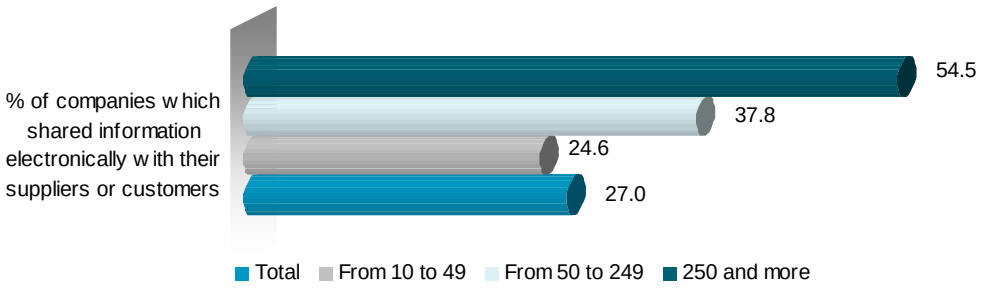
[29] Automated data exchange between the company and other external ICT systems, comprising the exchange of information (for example, orders, invoices, payment transactions or product descriptions) via the Internet or other telematic networks, in an agreed format that will allow automatic processing (for example, XML, EDIFACT, etc.). Hand-written electronic mail is not included in the concept of automated data exchange.

With a lower frequency, between 20% and 42% of companies send and receive information about their products, logistics documentation, electronic invoices and customer/supplier orders.

Electronic exchange of information with suppliers and customers

A total of 27% of companies regularly exchange information with their suppliers or customers via telematic networks (Internet or other connections excluding hand-written e-mails).

Figure 162. Companies that share information electronically with their suppliers or customers (%)

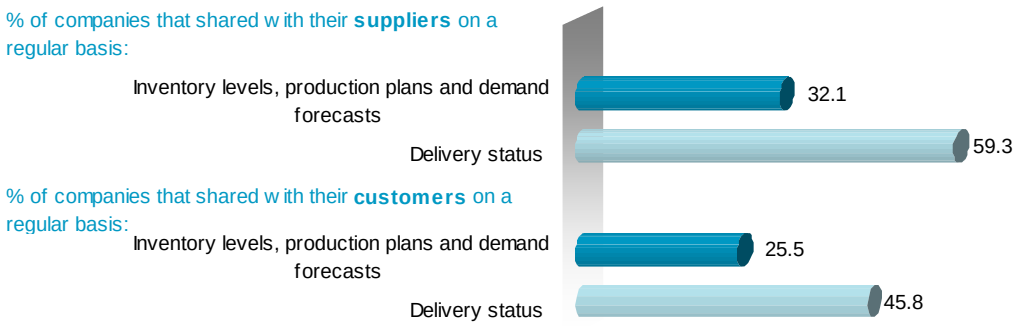


Base: all companies with 10 or more employees

Source: ONTSI using INE 2008 data

The main reason for electronic communications with suppliers and customers is to enquire about the status of deliveries. Some 59.3% of companies that exchange information with suppliers or customers regularly check the delivery status with their suppliers and 45.8% with their customers. With a lower frequency, 32.1% exchange information about inventory levels, production plans and demand forecasts with their suppliers and 25.5% with their customers.

Figure 163. Type of information shared electronically with suppliers and customers (%)



Base: companies with 10 or more employees who regularly share information electronically with their suppliers or customers

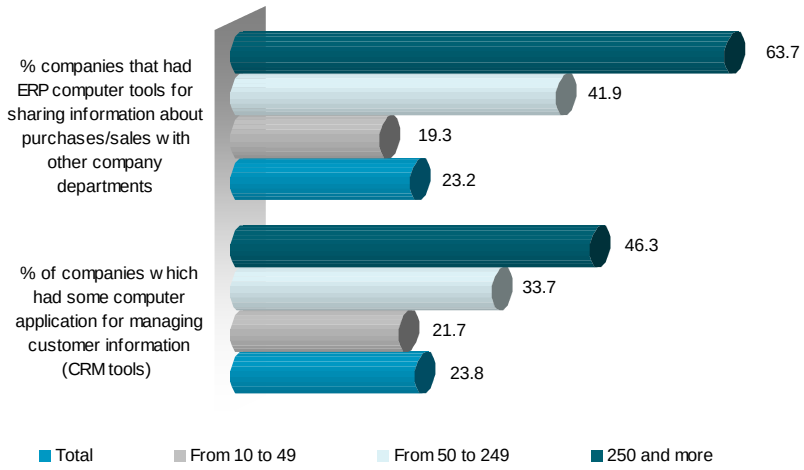
Source: ONTSI using INE 2008 data

ERP and CRM tools

ERP[30] (Enterprise Resource Planning) computer tools for sharing purchase and sales information with other departments within the company (for example, finance, management, marketing...) are present in 23.2% of companies, almost double the figure of 12.5% recorded for the previous year.

A total of 23.8% of companies with 10 or more employees have IT applications for managing information about their customers, known as CRM[31] (Customer Relationship Management), both for recording, storing and sharing this information with other departments within the company and for analysing it for commercial and marketing purposes (setting prices, commercial promotions, selecting distribution channels, etc.).

Figure 164. Companies with ERP and CRM IT tools (%)



Base: all companies with 10 or more employees

Source: ONTSI using INE 2008 data

9.5. Electronic commerce:

Companies that use electronic commerce

A total of 21.4% of companies make purchases using electronic commerce, compared to 11% who sell via this means

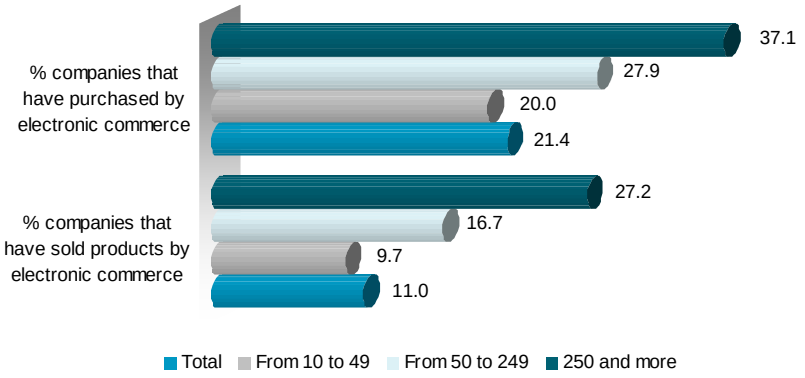
The number of companies that use the Internet to make purchases is still higher than the number of companies prepared to sell via this channel. With

[30] ERP (Enterprise Resource Planning): Group of computer tools which enable the integrated management of processes and information corresponding to the different business departments within a company. Generally, an ERP system integrates the management of the areas for planning, procurement, logistics, sales, marketing, customer relations, finance and human resources departments.

[31] CRM (Customer Relationship Management) IT tools dedicated to the integrated management of customer information. These applications enable this information to be stored and organised and to be integrated, processed and analysed.

an annual increase of more than 2 pp, a total of 21.4% of companies with 10 or more employees made purchases via electronic commerce[32] in 2007. In the subgroup for medium-sized companies, the figure rises to almost 28% and among large companies, to more than 37%.

Figure 165. Companies purchasing and selling by electronic commerce (%)

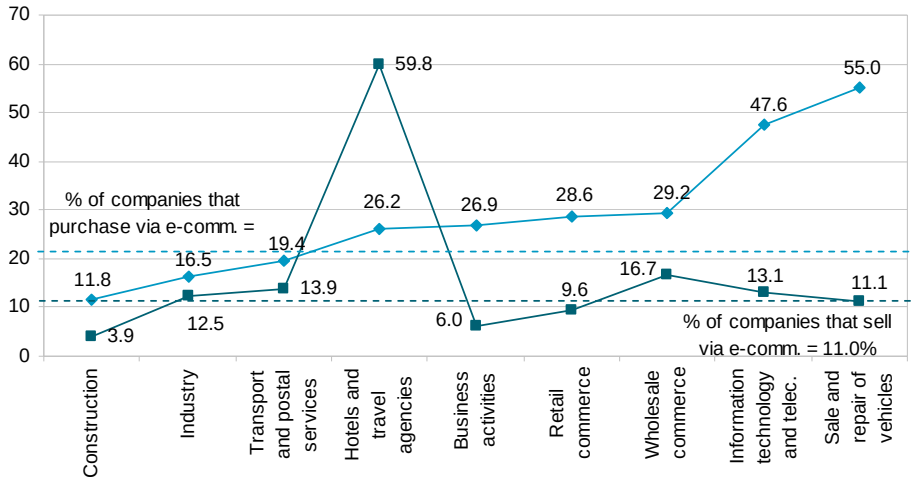


Base: all companies with 10 or more employees

Source: ONTSI using INE 2008 data

There has been a similar increase of 2.2 pp in sales, which for the first time has exceeded 10% of companies (11%). Among larger companies (250 or more employees) almost 3 out of 10 use electronic commerce to sell their products or services.

Figure 166. Companies purchasing and selling by electronic commerce (%)



Base: all companies with 10 or more employees

Source: ONTSI using INE 2008 data

[32] Electronic commerce: e-Commerce is defined as transactions made via networks based on Internet protocols (TCP/IP) or on other telematic networks. The goods and services are contracted via these networks but payment or product delivery may be made offline, via any other channel. Orders made by telephone, fax or hand-written e-mail are not considered as electronic commerce.

Almost 6 out of 10 hotels and travel agencies make sales via electronic commerce

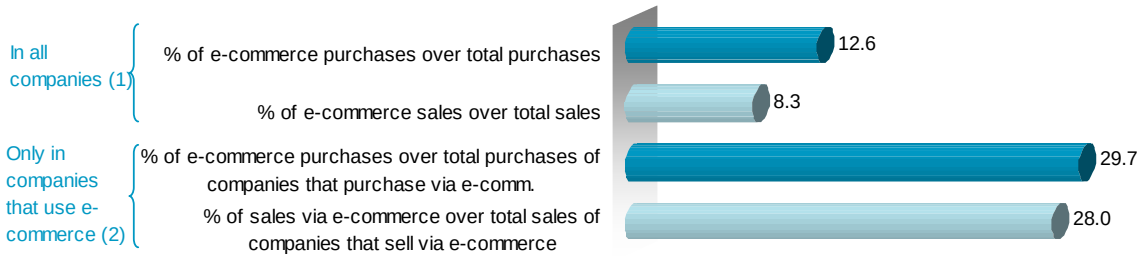
Sector analysis [33] highlights the competitive advantage which hotels and travel agencies gain from sales via electronic commerce. Almost 6 out of every 10 companies in this sector made sales via electronic commerce in 2007, vastly exceeding the figures for all other activities. In the case of sales, around half of companies that sell and repair vehicles (55%) and IT and communications companies (47.6%) make purchases via electronic commerce, and lead the ranking for this service, with double the average.

Significance of electronic commerce

Purchases via e-Commerce in companies that use this channel account for almost 30% of their purchases

Purchases made via e-Commerce account for 12.6% of all purchases made by all SMEs and large companies. The proportion is much higher in companies that have only made purchases via e-Commerce: a total of 29.7% of purchases by companies that have made purchases via electronic commerce, are made through this channel.

Figure 167. Amount of purchases/sales via e-Commerce among all companies vs. amount of purchases/sales via e-Commerce among companies that purchase/sell via e-Commerce (%)



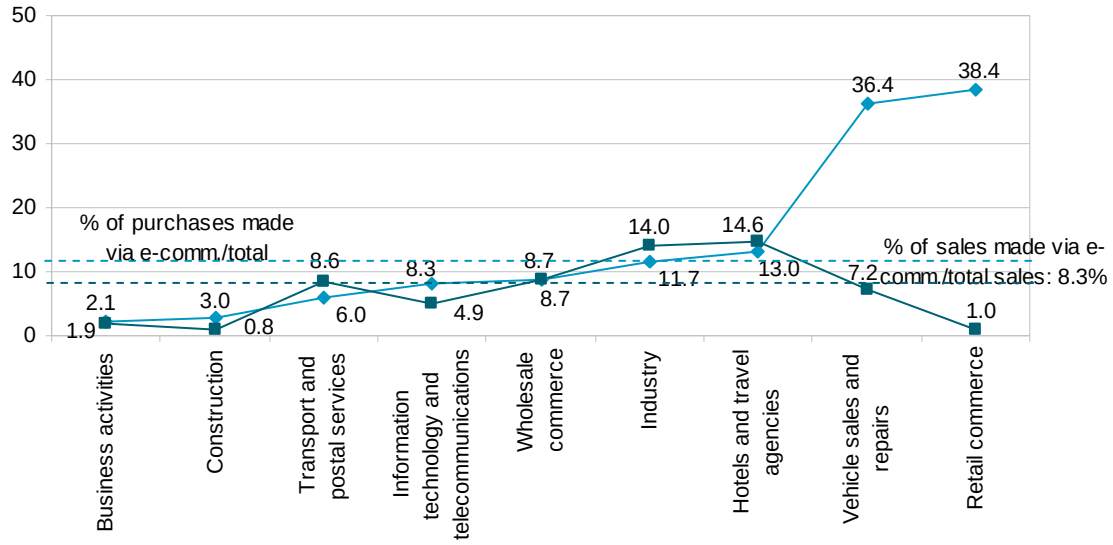
Base 1: Amount of purchases/sales among all companies with 10 or more employees
Base 2: Amount of purchases/sales among companies with 10 or more employees that purchase via e-Commerce

Source: ONTSI using INE 2008 data

In terms of the proportion of sales via e-Commerce, these account for 8.3% of sales among all companies and 28% of sales among companies that sell via e-Commerce. It should be noted that, when referring to the figures that refer only to companies that used e-Commerce, the proportion of sales (28%) and purchases (29.7%) via the Internet are practically the same. This means that, despite the fact that there are fewer companies that sell via e-Commerce compared to the number that purchase, the figure for sales is equally significant.

[33] The electronic commerce survey does not include the financial sector

Figure 168. Amount e-Commerce purchases of the total number of purchases and amount of sales via e-Commerce of the total number of sales, by sector (%)



Base: Amount of purchases/sales among all companies with 10 or more employees

Source: ONTSI using INE 2008 data

Similarly, the sector analysis reveals that, although on average quite a lot more companies make purchases via the Internet than make sales, the proportion of sales via e-Commerce is similar or above that of purchases in some sectors (transport and mail, wholesaling, industry and hotels and travel agencies). Likewise, purchases via e-Commerce account for a large percentage (more than a third) of purchases among retailers (38.4%) and companies that sell and repair vehicles (36.4%).

Purchases via e-Commerce among companies that sell and repair vehicles and retailers account for more than one third of their purchases

The Networked Society 2008
Annual report

10. ICTs in Spanish micro-companies

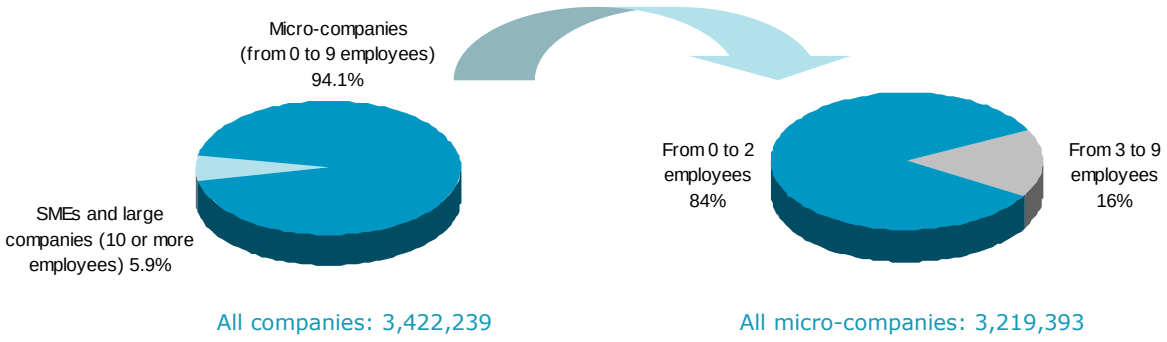
10. ICTS IN SPANISH MICRO-COMPANIES

The analysis of smaller companies, known as micro-companies, deserves special attention. Although they have no more than nine employees, they accounts for 94% of Spain's businesses and show a different sector distribution compared to larger companies. This chapter therefore diagnoses the use of ICTs and electronic commerce by micro-companies and the main barriers to their incorporation.

Business structure in Spain

The number of micro-companies rose to 3,219,393 in 2008, representing 94.1% of all Spanish companies. This group mainly consists of companies with a smaller number of staff, with 84% of micro-companies having a maximum of two employees.

Figure 169. Distribution of companies and micro-companies in Spain by number of employees



Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society) based on DIRCE (Central Company Directory) data for 2008

The main economic activities carried out by micro-companies are construction, retail and business activities. As indicated in the attached table, business and real estate activities account for more than 23% of the total, retail 16.4% and construction 14.2%.

Industry, transport and mail and the wholesale sectors account for 6% and 7% each. This analysis is based on [34] the companies in the ten sector groups indicated in the table, which represent 80% of all Spanish micro-companies.

[34] Survey on the Use of Information and Communication Technologies and Electronic Commerce 2007-2008, carried out by the Spanish Statistics Institute

Table 17. Sector grouping of companies with 10 or more employees in Spain

Sectors included in the survey				
No.	**Group name**	**CNAE (Spanish Economic Activity Code)**	**Total micro-companies**	**% of total micro-companies**
1	**Industry**	15 to 41 Industry	199,296	6.2%
2	**Construction**	45 Construction	456,188	14.2%
3	**Sale and repair of motor vehicles**	50 Sale, maintenance and repair of motor vehicles, motorcycles and mopeds	74,546	2.3%
4	**Wholesale Trade**	51 Wholesale trade and intermediaries, except motor vehicles and motorcycles.	204,632	6.4%
5	**Retail Trade**	52 Retail trade, except motor vehicles, motorcycles and mopeds	526,634	16.4%
6	**Hotels, Campsites and Travel Agencies**	551, 552, 633 Hotel, Campsites and Travel Agencies	29,277	0.9%
7	**Transport and related activities and Postal Services**	60 to 63 and 641 (excluding 633) Transport and related activities and Postal Services	222,279	6.9%
8	**Information Technology, Telecommunications, Audiovisual Services**	72,642,921,922 Information Technology, Telecommunications, cinema and video, radio and television	46,053	1.4%
9	**Business, Real Estate and R&D activities**	70,71,73,74	749,195	23.3%
		70 and 71 Real estate activities and Machinery rental	258,067	8.0%
		73 R&D	17,576	0.5%
		74 Other business activities (legal, technical services: architecture, engineering..., Tests and technical analyses, etc.)	473,552	14.7%
10	**Financial sector**	65 to 67 Financial activities	63,393	2.0%
Total companies in the sectors covered by the survey (Universe)			**2,571,493**	**79.9%**
Other companies (from sectors not covered by the survey)			**647,900**	**20.1%**
TOTAL SPANISH MICRO-COMPANIES			**3,219,393**	**100.0%**

Source: ONTSI (Spanish Observatory for Telecommunications and Information Society) based on DIRCE (Central Company Directory) data for 2008

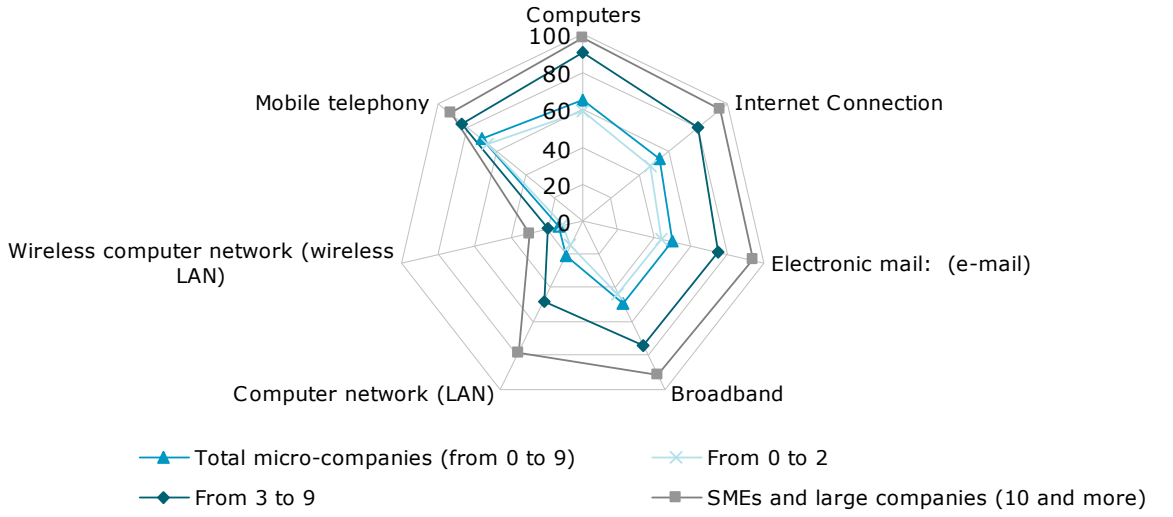
10.1. Access devices and networks

The incorporation of new technologies into Spanish micro-companies is growing rapidly, mainly motivated by the benefits of their specific uses for their business activities. As a result, different uses such as Internet access, use of logistics management applications or e-Commerce for buying or selling, are used to varying degrees according to the economic sector. The large number of micro-companies with very few or no employees were also considered in the analysis. As indicated, 84% of micro-companies had a maximum of two employees, which considerably limited the need to have some type of network infrastructure.

As regards basic information technology and communication devices such as computers and mobile telephones, these were present in 64.7% and 69.1% of micro-companies, respectively. Compared to SMEs and large companies (with ten or more employees), the number of micro-companies with business mobile telephones exceeded that of computers. However, in the segment with three to nine employees, nearly 90% of micro-companies had computers, exceeding the presence of mobile telephony.

The difference in ICT infrastructure in relation to the number of employees is illustrated by the following figure, which shows that companies with three to nine employees obtained very similar results to those with ten or more, mainly due to ICT uses and applications and based on the type of sector activity, as shown in the rest of the analysis.

Figure 170. ICT infrastructure and connectivity by type of company (%)



Base: all companies

Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society) based on INE (Spanish Statistics Institute) for 2008

From the perspective of communication networks, for the first time more than half of micro-companies (53%) accessed the Internet, a not inconsiderable figure considering that only 65% had computers. Micro-companies used e-mail and broadband to a similar extent as the Internet, while proprietary computer networks (LANs[35]) were still slightly above 20%. As regards wireless computer networks (wireless LANs), although penetration was lower, there has been strong growth in recent

Nearly 90% of micro-companies with three to nine employees had computers, while 79% had Internet access.

[35] Local Area Networks (LAN):): Communication network between computers located in the same building or nearby buildings that enables users to exchange data and share resources.

years, rising by 5.4 pp to a total of 12.3% of micro-companies over the last year. However, the percentage of micro-companies with websites for internal use such as intranets[36] and extranets[37] remained at very low levels.

Table18: Availability of ICT infrastructure by company size (%)

% companies which had:	Micro-companies (from 0 to 9)	From 0 to 2	From 3 to 9	SMEs and large companies (10 and more)
Mobile telephony	**69.1**	66.1	83.0	91.2
Computers	**64.7**	59.2	89.8	97.8
Internet Connection	**53.0**	47.3	79.0	94.9
E-mail	**49.1**	43.6	74.3	93.3
Broadband	**48.9**	43.4	74.5	92.1
Computer network (LAN)	**20.9**	14.9	48.0	78.5
Wireless computer network (wireless LAN)	**12.3**	10.9	18.7	29.2
Intranet (website for internal use)	**3.1**	2.5	6.0	18.2
Extranet (external access to the Internet)	**1.5**	1.3	2.4	9.1

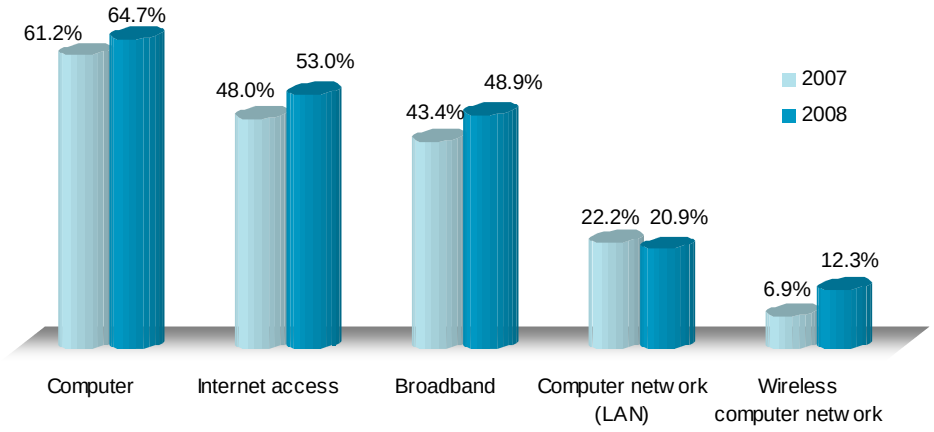
Base: all companies

Source: ONTSI using INE 2008 data

An analysis of the last few years shows a positive trend in ICT incorporation, with the principal increases of more than 5 pp in the use of Internet, broadband and wireless LAN.

Internet, broadband and wireless LANs grew more than 5% in one year

Figure 171. Evolution of the main ICT indicators



Base: All micro-companies

Source: ONTSI using INE 2008 data

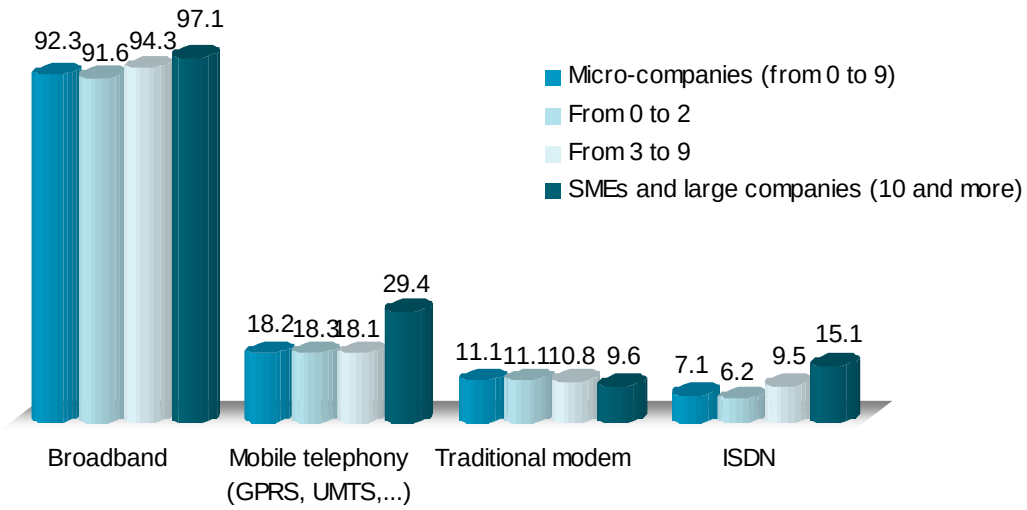
[36] Intranet: Internal network of an organisation that provides content and services for the exclusive use of the organisation, usually based on Internet standards.

[37] Extranet: Secure extension of the Intranet enabling an external user to access some parts of the organisation's Intranet.

Type of Internet connection

A total of 87.8% of micro-companies with Internet access connected using XDSL technology (ADSL, SDSL) and 6.2% using other fixed broadband connections (cable, LMDS,…). Overall, 92.3% of micro-companies with Internet access used broadband, up 2 pp from the previous year.

Figure 172. Type of Internet connection (%)



Base: total companies with Internet

Source: ONTSI using INE 2008 data

Mobile telephony became the second most frequently used Internet access technology, exceeding traditional modems in micro-companies for the first time. A total of 18.2% of micro-companies with Internet accessed the Internet via mobile telephony (GPRS, UMTS,…) an increase of 3.7 percentage points compared to the previous year.

For the first time, Internet access in micro-companies via mobile telephony exceeded traditional modems

Access and use of ICTs by economic activity sector

The differences in ICT access between activity sectors were more pronounced in micro-companies than in larger companies. As shown in the table, the differences in availability range from 74-75 points (e-mail, Internet and broadband) to 11 (extranets).

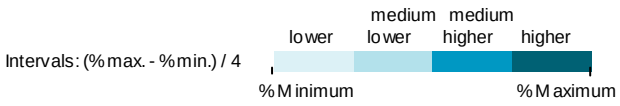
The differences in ICT access between sectors were more pronounced in micro-companies, reaching 75 percentage points

Note the predominant position of the information technology, telecommunications and financial sectors, followed by hotel and travel agencies, wholesalers, business activities and the sale and repair of vehicles.

Other sectors use ICT components to a lesser extent, usually below the average for micro-companies, except for the use of mobile devices, where the construction and transport and postal services sectors rank first (81.8% and 72.4% of micro-companies with mobile telephony, respectively).

Table 19. Infrastructure and ICT access by sector (%)

% companies which had:	Total number of micro-companies	Industry	Construction	Sale and repair of vehicles	Wholesale trade	Retail trade	Hotels and travel agencies	Transport and postal services	Computers and telecommunications	Business activities	Finance
Mobile telephony	69.1	67.5	81.8	71.4	87.0	45.6	66.7	72.4	78.4	72.5	81.8
Computers	64.7	65.8	50.2	76.0	84.7	47.6	76.3	39.1	98.4	84.6	88.5
Internet Connection	53.0	50.2	35.7	63.0	74.6	36.2	74.5	22.1	96.5	76.0	83.5
Electronic mail: (e-mail)	49.1	46.2	30.1	57.4	70.0	32.3	74.1	18.2	93.7	73.3	80.1
Broadband	48.9	45.1	31.8	56.7	67.9	33.9	66.6	20.7	95.1	70.9	81.4
Local Area Network	20.9	15.6	9.0	23.9	30.2	15.5	38.7	5.3	62.9	32.2	48.3
Wireless Local Area Network	12.3	6.4	6.5	12.0	17.1	7.6	19.7	3.9	50.0	19.6	20.2
Intranet (website for internal use)	3.1	1.5	0.8	4.5	4.0	2.2	12.2	0.4	19.3	4.7	9.0
Extranet	1.5	0.5	0.2	2.7	2.1	1.0	6.9	0.1	11.0	2.2	5.5



Base: All micro-companies

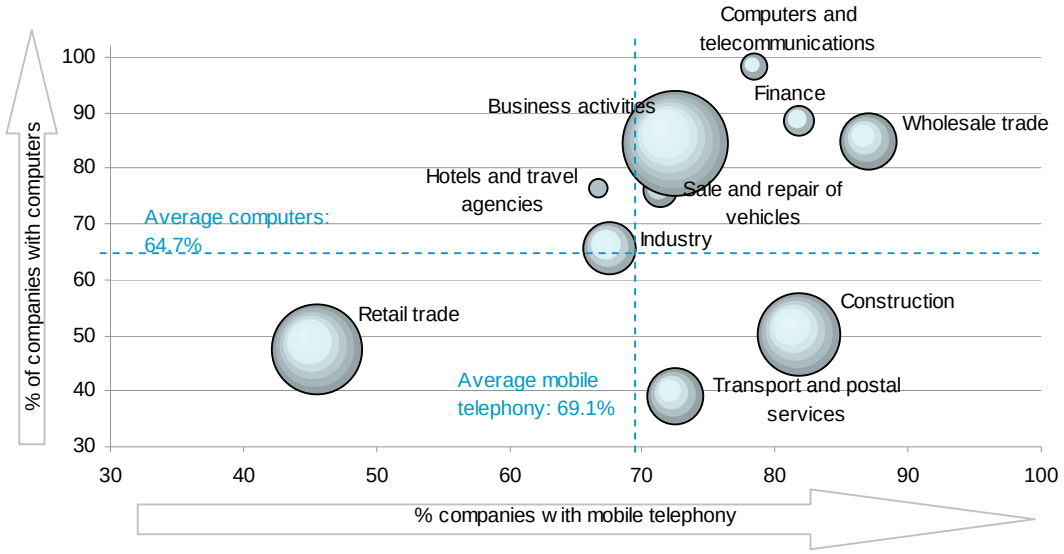
Source: ONTSI using INE 2008 data

The bubble chart shows the proportion of each sector, where the size of the bubble represents the number of companies and their situation in terms of computers and business mobile telephony.

The poorer position of the construction and transport and postal services sectors with regard to computer access can clearly be seen which, as indicated in the preceding paragraph, still prioritise the use of mobile telephony, while in the case of retailers, the use of both devices is significantly below average.

Broadband connections were used by most companies with Internet, with very little variation by sector, ranging from 89.4% in retailing to 98.6% in the information technology and telecommunications sector.

Figure 173. Companies with Internet access vs companies with mobile telephony (%)



Base: All micro-enterprises
Note: the size of the bubble is proportional to the number of sector companies

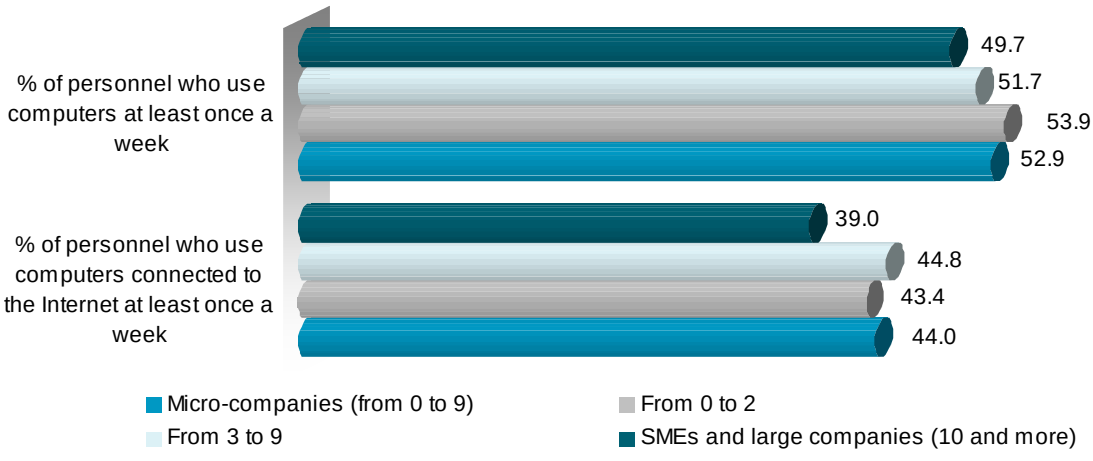
Source: ONTSI using INE 2008 data

Lastly, there was a high percentage of hotels and travel agencies with communications networks and devices, for use in promoting and selling their products, as shown later.

10.2. ICT use by employees

More employees had access to computers in the smallest companies than in the largest.

Figure 174. Personnel who use computers and computers with Internet access, at least once a week (%)



Base: total employees in each company

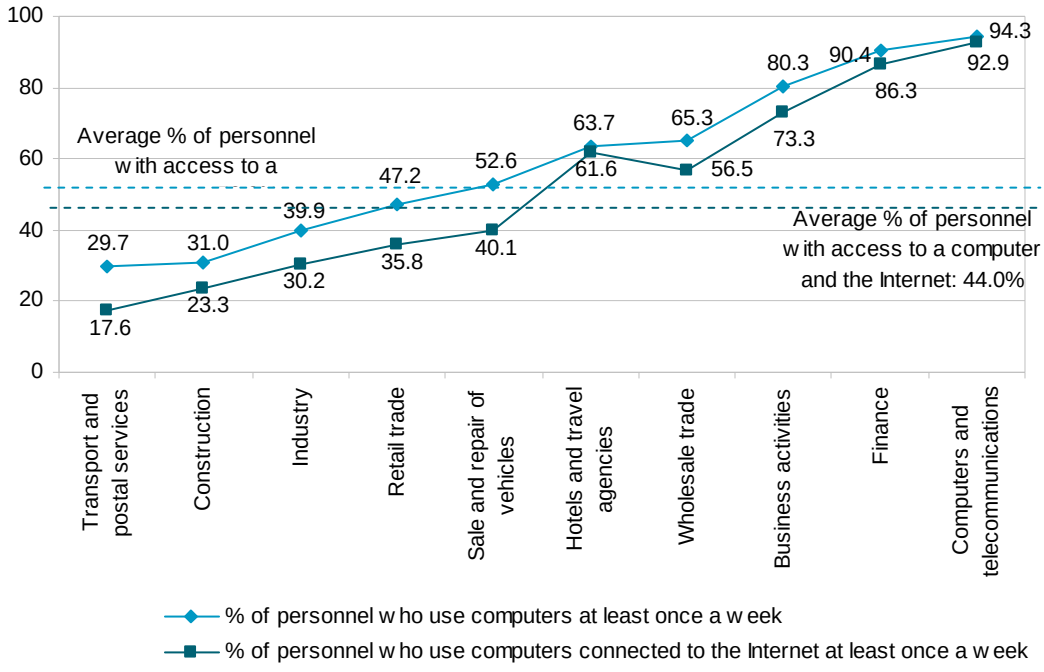
Source: ONTSI using INE 2008 data

More than half of employees in micro-companies used computers at least once a week and 44% used computers with Internet connection.

In the information technology and telecommunications and financial sectors, nine out of every ten employees used a computer at least once a week. At the opposite end of the scale, in the construction and transport and postal services sectors, three out of every ten employees used this tool.

Computers with Internet access were used by a smaller number of employees, with the exception of the hotel and travel agency and information technology and telecommunications sectors, in which the number of employees was practically the same.

Figure 175. Personnel who used computers and computers with Internet access at least once a week by sector (%)

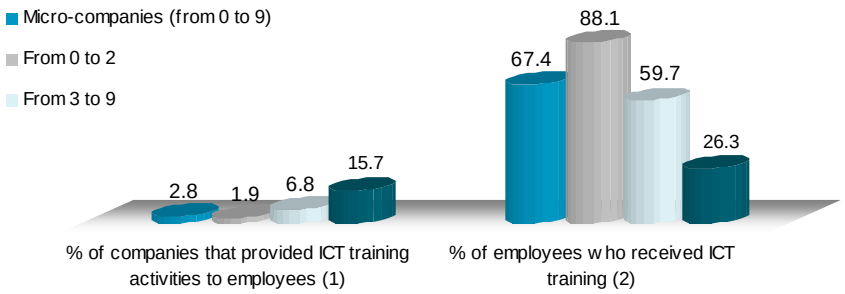


Base: total micro-company employees

Source: ONTSI using INE 2008 data

A very low percentage of micro-companies claimed to have provided ICT training. In those that did, the training covered an average of two-thirds of their workforce.

Figure 176. ICT training for employees (%)



Base 1: Total companies
Base 2: total employees of companies that provided ICT training

Source: ONTSI using INE 2008 data

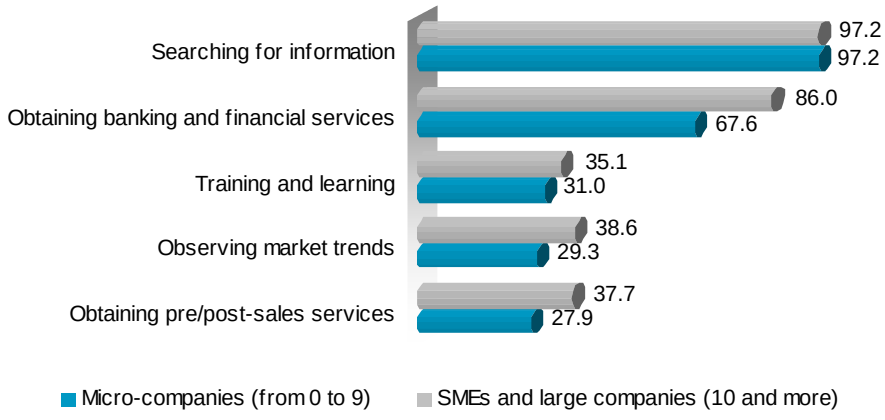
10.3. Internet

Internet use

Two out of every three micro-companies with Internet used

Nearly all micro-companies with Internet browsed for information using search engines and two out of every three used the Internet to access banking and financial services. Equally significant is the activity carried out by micro-companies on the Internet to access other services, such as training and learning, and information relating to market behaviour (around 30% of micro-companies with Internet). Use of the Internet to obtain after-sales and pre-sales services recorded the highest annual increase (8 pp), accounting for 28% of all micro-companies.

Figure 177. Main Internet uses (%)



Base: companies with Internet

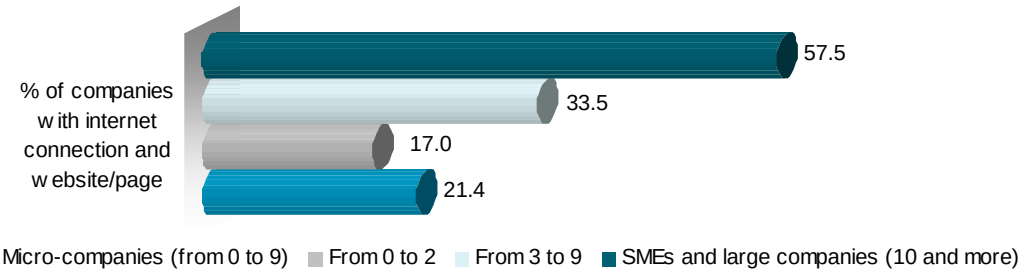
Source: ONTSI using INE 2008 data

Web page

A total of 21.4% of micro-companies with Internet had a website, which basically presented the company and provided access to product catalogues or price lists. The percentage of micro-companies that provided product catalogues or price lists tripled since the previous year, to more than 62% of micro-companies with a website. Also notable is the fact that three out of every ten micro-companies offered online ordering or bookings.

The percentage of micro-companies that provided product catalogues or price lists through their website tripled in one year to 62%.

Figure 178. Companies with websites (%)

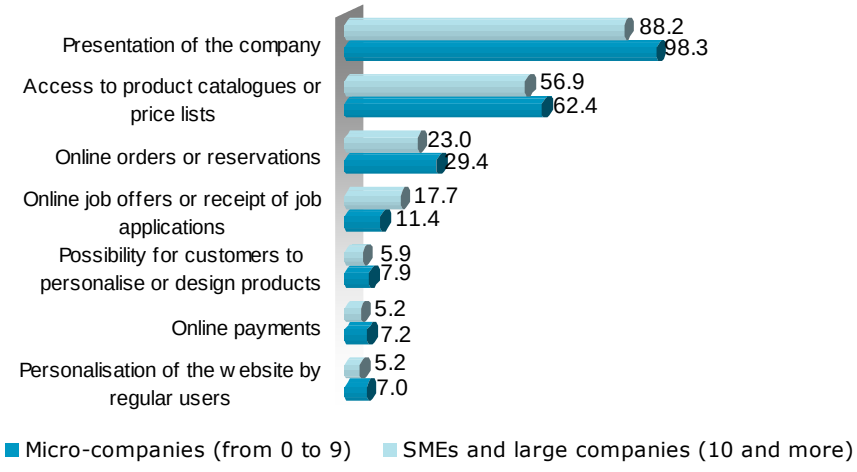


Base: companies with Internet

Source: ONTSI using INE 2008 data

It should be noted that, although the percentage of micro-companies with websites is lower than for companies with ten or more employees, micro-company websites offered more services. The percentage of micro-companies that offered catalogue services, price lists, online ordering or bookings, was notably higher than that corresponding to SMEs and large companies.

Figure 179. Objectives / services offered by company websites (%)

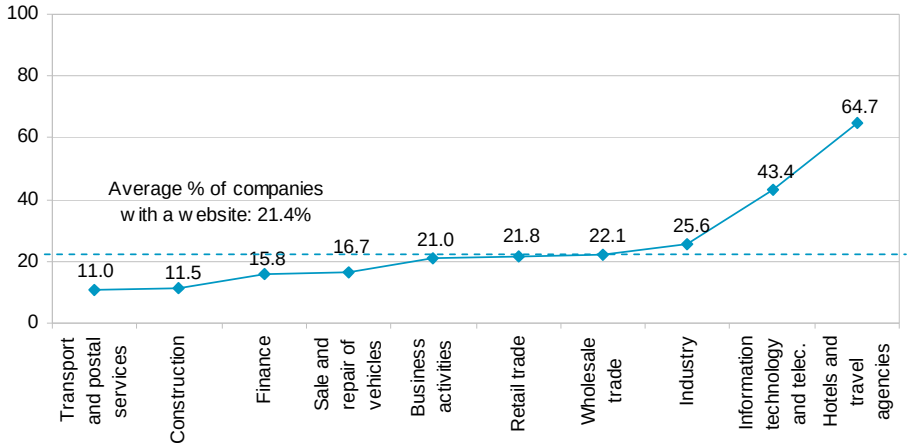


Base: companies with Internet and websites

Source: ONTSI using INE 2008 data

As in the case of larger companies, the hotel and travel agency sector stood out in terms of website availability, with nearly 65% of micro-companies having this tool. This was also the sector with a greater range of services and, together with the retail sector, was well above average in the provision of online catalogues or price lists and offering the possibility of placing orders and making online bookings.

Figure 180. Companies with websites by sector (%)



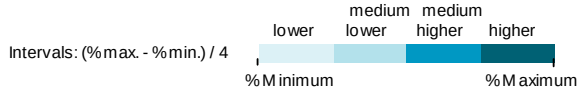
Base: Micro-companies with Internet

Source: ONTSI using INE 2008 data

In general, retail micro-companies offer a greater number of services on their websites, double the average in many cases, which did not exist in companies with ten or more employees.

Table 20. Objectives / services offered by company websites by sector (%)

% companies which had:	Total Spain	Industry	Construction	Sale and repair of vehicles	Wholesale trade	Retail trade	Hotels and travel agencies	Transport and postal services	Information technology and telec.	Business activities	Finance
Presentation of the company	98.3	98.9	94.9	95.5	96.9	98.6	98.2	93.7	97.6	99.5	79.1
Access to product catalogues or price lists	62.4	76.9	31.7	59.3	64.5	67.8	78.2	59.0	58.2	60.7	61.5
Online orders or reservations	29.4	25.7	13.2	25.3	21.0	43.8	52.2	21.3	27.4	28.3	35.9
Online job offers or receipt of job applications	11.4	5.0	8.1	6.9	3.3	14.9	6.5	10.8	18.5	14.1	24.0
Possibility for customers to personalise or design products	7.9	1.7	0.1	11.9	6.5	17.6	13.8	2.9	8.2	6.6	30.1
Online payments	7.2	3.3	0.0	3.9	7.8	23.0	16.9	0.7	9.5	2.4	3.8
Personalisation of the website by regular users	7.0	2.1	0.0	2.0	4.2	19.0	3.7	2.9	13.6	5.5	11.9



Base: micro-companies with Internet and websites

Source: ONTSI using INE 2008 data

In general terms, the financial sector was also notable, mainly for offering customers the possibility to personalise products and for publishing employment opportunities.

Information technology security

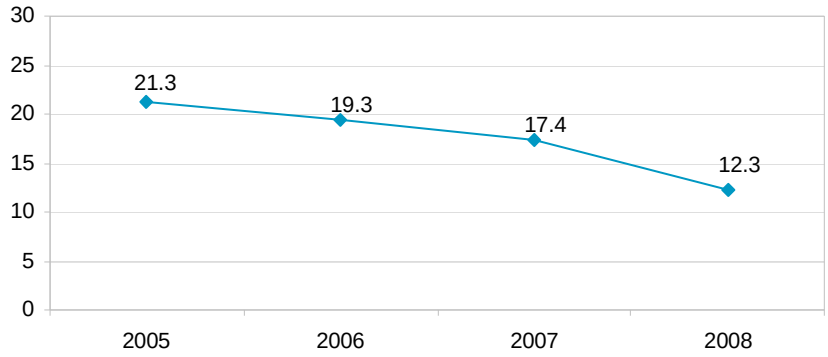
The number of micro-companies that reported IT problems dropped significantly last year, while the number of micro-companies that reported security incidents in the last twelve months grew by 5 points.

The number of micro-companies with security problems fell by 5% in one year

The principal problem was computer virus attacks (worms or trojans), which affected 11.8% of total micro-companies with Internet in the last year.

To a significantly lesser extent, 1.5% suffered unauthorised access to their computer system or to company data, and 0.4% suffered financial fraud (for example, phishing).

Figure 181. Evolution of the percentage of companies that encountered security problems in the last twelve months (%)

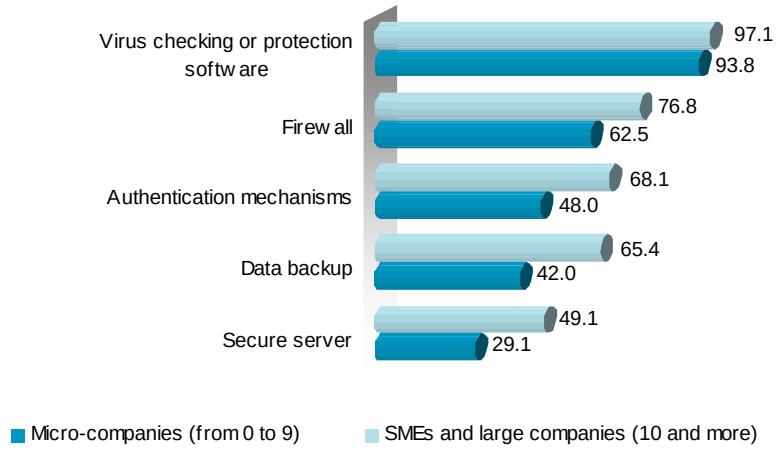


Base: micro-companies with Internet connection

Source: ONTSI using INE 2008 data

The security measures adopted by nearly all micro-companies with Internet were antivirus systems (93.8%), followed by firewall systems (62.5%).

Figure 182. Companies that used internal security services, by type of service (%)



Base: companies with Internet connection

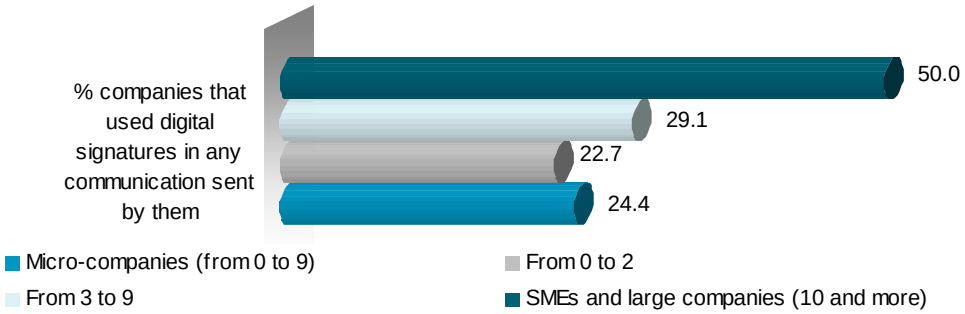
Source: ONTSI using INE 2008 data

Authentication mechanisms, security backups and secure servers were less frequent, scoring between 29% and 48%.

Digital signature

Nearly one quarter of micro-companies had used digital signatures during the year to communicate with an external agent. Of these micro-companies 26.9% had used it with their customers or suppliers, while 81.8% with the public administration.

Figure 183. Companies that used digital signature (%)



Base: companies with Internet

Source: ONTSI using INE 2008 data

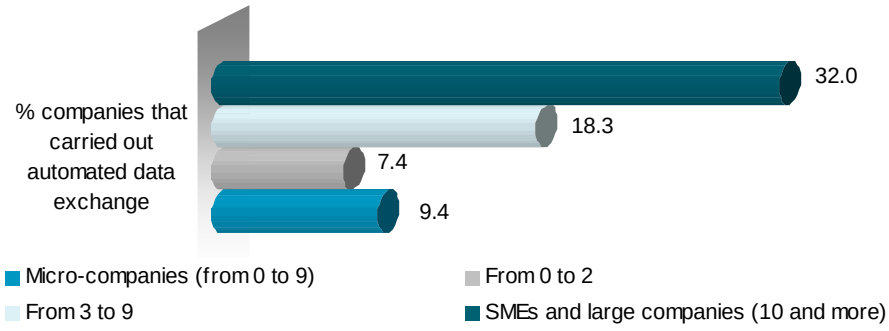
10.4. e-Business

This section analyses the degree of ICT integration in corporate administrative and production processes, both for external (with customers, suppliers or other agents) and internal management purposes (between the different functional areas of the company). It should be noted that the percentage of micro-companies with computers still did not exceed 65% throughout the process of analysing business applications, mainly when comparing SMEs and large companies.

Automated data exchange with external ICT systems

One out of every ten micro-companies had carried out automated data exchange[38] with other external ICT systems, a rate that doubled to 18% in the subgroup of companies with three to nine employees.

Figure 184. Companies that carried out automated data exchange with external ICT systems (%)



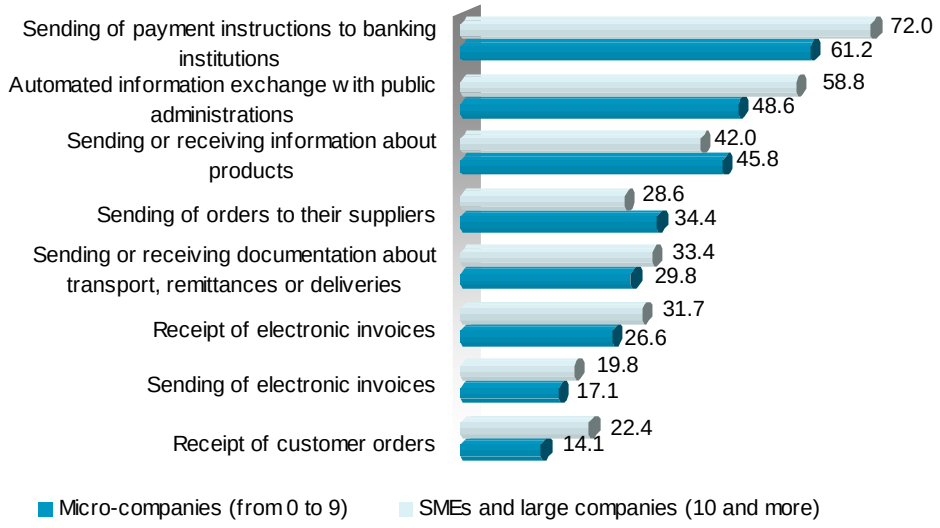
Base: all companies

Source: ONTSI using INE 2008 data

The main recipients of automated data exchange are banks (six out of every ten micro-companies carried out automated data exchange with banks). In second place, micro-companies exchanged information with the public administration to the same extent as they sent or received information on their products (48.6% and 45.8%, respectively). It should be noted that sending/receiving product-related information and placing orders to suppliers were activities carried out on a more frequent basis by micro-companies than by SMEs and large companies. Other automated data exchange systems were used by less than 35% of micro-companies.

[38] Automated data exchange between the company and other external ICT systems, comprising the exchange of information (for example, orders, invoices, payment transactions or product descriptions) via the Internet or other telematic networks, in an agreed format that will allow automatic processing (for example, XML, EDIFACT, etc.). Hand-written electronic mail is not included in the concept of automated data exchange.

Figure 185. Type of automated data exchange with external ICT systems (according to the objective of the communication) (%)



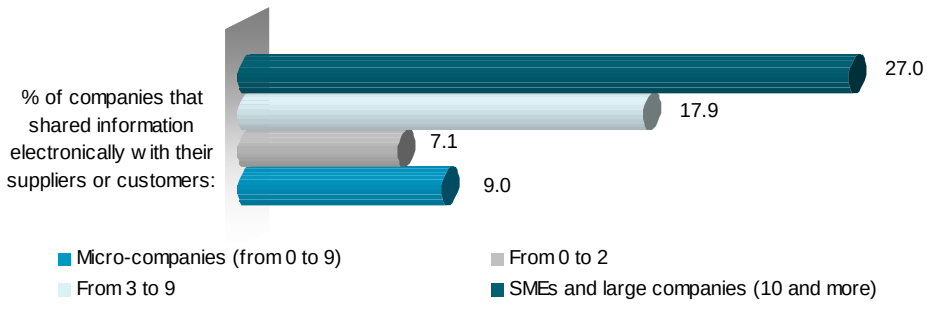
Base: companies that carried out automated data exchange with external ICT systems

Source: ONTSI using INE 2008 data

Electronic exchange of information with suppliers and customers

A total of 9% of micro-companies exchanged information electronically[39] and on a regular basis with their suppliers or customers. The main objective of this communication was to share information related to delivery status: Some 63.5% of micro-companies communicated with their suppliers for this purpose and 45.7% with their customers.

Figure 186. Companies that shared information electronically with their suppliers or customers (%)



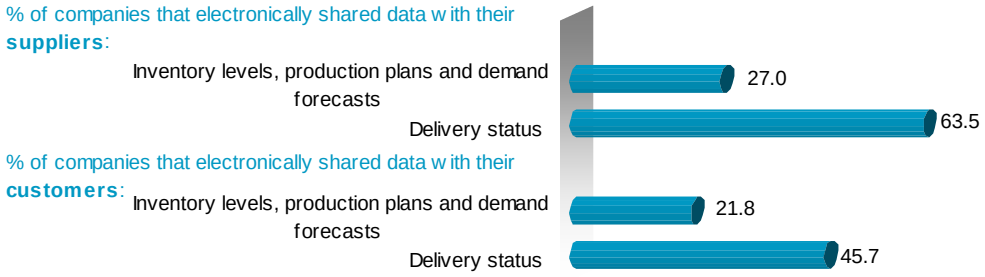
Base: all companies

Source: ONTSI using INE 2008 data

[39] Through telematic networks (Internet or other connections) excluding hand-written electronic mail.

With a lower frequency, 27% exchanged information on inventory levels, production plans and demand forecasts with their suppliers, and 21.8% with their customers.

Figure 187. Type of information shared electronically with suppliers or customers (%)



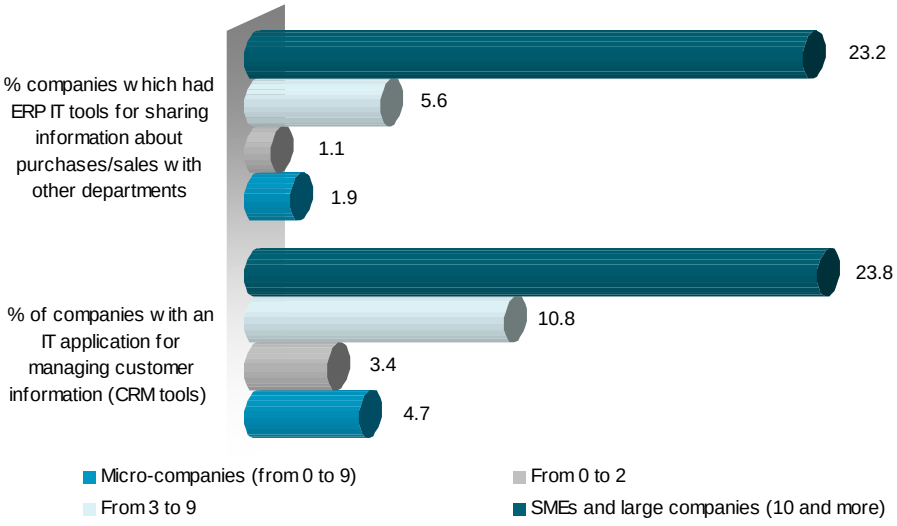
Base: micro-companies that shared information electronically with their suppliers or customers on a regular basis

Source: ONTSI using INE 2008 data

ERP and CRM tools

A very low percentage of micro-companies had CRM computer tools for managing customer information (less than 5%) and ERP systems for sharing purchasing and sales related information with other functional areas of the company.

Figure 188. Companies with ERP and CRM computer tools (%)



Base: all companies

Source: ONTSI using INE 2008 data

10.5. e-Commerce

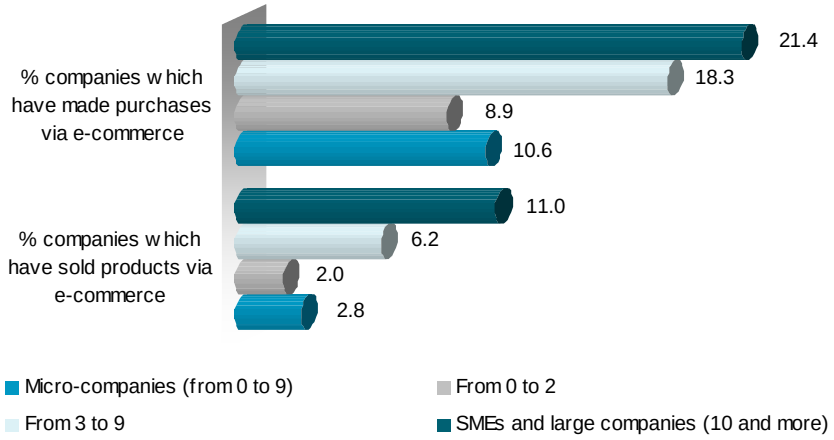
Analysing the use of e-Commerce in micro-companies highlights the important difference in utility that each activity sector has in this type of business[40], with some sectors recording rates several times higher than the average.

Companies that use e-Commerce.

Micro-companies with three to nine employees made purchases via e-Commerce with a similar frequency to SMEs and large companies. On average, 10.6% of micro-companies made purchases via e-Commerce, rising to 18.3% for the subgroup of three to nine employees.

Micro-companies with three to nine employees made purchases via e-Commerce with a similar frequency as SMEs and large companies

Figure 189. Companies that purchase and sell via e-Commerce(%)



Base: all companies

Source: ONTSI using INE 2008 data

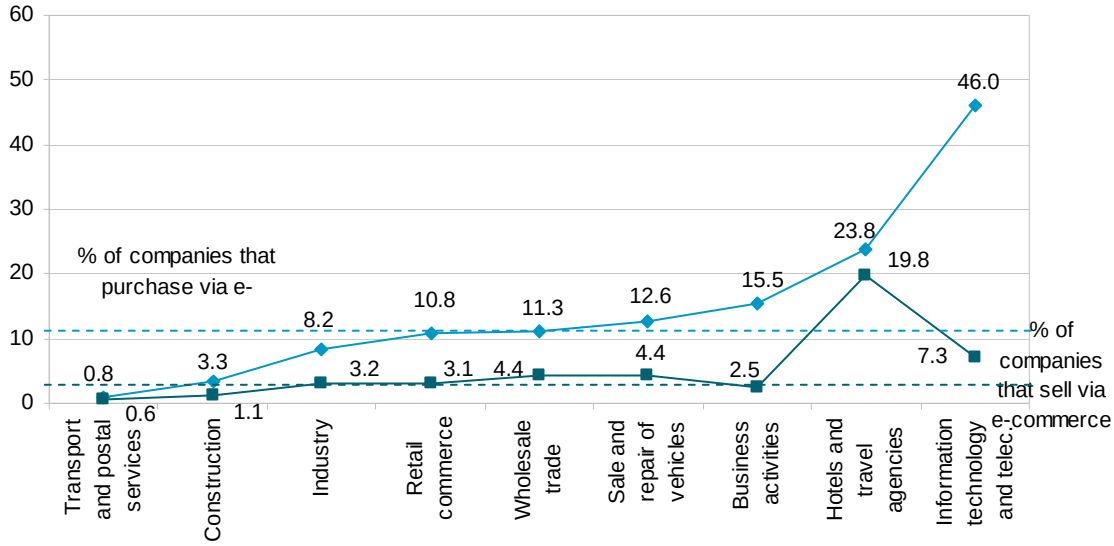
A total of 19.8% of micro-companies in the hotel and travel agency sector used e-Commerce to sell and 46% of information technology and telecommunications sector

Sales via e-Commerce were less frequent than purchases; only 2.8% of micro-companies sold via this channel. However, in the hotel and travel agency sector, the percentage of micro-companies that sold via e-Commerce reached 19.8%, seven times the average. In the case of purchases, it was the information technology and telecommunications sector that stood out, with 46% of its micro-

[40] The electronic commerce survey does not include the financial sector

companies making purchases via e-Commerce (four times the average). In second place, the hotel and travel agency sector once again excelled, with 23.8% (double the average).

Figure 190. Companies that sell / purchase via e-Commerce by sector (%)



Base: All micro-companies

Source: ONTSI using INE 2008 data

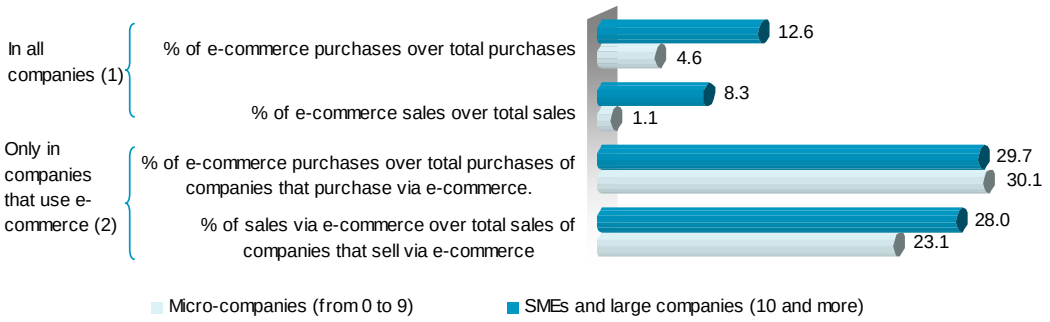
Significance of electronic commerce

The significance of e-Commerce in companies that used it was greater in micro-companies than in large companies

One aspect that is equal for SMEs and large companies is the relative significance of e-Commerce to the companies that used it (in terms of the amount of transactions).

Therefore, the amount of purchases made via e-Commerce accounted for 4.6% of all purchases made by all micro-companies. However, in terms of purchases made by micro-companies that use e-Commerce, this percentage rose to 30.1%, exceeding the same figure for SMEs and large companies.

Figure 191. Amount of purchases/sales made via e-Commerce in all companies vs the amount of purchases/sales via e-Commerce in companies that purchase/sell via e-Commerce (%)



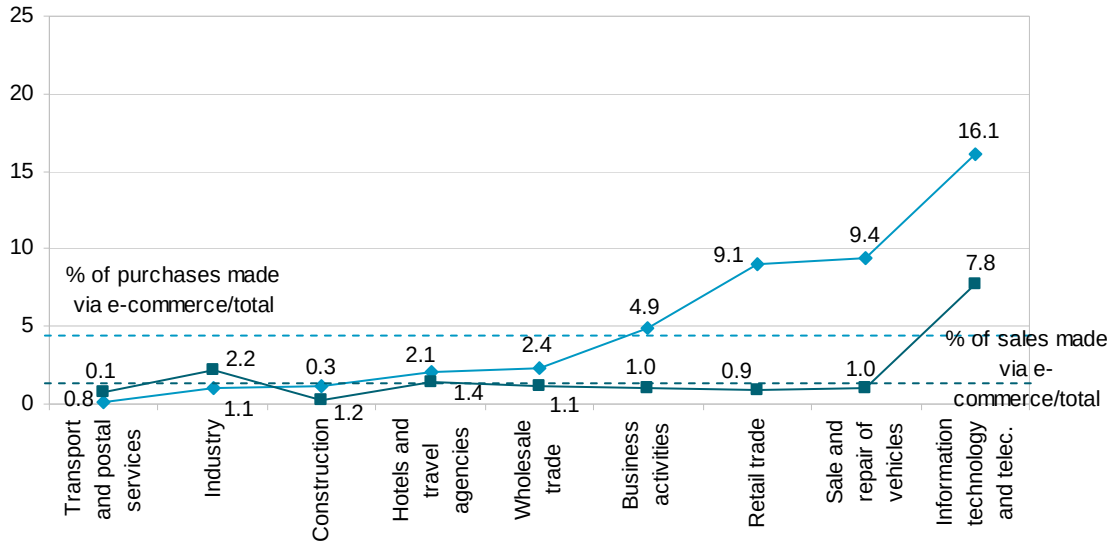
Base 1: Percentage of the amount of purchases/sales via e-Commerce in relation to all purchases/sales of all companies
Base 2: Percentage of the amount of purchases/sales via e-Commerce in relation to all purchases/sales of companies that purchased/sold via e-Commerce

Source: ONTSI using INE 2008 data

The proportion of the amount of sales via e-Commerce was insignificant in all micro-companies (1.1%). However, sales by micro-companies that use this channel accounted for 23.1% of all sales.

The amount of purchases made via e-Commerce in micro-companies that purchased via this channel accounted for 30% of total

Figure 192. Amount of purchases made via e-Commerce in relation to total purchases and amount of sales made via e-Commerce in relation to total sales by sector (%)



Base: Percentages of the amount of purchases/sales via e-Commerce in relation to purchases/sales of total micro-companies

Source: ONTSI using INE 2008 data

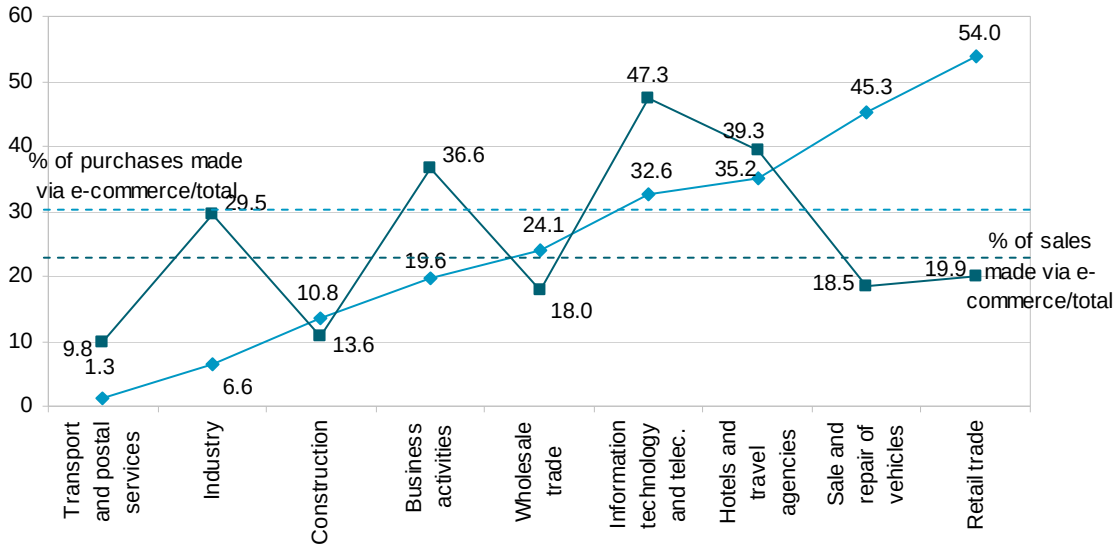
By sector, the sectors for retail (9.1%), vehicle sales and repair (9.4%) and information technology and telecommunications (16.1%) had the most significant proportions of the amount of purchases made via e-Commerce compared to total purchases. In the case of sales, the information technology and telecommunications sector stood out, with an amount of sales made via e-Commerce accounting for 7.8% of total sector sales.

Around 9% of total purchases by micro-companies in the retail and the vehicle sale and repair sectors were carried out via e-Commerce

More than half of the purchases made by retail micro-companies (e-Commerce users) were made via the Internet

Considering only companies that carried out e-Commerce transactions, purchases were led by retailers: more than half of the purchases in companies that purchased via e-Commerce were made via this channel, specifically 54%.

Figure 193. Amount of purchases via e-Commerce in relation to all purchases and amount of sales via e-Commerce in relation to all sales, in companies that purchase or sell via e-Commerce (%)



Base: Percentages of the amount of purchases or sales made via e-Commerce in relation to all purchases or sales made by micro-companies that purchased or sold via e-Commerce, respectively

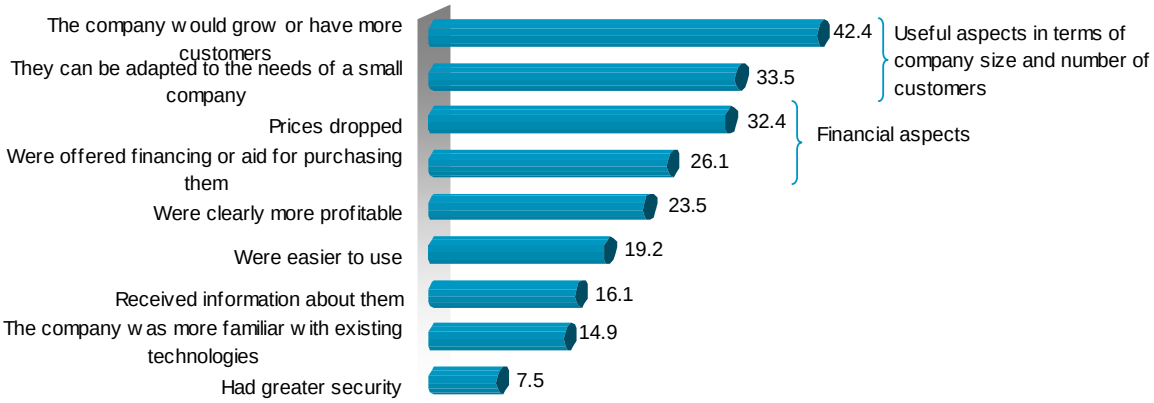
Source: ONTSI using INE 2008 data

10.6. Barriers to the adoption of ICTs

After consulting micro-companies about the factors that they should change in order to adopt ICTs, or to adopt these to a greater extent, they mainly pointed to factors linked to the utility of ICTs for small companies and/or with few customers, as is

generally the case of micro-companies. Secondly, financial aspects such as the price of the technology and financial assistance for acquiring it were important.

Figure 194. Reasons why micro-companies would increase their technological equipment (%)

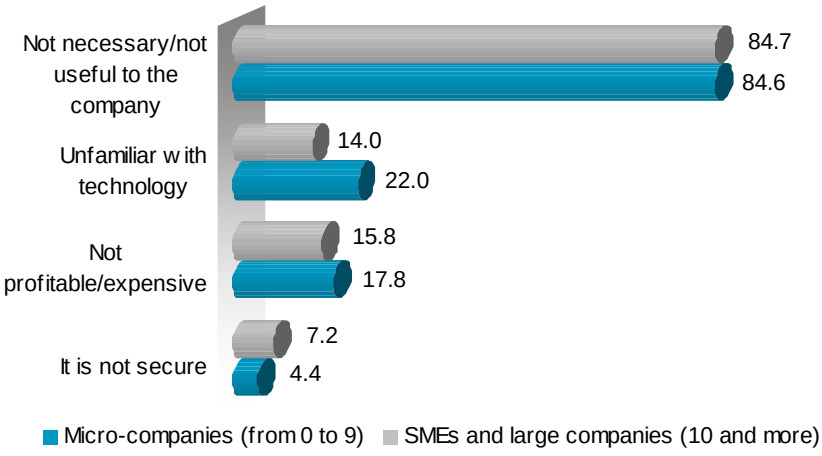


Base: All micro-enterprises
Note: Micro-companies selected the factors they considered the most relevant, up to a maximum of three

Source: ONTSI using INE 2008 data

Compared to the previous year, improvements such as the lower perception that ICTs do not meet the needs of small companies (from 41.3% in 2007 to 33.5% in 2008) and the perception of security, which fell from 9.3% of micro-companies that wished that ICTs were more secure to 7.5% last year.

Figure 195. Reasons for not having Internet access (%)

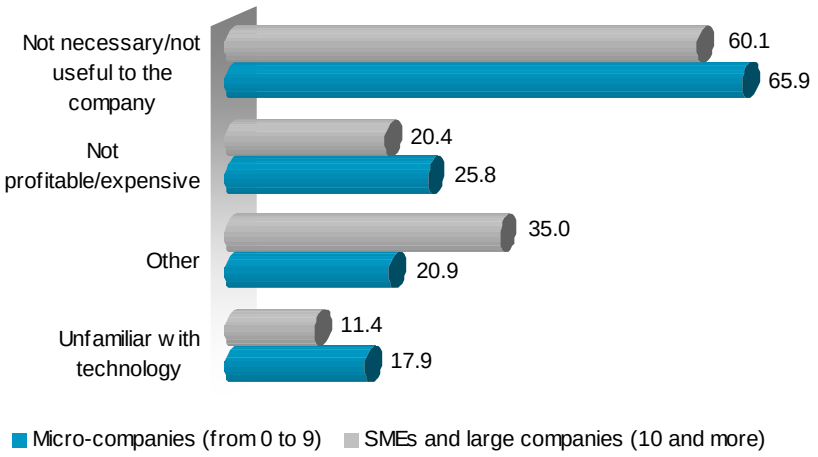


Base: micro-companies without Internet access

Source: ONTSI using INE 2008 data

With regard to the Internet, micro-companies that do not have access said that it was not necessary or useful to their business (85%), the same proportion as SMEs and large companies. Secondly, nearly one quarter of micro-companies cited unfamiliarity with the technology (22%), a less important factor among large companies (14%), which revealed a small divide in technological knowledge.

Figure 196. Reasons for not having a website (%)



Base: micro-companies with an Internet connection but without a website

Source: ONTSI using INE 2008 data

Nearly two out of three micro-companies with Internet but without a website did not consider it necessary or useful to their business. To a lesser extent, between one quarter and one fifth cited its non-profitability or high cost, unfamiliarity with the technology or other factors.

The Networked Society 2008
Annual report

11. Electronic administration

11. ELECTRONIC ADMINISTRATION

11.1. Electronic Administration: modernising administrations

Electronic administration refers to the use of electronic, IT and telematic techniques and media to carry out activities and procedures managed by the administration. Law 30/1992 on the General Government Legal Framework and Common Administrative Procedure already promotes the use of these media, even though their implementation was not planned as obligatory for the different administrations, but optional.

The Law recognises citizens' rights to interact with the administration via electronic media

The major step forward in the development of an advanced electronic administration originated in the publication of Law 11/2007 on Citizens' Electronic Access to Public Services. This Law recognises "citizens' rights to interact with public administrations via electronic media" and also establishes the "obligation of public administrations to redesign their procedures and use the necessary technical resources so that the new right can be fully and effectively exercised".

One of the aspects inherent to the concept of the electronic administration is the change from traditional paper-based procedures to electronic procedures. On interacting with the administration electronically, citizens will perceive greater transparency and control over the status of any formality they may start. They will undoubtedly perceive a substantial improvement in the quality of the service provided by the administration. Citizens are demanding better services and greater security and participation; while companies are demanding less bureaucracy and greater efficiency.

A clear association between competitiveness, innovation and quality of public administrations can be seen, which means that in a global economy, better government is becomes a necessary condition to being competitive. The electronic administration therefore represents a major contribution.

Clear objectives for the full implementation of electronic administration are:

- Accelerating the generation of tangible benefits for citizens and companies
- Ensuring that electronic administration at national level does not create barriers in the internal market due to fragmentation and lack of interoperability
- Extending the benefits of electronic administration at an EU level, generating economies of scale
- Ensuring cooperation between interested parties in the design and provision of electronic administration

11.2. ICTs in Local Administration

The passing the aforementioned Law 11/2007 on Citizens' Electronic Access to Public Services requires all public entities, including local entities, to work towards their electronic transformation, guaranteeing the fulfilment of the rights established by legislation.

The study prepared by the ONTSI entitled "Status of ICTs in Local Administration" (Estado de las TIC en la Administración Local), therefore offers a detailed diagnosis of the situation of local administration (town and city councils and supramunicipal bodies) in terms of the use of information and communication technologies.

The results, in the case of town and city councils and supramunicipal bodies, are segmented. In the case of the former, six segments were identified based on a synthetic indicator that not only considers demographic aspects, but also financial and budgetary aspects.

The segments therefore range from A1, which represents together the greatest percentage of the population but the lowest number of town and city councils, to E, which includes the highest percentage of town and city councils, but the lowest percentage of the population.

Table21. Municipal Synthetic Indicator

Segments	No. of city councils	%	No. of inhabitants	%
A1	200	2.47	25,381,311	57.54
A2	350	4.32	7,080,730	16.05
B	1,000	12.33	6,788,366	15.39
C	1,500	18.50	3,131,401	7.10
D	2,000	24.66	1,252,015	2.84
E	3,059	37.72	474,707	1.08
Totals	**8,109**	**100**	**44,108,530**	**100**

Base: Total town and city councils

Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society)

In the second case, supramunicipal bodies, the segmentation was based on the provinces to which they belong. The synthetic indicator of the 44 provinces taken as a base (those that have these types of entities), is calculated as the sum of the synthetic indicators of the city councils that they include.

Five segments were therefore defined based on the synthetic indicator ranking by province. The details of the calculation for the segments in both cases are included in the report methodology.

Table 22. Supramunicipal Synthetic Indicator

Segments	I	II	III	IV	V
Provinces	6	12	13	11	2
Number of Entities	8	18	13	11	2
Population of the provinces	Greater than 1,000,000	from 700,000 to 1,200,000	from 350,000 to 700,000	from 150,000 to 350,000	Less than 150,000

Base: Total supramunicipal local entities

Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society)

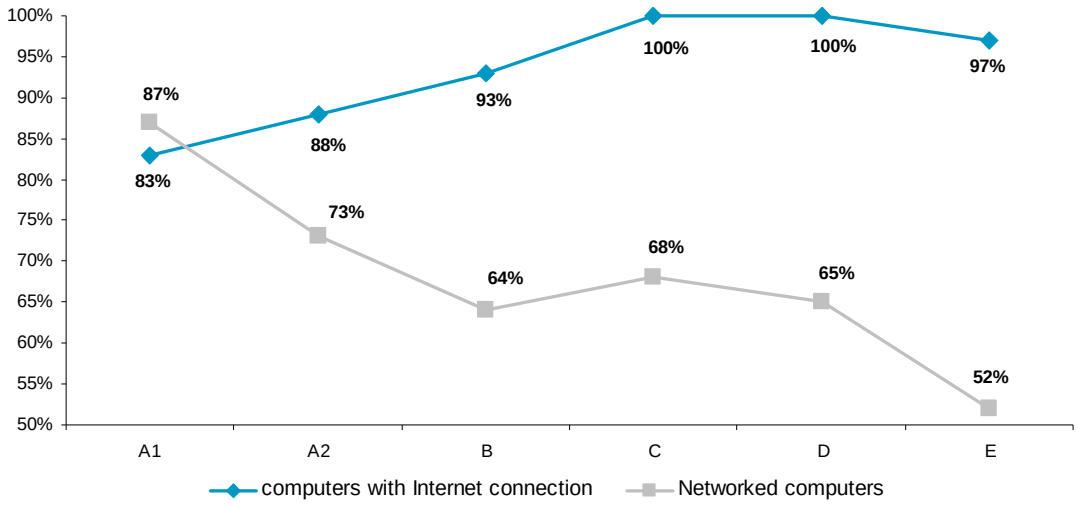
From a quantitative viewpoint, the results that are centred around infrastructure, ICT resources, information and management systems, etc., both in town and city councils and supramunicipal entities, reveal the issues described below.

Town and city councils

More than 80% of city council computers have Internet

In relation to infrastructures in town and city councils, more than 80% of computers have an Internet connection in all the segments considered. A total of 100% was reached in both segments C and D, with the segments with the highest percentage of population recording the lowest percentage of computers connected to the Internet. Examining the networked computer indicator reveals a contrary trend, whereby the segments characterised by a lower percentage of population are those that recorded the lowest percentage of networked computers.

Figure 197. Computers connected to the Internet and to the municipal network



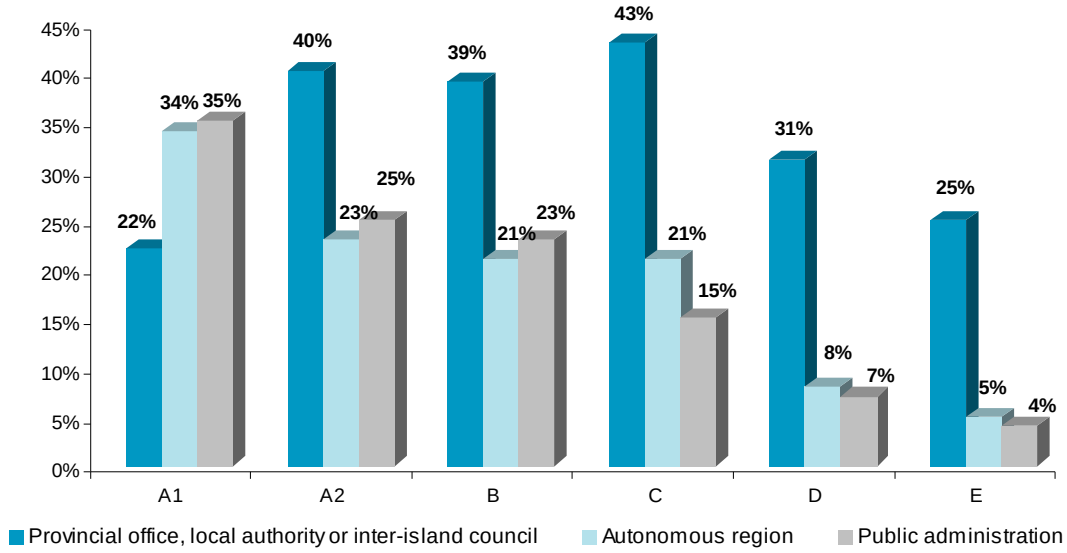
Base: Total town and city councils

Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society)

As regards network connections with other administrations, the figure shows two trends.

On one hand, the segments that most often connected to the network of their supramunicipal entities (provincial councils, town and inter-island councils) did so to a lesser extent with the network of the autonomous region and the general state administration and their public entities. However, the town and city councils of segment A1 communicated more with the autonomous region and the general state administration than the supramunicipal entities.

Figure 198. Network connection with other public administrations



Base: Total town and city councils

Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society)

Information services were particularly relevant in the relationship between citizens and companies and the local administration, since these services support ICT dissemination.

Information services were the area offered by the highest percentage of city councils.

The range of services in relation to which information was offered was wide and included general information from the town or city council (organisation chart, procedures, public employment offers, etc.), information services and city management (street map, equipment, cultural services, transport) as well as public services for companies (enterprise creation, public sector contracting, subsidies).

The general trend revealed that the percentage of town and city councils that offered these services was higher in those that represented higher population percentages (A1 and A2).

Table 23. Information services accessible over the Internet

SEGMENTS	A1	A2	B	C	D	E
General information	**99%**	**96%**	**89%**	**71%**	**43%**	**23%**
Entity Organisation Chart	88%	83%	76%	60%	32%	17%
Procedures and services	86%	75%	62%	40%	22%	12%
Document management	83%	72%	52%	34%	15%	6%
Public employment offer	87%	72%	50%	32%	12%	5%
News	98%	93%	82%	59%	32%	14%
Activities	98%	93%	83%	60%	33%	15%
Bulletin board and edicts	74%	68%	60%	40%	21%	10%
Information and management of the city	**99%**	**95%**	**86%**	**66%**	**37%**	**19%**
Street map	87%	74%	61%	40%	16%	8%
Equipment and facilities	80%	69%	64%	46%	20%	10%
Culture and Tourism	97%	94%	81%	63%	34%	17%
Transport	84%	64%	49%	31%	17%	9%
Information for companies	**85%**	**74%**	**55%**	**32%**	**15%**	**5%**
Enterprise creation	48%	31%	21%	12%	5%	2%
Public sector contracting	72%	58%	35%	20%	8%	2%
Job vacancies	62%	53%	35%	18%	8%	2%
Aid and subsidy programmes	72%	58%	40%	22%	11%	3%

Base: Total town and city councils

Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society)

Application processing was the most widespread electronic procedural service in town and city councils

The range of services for electronic procedures represents another step towards the development of electronic administration. The services analysed include electronic registers, self-settlement of taxes and fees, electronic payment, electronic notifications, public tender processes, procedures with cartographic support and interoperability services. As shown below, in this case the highest percentage of town and city councils that offer these services is not associated with the segment that offers them, but with the type of service. Therefore, in all the segments considered, municipal application processing services are offered by a higher percentage of town city councils, while electronic notifications recorded the lowest figures.

Table 24. Electronic procedural services

SEGMENTS	A1	A2	B	C	D	E
Municipal formalities	88%	75%	60%	51%	33%	22%
Electronic payment	46%	24%	18%	23%	17%	10%
Interoperability	40%	36%	39%	36%	23%	11%
Self-settlement of taxes and fees	36%	13%	10%	11%	9%	4%
Electronic registration	28%	22%	20%	24%	13%	10%
Procedures with cartographic support	29%	14%	14%	24%	18%	10%
Public tender process	12%	9%	9%	9%	6%	4%
Electronic notification	4%	5%	4%	4%	4%	2%

Base: Total town and city councils

Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society)

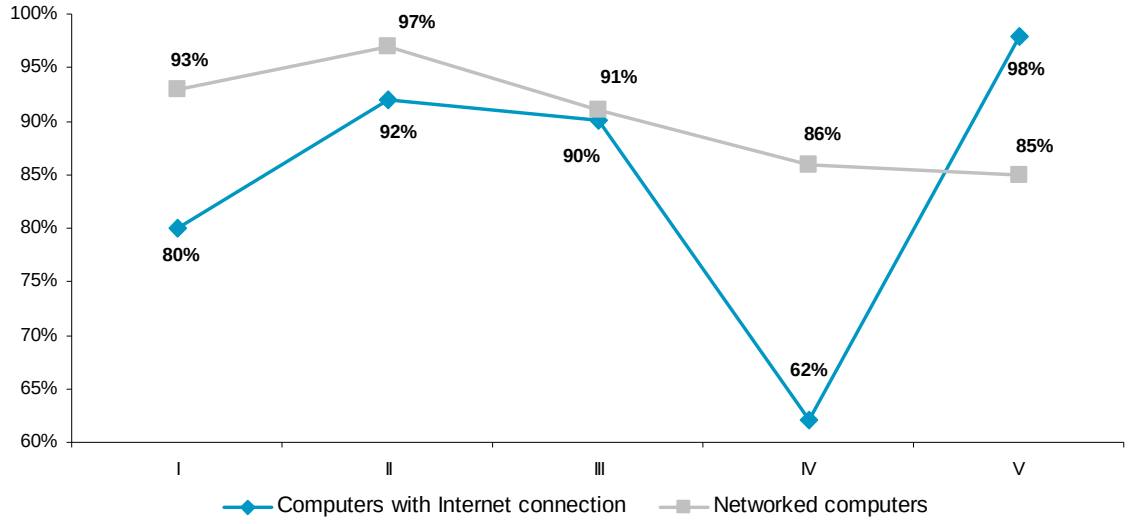
Supramunicipal entities

As in the case of town and city councils, the first aspect that must be addressed is infrastructures and connectivity. With the exception of segment V, the number of computers connected to the supramunicipal network was greater than the number of computers connected to the Internet.

Connectivity to this network, which interconnects different entities, reached its highest level in segment II with 97% of networked computers.

In terms of the lowest levels, segment IV showed a significant difference compared to the rest of the segments in terms of computers with Internet access (62% compared to 80% and 90%).

Figure 199. Computers connected to the supramunicipal network and to the Internet



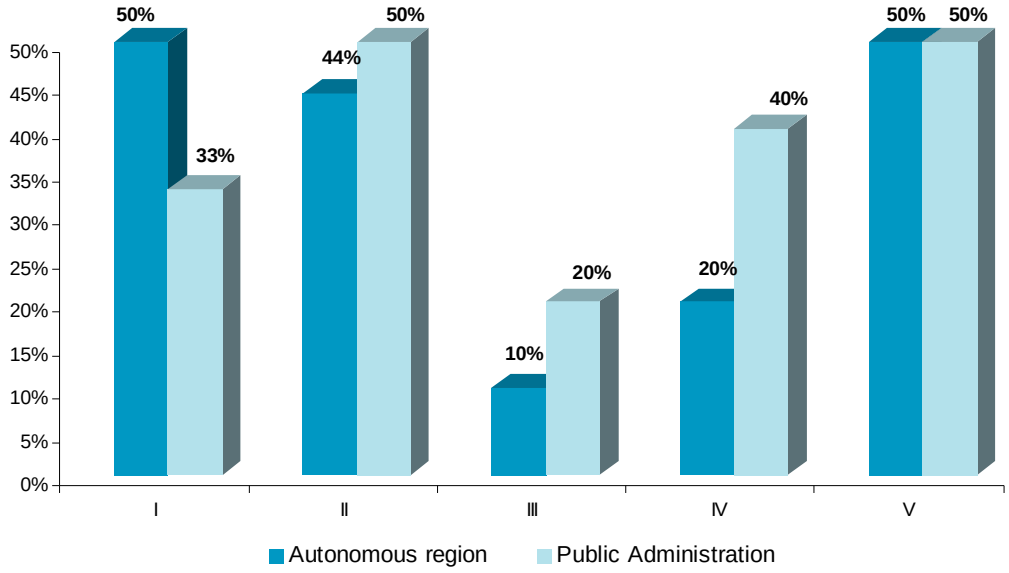
Base: Total supramunicipal entities

Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society)

Segments I and V recorded the highest percentages of supramunicipal entities that were connected to their respective autonomous regions, reaching 50% in both cases.

In terms of interconnectivity with the general state administration, segments II and V recorded the highest percentages, both 50%. Segment II recorded the lowest level of interconnectivity with other administrations.

Figure 200. Connection with other public administrations



Base: Total supramunicipal entities

Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society)

Supramunicipal entities offer different online information services that can be grouped together in categories: general information services relating to the province, information for companies and economic promotion, citizen participation and private sector information.

In general, those offered by a higher percentage of supramunicipal entities are classified under the three first categories.

Organisation charts and public employment offers: the most highly demanded information services from supramunicipal

Organisation charts, news and public employment offers stood out among the general information services. Culture and tourism were significant among the provincial information services. Information on facilities, equipment and enquiries about library collections are less common.

Within the last category of the most common information services, of those related to information for companies and economic promotion, announcements about aid and services related to public sector contracting were of particular importance.

Table 25. Information services accessible on the Internet

SEGMENTS	I	II	III	IV	V
General information	**100%**	**100%**	**90%**	**100%**	**100%**
Municipal organisation chart	100%	88%	90%	90%	100%
Procedures and services	100%	63%	50%	90%	50%
Document management	67%	44%	30%	40%	50%
Public employment offer	100%	88%	80%	80%	100%
News	100%	100%	90%	80%	100%
Provincial Gazettes	50%	56%	90%	100%	100%
Activities	100%	100%	90%	80%	100%
Bulletin board and edicts	67%	69%	50%	70%	50%
Information about the Province	**83%**	**75%**	**80%**	**90%**	**100%**
Equipment and facilities	33%	38%	30%	20%	50%
Culture and Tourism	83%	75%	80%	70%	100%
Public funds enquiry	50%	31%	50%	30%	0%
Information for companies and economic promotion	**100%**	**94%**	**90%**	**100%**	**100%**
Enterprise creation	17%	25%	10%	50%	0%
Public sector contracting	100%	75%	90%	80%	100%
Job vacancies	67%	69%	70%	60%	50%
Aid and subsidy programmes	100%	94%	80%	90%	100%
Citizen participation services	**83%**	**75%**	**30%**	**60%**	**50%**
Surveys	17%	38%	10%	0%	0%
Forums	0%	0%	0%	0%	0%
Management of appointments	0%	13%	10%	20%	0%
Complaints and suggestions	83%	63%	30%	40%	50%
Private information services	**33%**	**31%**	**30%**	**10%**	**0%**
Record enquiries	17%	13%	0%	0%	0%
Tax data enquiries	17%	19%	10%	10%	0%
Billing enquiries	0%	6%	20%	10%	0%

Base: Total supramunicipal entities

Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society)

Electronic procedural services were not as common as they were not offered by such high percentages of supramunicipal entities compared to information services.

Electronic registers, the downloading of forms (within the application processing category) and interoperability services obtained the highest percentages in the five specific segments in the case of supramunicipal entities.

Table 26. Electronic procedural services

SEGMENTS	I	II	III	IV	V
Electronic Registration	17%	38%	30%	10%	0%
File Processing					
Form downloads	33%	44%	10%	20%	0%
Online applications without documents	17%	13%	0%	0%	0%
Online applications with documents	17%	13%	0%	10%	0%
Issuance of electronic referral notes	0%	13%	0%	10%	0%
Issuance of electronic certificates	0%	0%	0%	10%	0%
Electronic payment					
Point of Sale (POS)	0%	13%	0%	0%	0%
Payment into account	17%	13%	0%	10%	0%
Electronic banking	17%	19%	0%	0%	0%
Electronic invoicing	0%	0%	0%	0%	0%
Electronic notification	17%	6%	0%	0%	50%
Public tender process	17%	0%	10%	0%	0%
Interoperability	50%	38%	30%	60%	50%
Online representation of third parties	17%	19%	20%	0%	0%

Base: Total supramunicipal entities

Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society)

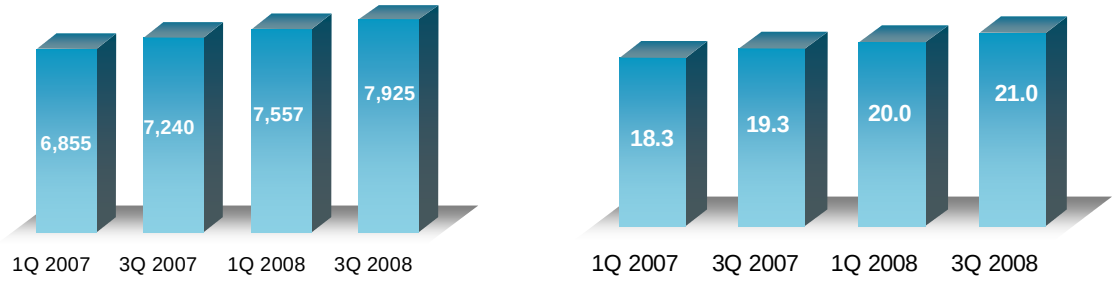
11.3. Electronic administration and citizens

A total of 21% of the population aged 15 and over have contacted the public administration via the Internet.

In accordance with the data collected in the 21st edition of the Household Panel prepared by the Spanish Observatory for Telecommunications and the Information Society of Red.es on a quarterly basis, during the period July-September 2008, nearly eight million individuals aged 15 and over were recorded as having contacted the public administration via the Internet at some time (for a procedure, an enquiry...).

This figure implies 685,000 individuals more than those who had done so up to the same period the previous year. In general, it is worth highlighting that 21% of the population aged 15 and over had already contacted the public administration (general, regional or local) via the Internet.

Figure 201. Individuals who have contacted the administration via the Internet



Thousands of individuals aged 15 and over

Percentage compared to the total number of individuals aged 15 and over

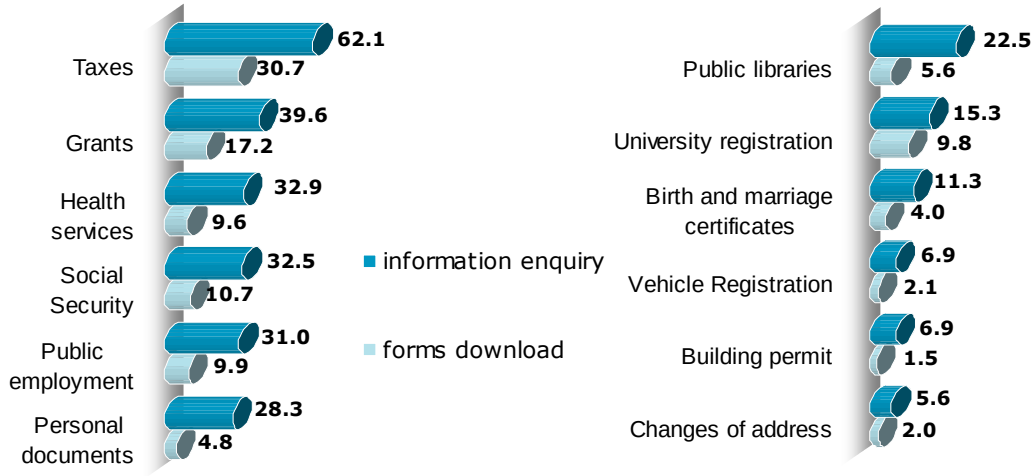
Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society)

Information enquiries were more common than form downloads

In general, in the field of public administration more information enquiries were made via the Internet than form downloads. In many cases, there were double-digit percentage point differences. The most frequent use of all was tax-related information enquiries, accounting for more than 62% of Internet users aged 15 and over. This was followed by enquiries about grants and aid (39.6%) and consultations related to healthcare services (32.9%). Changes of address and building permits were the least consulted aspects.

In relation to form downloads, the order varied slightly, although the most common form downloaded was for tax-related forms (30.7% of Internet users aged 15 and over). The second most downloaded forms were related to grants and aid (17.2%), followed by those directly related to social security procedures (10.7%).

Figure 202. Individuals who consult and download information via the Internet 2008 Q3 (%)



Base: Internet users aged 15 and over who have contacted the administration via the Internet

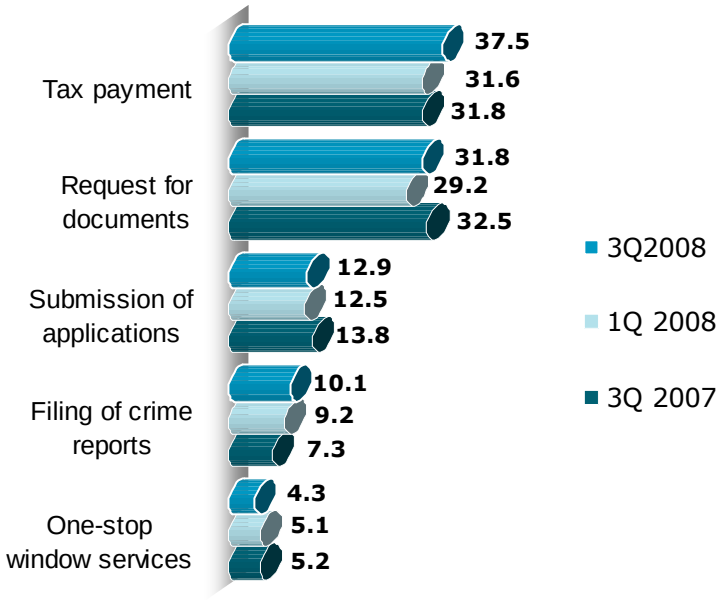
Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society)

In the last quarters, payment of taxes and document requests were the two formalities most frequently carried out by the highest percentage of Internet users aged 15 and over who had contacted the public administration via the Internet.

A total of 37.5% of Internet users paid their taxes via the

In the former, the percentage was 37.5% and in the latter, 31.8%. Other procedures were less common, with over-the-counter services recording the lowest percentage of users (4.3%).

Figure 203. Individuals who carried out procedures with the administration via the Internet (%)



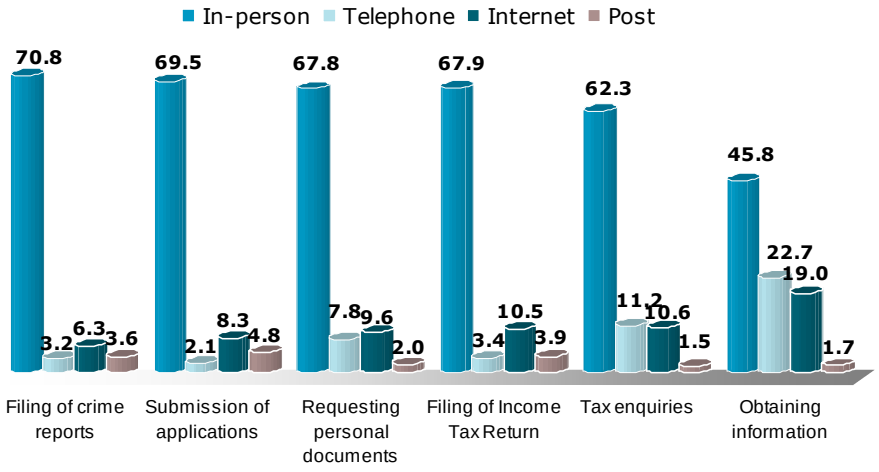
Base: Internet users aged 15 and over who have contacted the administration via the Internet

Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society)

In-person contact continued to be the preferred mechanism of Internet users aged 15 and over. With the exception of obtaining information, for which a considerable number of users preferred telephone contact (22.7%), and by Internet (19%), in the remaining formalities more than 60% preferred in-person contact.

The trend revealed that the greater the complexity of the procedure, the higher the number of Internet users who preferred in-person contact; while in less complex procedures, such as obtaining information, there was a higher proportion of users who preferred the telephone or the Internet.

Figure 204. Preferred method for contacting the public administration. 2008 Q3 (%)



Base: Internet users aged 15 and over

Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society)

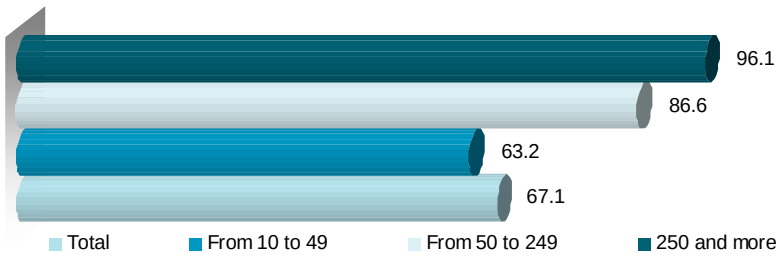
11.4. Electronic administration and companies

Electronic administration in SMEs and large companies

The percentage of companies that interact with the public administration via the Internet rose by 5%

A total of 67.1% of companies with 10 or more employees with Internet access interacted with the public administration in 2007. This is 5 pp above the figure recorded for the previous year (61.7%). Analysis of company size shows that the higher the number of employees, the higher the percentage of online contact with public entities. Companies with 250 or more employees record the highest level of interaction with the administration via the Internet (96.1%) followed by those with 50 to 249 employees, 86.6%, and finally those with 10 to 49 workers, 63.2%.

Figure 205. Companies that interact with the public administration via the Internet (%)



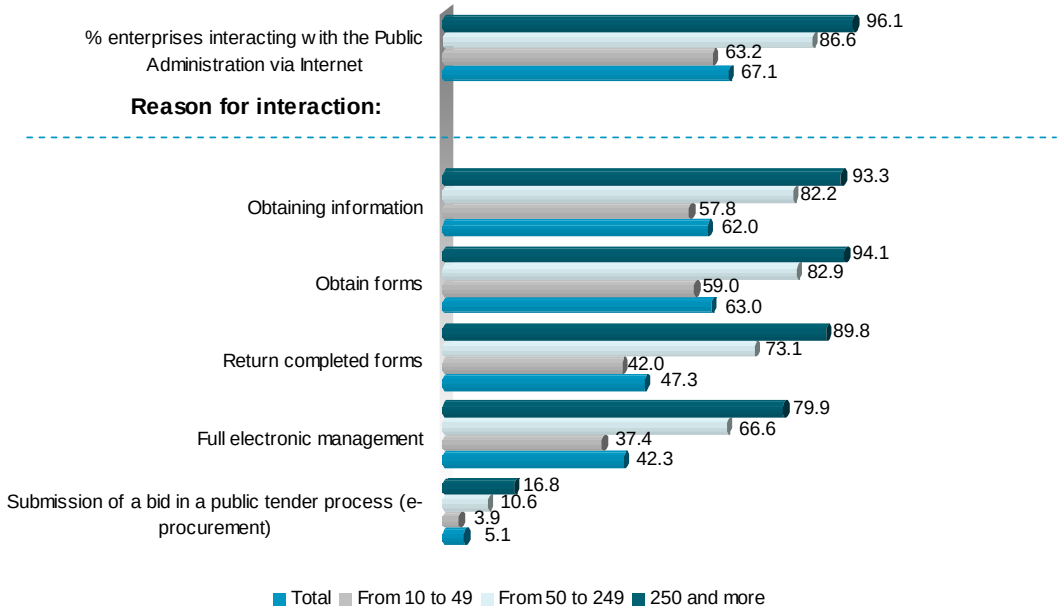
Base: All companies of 10 or more employees with Internet access

Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society)

Obtaining forms and obtaining information are the most common reasons for contacting the administration via the internet

The reasons companies with 10 or more employees contact the public administration via electronic means include obtaining forms and obtaining information, both of which are carried out by a high percentage of companies (63% and 62% respectively). Returning completed forms and integral electronic management are carried out by a large number of companies, while filing bids for public tender process (e-Procurement) is much less popular. This pattern extends to companies with all levels of employees where the larger the company, the higher the percentage.

Figure 206. Type of interaction with the public administration via the Internet (%)



Base: All companies of 10 or more employees with Internet access

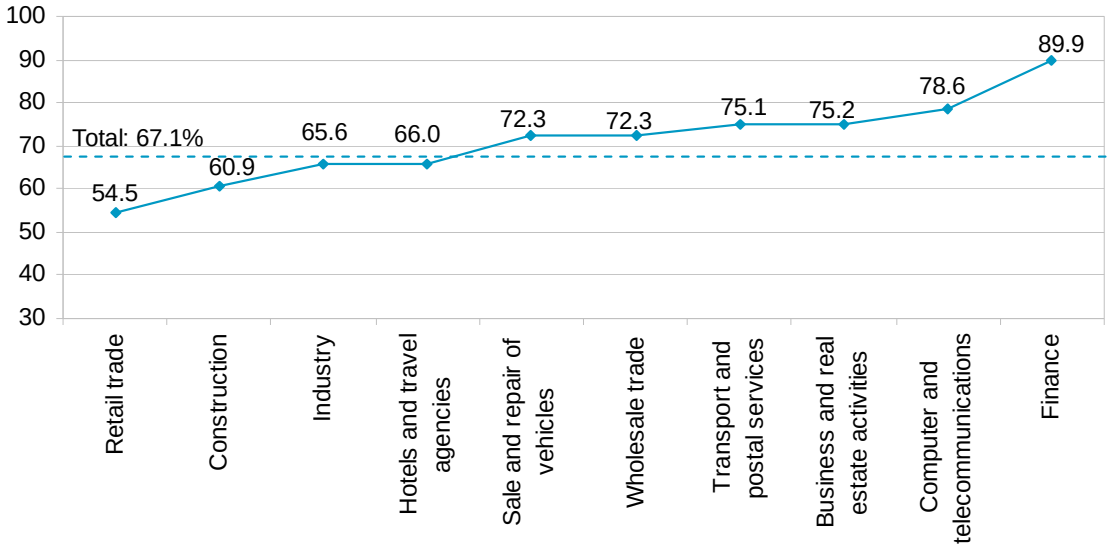
Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society)

Maturity of the finance sector in its online contact with the administration

The finance sector interacts with the administration via the Internet more than other sector, with around 90% of companies with 10 or more employees with Internet access contacting the administration via this means. Eleven percentage points lower, it is followed by the IT and telecommunications sector, with almost 79% of companies.

The figures for the transport and mail sector and business and real estate activities are very similar, with around 75% of companies from each sector interacting with the administration via the Internet. For companies that sell and repair vehicles and wholesale companies the figure is just over 72%. For the four remaining sectors selected for analysis, the figure is below the average at around 67.1%.

Figure 207. Companies interacting with the public administration via the Internet by sector (%)



Base: All companies of 10 or more employees with Internet access

Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society)

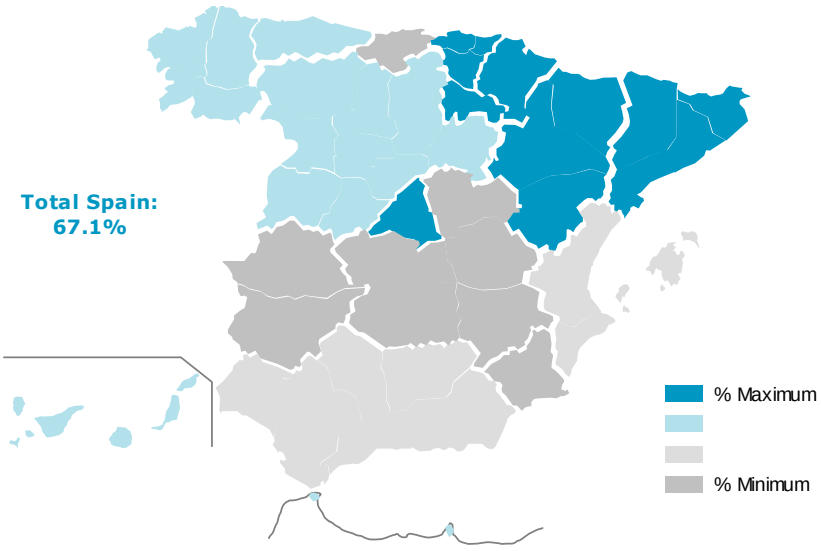
By autonomous regions, the average figure for SMEs and large companies that interact with the public administration via the Internet is 67.1%.

Ranked highest are Navarre and La Rioja, with figures of around 80%, followed by the Basque Country, Catalonia, Madrid and Aragon where more than 70% of companies interact with the authorities via electronic media.

More than 80% of companies in Navarre and La Rioja contact the administration via the internet

The percentages are lower in regions such as Murcia, Extremadura, Castilla-La Mancha and Cantabria, but the figure is above 55% in all cases, showing that interaction between companies and public entities is becoming increasingly widespread and is already well established among Spanish administrations.

Figure 208. Companies interacting with the public administration via the Internet by autonomous region (%)



Base: All companies of 10 or more employees with Internet access

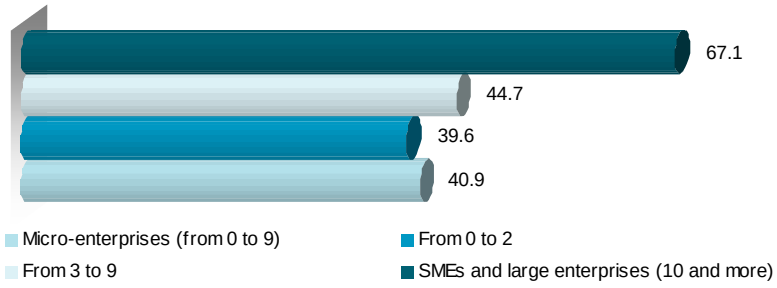
Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society)

Electronic administration in micro-companies

A total of 41% of micro-companies with Internet access interact with the e-Administration

An average of 41% of micro-companies (those with between 0 and 9 employees) with Internet access have contacted the public administration via the Internet. Those with between three and nine employees are the most active (44.7%) compared to those with 0 to 2 employees (39.6%).

Figure 209. Micro-companies that interact with the public administration via the Internet (%)



Base: Micro-companies and all other companies with Internet

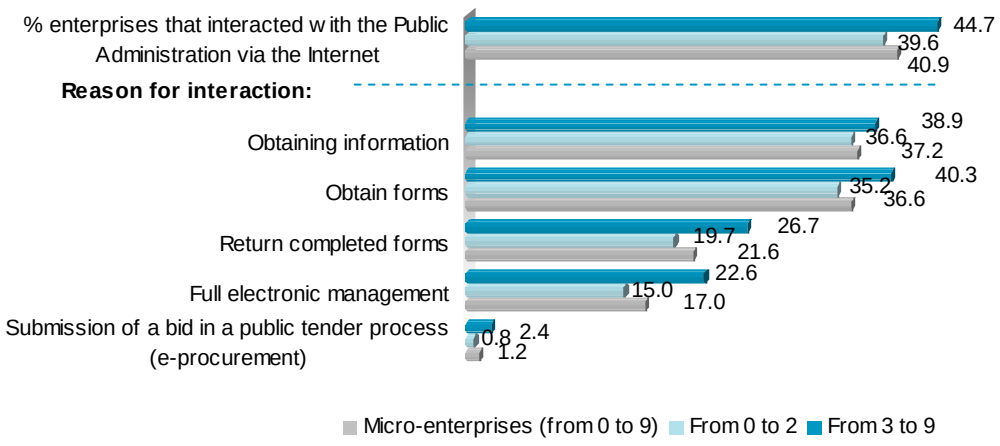
Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society)

A total of 37% of micro-companies use the Internet to obtain information from the administration

The reasons for contacting the public administration via the Internet are similar to those for SMEs and large companies. Obtaining information (37.2%) and obtaining forms (36.6%) are therefore the main reasons for interacting with public authorities carried out by the highest percentage of micro-companies. These are followed by returning completed forms (21.6%) and integral electronic management (17%). The only area in which there is a marked difference is in filing bids for public tender processes, also known as e-Procurement, which is carried out by 1.2% of micro-companies with Internet.

This pattern is the same for the two groups of micro-companies considered within this study; those with 0 to 2 employees and those with 3 to 9 employees.

Figure 210. Type of interaction with the public administration via the Internet (%)



Base: Micro-companies with Internet

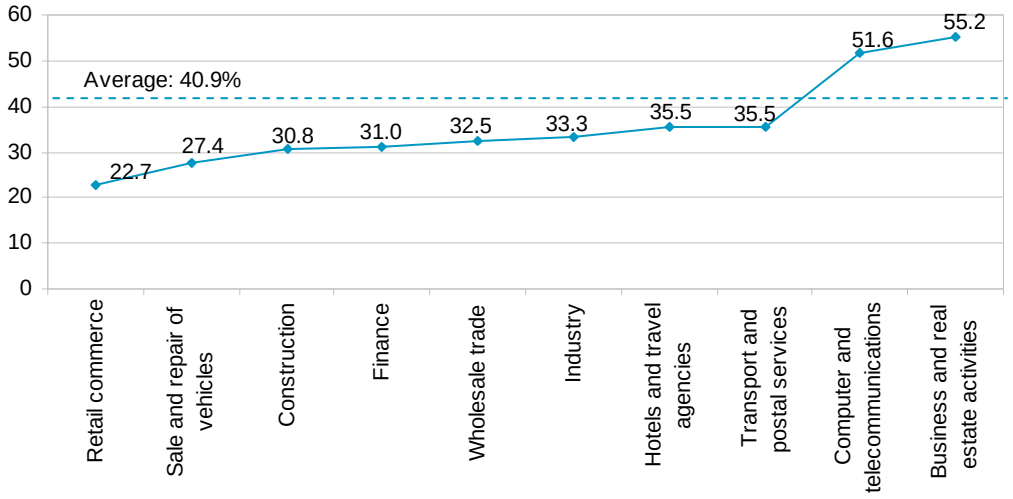
Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society)

The sectors most inclined to use e-Administration are business activities and real estate and IT and telecommunications

The sector analysis shows that, as in the previous year, the business activity and real estate sector has the highest percentage of companies that interact with the public administration via the Internet. Here the figure rose to 55.2%, almost 4 pp higher than the second placed sector, IT and telecommunications (51.6%).

All other sectors show figures below the overall average (40.9%), and the retail sector has the lowest percentage (22.7%).

Figure 211. Micro-companies that interact with the public administration via the Internet by sector (%)



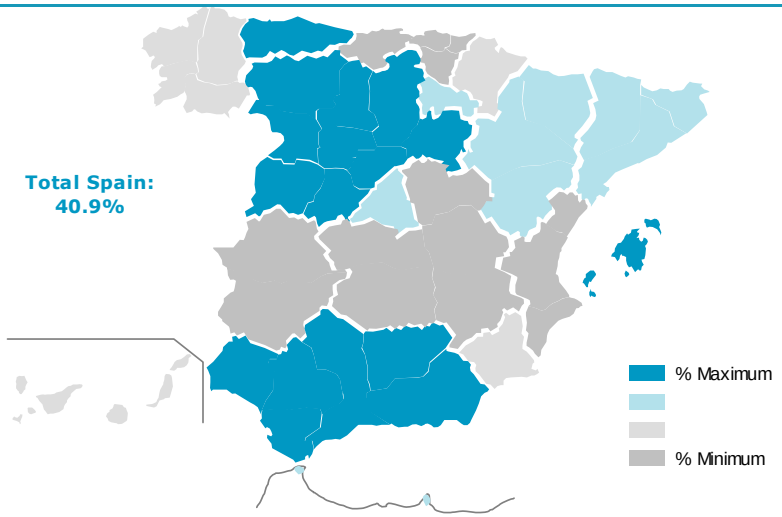
Base: Micro-companies with Internet

Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society)

Lastly, analysing companies' interaction with the public administrations from a regional perspective, in Asturias, Balearic Islands, Andalusia and Castilla-Leon more than 45% of micro-companies with Internet access interact with the administration via this medium.

At the other end of the scale are Extremadura, Cantabria, Castilla-La Mancha, Valencia and the Basque Country with between 25% and 35%.

Figure 212. Micro-companies that interact with the public administration via the Internet by autonomous region (%)



Base: Micro-companies with Internet

Source: ONTSI (Spanish Observatory for Telecommunications and the Information Society)

The Networked Society 2008
Annual report

12. Sources and methodology

12. SOURCES AND METHODOLOGY

Chapter 4. The Information Society in the world

Source: DigiWorld 2009 Spain: The challenges of the digital world. IDATE, Enter

Additional information:

http://www.enter.es/enter/cms/es/informe/3666/1

Source: ICT Statistics database 2008. ITU

Additional information:

http://www.itu.int/ITU-D/ICTEYE/Indicators/Indicators.aspx

Source: Internet World Stats 2008

Additional information:

http://www.internetworldstats.com/

Source: Point Topic

Additional information:

http://point-topic.com/

Source: Power to the people – Social Media Tracker Wave 3, Universal McCann 2008

Additional information:

http://www.universalmccann.com/Assets/wave_3_20080403093750.pdf

Source: ComScore World Metrix

Additional information:

http://www.comscore.com/metrix/gs.asp

Source: White paper on digital content in Spain, 2008, ONTSI (Spanish Observatory for Telecommunications and the Information Society)

Additional information:

http://observatorio.red.es/articles/detail.action?sec=1488&id=2662

Chapter 5. The Information Society in Europe

Source: Eurostat

Additional information:

http://epp.eurostat.ec.europa.eu/portal/page?_pageid=1996,45323734&_dad=portal&_schema=PORTAL&screen=welcomeref&open=/isoc/isoc_pi/isoc_pibi&language=en&product=EU_MASTER_information_society&root=EU_MASTER_information_society&scrollto=0

Technical specifications:

http://europa.eu.int/estatref/info/sdds/en/isoc/isoc_pi_base.htm

Chapter 6. The ICT and Audiovisual Service Sector in Spain

Source: ICT Sector in Spain 2008. 2009 Edition, ONTSI (Spanish Observatory for Telecommunications and the Information Society)

Additional information:

http://observatorio.red.es/

Chapter 7. ICTs in Spanish Households: access and use

Source: Red.es Household Panel. 22nd Edition

Additional information:

http://observatorio.red.es/hogares-ciudadanos/articles/129

Technical specifications:

Universes: 16,071,425 households and 37.810 million individuals aged 15 or over.

Sample: 3,052 households of which 2,900 met the requirements for the tabulation of invoices and 6,114 individuals aged 15 or over.

Scope: Mainland Spain, the Balearic Islands and the Canary Islands

Sample design: For each of the autonomous communities, proportional stratification by type of habitat, with social segment quotas, taking into account the number of people in the household and the presence of children under 16.

Questionnaires: In addition to quarterly collection of invoices, a postal survey is sent every six months to panel members. This includes the household questionnaire and another individual questionnaire for all household members aged 10 and over. The first questionnaire covers information on the household's technological equipment, individuals' uses, habits and attitudes.

Fieldwork: The field work and data processing has been carried out by Taylor Nelson Sofres (TNS). Collection of invoices for the period October-December 08 was completed during February 2009.

Sampling error: Assuming simple random sampling criteria, for maximum uncertainty (p=q=50%) and a level of confidence of 95.5%, the maximum sampling errors made are ±1.77% for households and ±1.21% for individuals.

Source: Study of B2C Electronic Commerce 2009

Technical specifications:

Information collection Telephone interviews using the CATI (Computer Assisted Telephone Interview) system.

Dates of information collection From 14 April to 8 May 2009.

Geographical scope: National

Sample: Panellists from the ICT Red.es Household Panel. Internet user population aged 15 and over.

Reference population
Population aged 15 and over: A total of 37,810,051 individuals. Source: Spanish Institute for Statistics (INE) forecasts for 2007 from the 2001 Census. 2008
Internet users: 22,033,501 individuals. Internet penetration (58.3%): Red.es ICT households panel (September 2008).

Sample size 2,137 Individuals aged 15 and over:

Fieldwork: Performed by Redecampo

Weighting: The results were weighted according to the socio-demographic profile of Internet users over 15 obtained from the Red.es panel dated July-September 2008. At the household level, the weighting criteria considered were: autonomous region, size of populated area where the home is located, size of household, social class (general media study social class), presence of children in the home and age of the head of the household; and at an individual level: gender and age.

Error margin

For the Internet purchasers in 2008 group: ±3.4%

For the non-purchasers in 2008 group: ±2.7%

For the total sample: ±2.1%

Source: Survey on Information and Communication Technology Equipment and Use in Households, ICT-H Survey 2008 (Spanish Statistics Institute)

Additional information:

http://www.ine.es/metodologia/t25/t25304506608.pdf

Source: Impulsa TDT (Association for the Implementation and Development of Digital Terrestrial Television in Spain) on EGM (General Study of Media) data prepared by the AIMC (Association for Communication Media Research).

Additional information:

http://www.impulsatdt.es/observatorio

Chapter 8. ICTs in Spanish households by autonomous region

Source: Survey on Information and Communication Technology Equipment and Use in Households, ICT-H Survey (Spanish National Statistics Institute)

Technical specifications: The 2008 ICT-H Survey is a panel survey aimed at people aged ten and above living in family homes, which gathers information on the household's information and communication technology equipment (television, telephone, radio, IT equipment) and computer, Internet and electronic commerce use.

Sample: The research population consists of 15,079,873 households, from which information is taken from a single main informant (34,497,946 individuals aged 16 to 74).

Sample design: Three stage sampling is used with stratification of the first stage units.

The first stage units are the census tracts. The second stage units are the main family homes and the third stage is the selection of a person over 15 years of age from each household. All children aged 10 to 15 are also studied.

The framework used for selecting the sample is an area framework based on the list of census tracts available for 1 January 2001. To select second stage units, the list of the main family homes in each tract selected for the sample has been used, obtained from the latest available continuous register.

The tracts are grouped into strata within each autonomous region in accordance with the size of the municipality to which they belong.

Sample The theoretical sample size is more than 25,000 homes, of which one quarter are changed each year. In this latest survey, the sample was composed of 32,085 homes of which 25,757 were owners and the rest were used as reserves.

Technical: Personal interview with laptop computer or tablet (CAPI): The interviewer did not use paper questionnaires, but instead had a laptop computer containing the questionnaire and the interviews were conducted using this computer.

Using this method the households from the tracts within the new sample and the households already included in the 2007 sample for which there was no contact phone number are interviewed.

Telephone interview in a CATI centre: households from the 2007 sample are interviewed by telephone from a CATI centre wherever a phone number is available. The interviewer does not use paper questionnaires but records the interviewees' answers directly onto the electronic questionnaire.

Fieldwork: 25-February 2008 to 6 June 2008.

Sample errors and estimates: see additional information.

Additional information:

http://www.ine.es/metodologia/t25/t25304506608.pdf

Source: Red.es Household Panel. 22nd Edition

Methodological differences regarding household panel justify the small differences in relation to national data, Chapter 7 "ICTs in Spanish Households: access and use"

Additional information:

http://observatorio.red.es/hogares-ciudadanos/articles/129

Source: Impulsa TDT (Association for the Implementation and Development of Digital Terrestrial Television in Spain) on EGM (General Study of Media) data prepared by the AIMC (Association for Communication Media Research).

Additional information:

http://www.impulsatdt.es/observatorio

Chapter 9. ICT in Spanish SMEs and large companies

Source: Tables of the Survey on the Use of Information and Communication Technologies and Electronic Commerce Use in Companies 2008, carried out by the INE (Spanish Statistics Institute) and supplied to Red.es through a collaboration agreement.

Technical specifications:

Sample

Companies with 10 or more employees: 17,208 companies

Companies with less than 10 employees: 12,222 micro-companies

Demographic scope

Population comprised of companies whose main activity is described in sections D, E, F, G, H, I, J and K and in groups 92.1 or 92.2 of section O of the CNAE-93 (Spanish Economic Activity Code). The analysed sectors are manufacturing industry; energy, gas and water production and distribution; construction; retailing and wholesaling; hotels and restaurants; transport and communications; financial brokerage; rental activities and business services; and film, radio or television activities.

Territorial scope

Spain (Detailed analysis by Sector and Autonomous Region)

Date of fieldwork

The information referring to ICT infrastructures and use was compiled in the first quarter of 2008 while the reference period for electronic commerce is December 2007.

Additional information:

http://www.ine.e s/jaxi/menu.do?type=pcaxis&path=%2Ft09/e02&file=inebase&L=0

http://observatorio.red.es/empresas/articles/id/3253/las-tecnologias-la-informacion-comunicacion-la-empresa-espanola-2008.html

Chapter 10. ICTs in Spanish micro-companies

Source: Tables of the ETICCE (Survey on the Use of Information and Communication Technologies and Electronic Commerce Use in Companies) 2008, carried out by the INE (Spanish Statistics Institute) and supplied to Red.es through a collaboration agreement.

Technical specifications:

Sample

Companies with 10 or more employees: 17,208 companies

Companies with less than 10 employees: 12,222 micro-companies

Demographic scope

Population comprised of companies whose main activity is described in sections D, E, F, G, H, I, J and K and in groups 92.1 or 92.2 of section O of the CNAE-93 (Spanish Economic Activity Code). The analysed sectors are manufacturing industry; energy, gas and water production and distribution; construction; retailing and wholesaling; hotels and restaurants; transport and communications; financial brokerage; rental activities and business services; and film, radio or television activities.

Territorial scope

Spain (Detailed analysis by Sector and Autonomous Region)

Temporal scope

The ETICCE (Survey on the Use of Information and Communication Technologies and Electronic Commerce in Companies) covers two time periods; the variables on ICT use refer to January 2008, while the reference period for the electronic commerce variables is 2007.

Additional information:

http://www.ine.es/jaxi/menu.do?type=pcaxis&path=%2Ft09/e02&file=inebase&L=0

http://observatorio.red.es/empresas/articles/id/3253/las-tecnologias-la-informacion-comunicacion-la-empresa-espanola-2008.html

Chapter 11. The Electronic Administration

Source: Red.es study on information and communication technologies in local public administration.

Technical specifications:

Universes: 8,109 municipalities and 52 provincial councils with a population of 44,108,530.

Sample: To March 2008, 2,523 municipalities and 44 councils.

Scope: Mainland Spain, the Balearic Islands and the Canary Islands

Sample design: Stratified sample. Questionnaires sent via an electronic channel or by post to the 8,109 municipalities divided into six strata which are determined in accordance with a synthetic indicator which is calculated on the basis of financial, population and municipal budget variables. Also, personal interviews with the 52 provincial councils. The definitive sample is determined by the number of responses received.

Questionnaires: The structure of the questionnaire includes:

- General figures
- ICT technological infrastructure, connectivity and internal management.
- Relations with citizens and companies
- Financial and training investment in ICTs

Fieldwork: The field work and data processing has been carried out by T-Systems.

Sampling error: Assuming stratified sampling criteria, for maximum uncertainty (p=q=50%) and a level of confidence of 95%, the maximum sampling errors made for the strata are distributed as follows:

Segments	No. of city councils	No. of surveys answered	% error (p=q=50%)
A1	200	185	2.02
A2	350	245	3.50
B	1,000	368	4.15
C	1,500	413	4.19
D	2,000	603	3.40
E	3,059	709	3.29
TOTALS	8,109	2,523	1.65

Segments	No. of entities	No. surveys answered	% response
I	8	6	75.0
II	17	16	94.0
III	13	10	77.0
IV	11	10	91.0
V	2	2	100.0
TOTALS	51	44	86.0

Synthetic Indicator: By calculating a synthetic indicator, town and city councils can be divided into 6 strata, based on a set of variables. The grouping is not carried out using a traditional population indicator, but rather by using other variables of a different incidence which enable the *municipal potential* to be obtained.

The relative potential value of each municipality is obtained not only by taking into account the population, but also using a broad set of variables with different importance weightings. To do this a multi-variable indicator has been devised. The results are presented using Spain = 100,000 as the base

$$Índice_i \frac{Valor_i del municipio_j * 100.000}{\sum_{j=1}^{8.109} Valor del municipio_j = Valor España}$$

Once each indicator has been calculated, the synthetic indicator is obtained as follows:

$$Pm_j = \frac{(\alpha_1 I_1)(\alpha_2 I_2)(\alpha_3 I_3)}{\sum\{\alpha_1, \alpha_2, \alpha_3\}}$$

Where:

Pm_j = municipal potential (synthetic indicator) of the municipality j

$\{\alpha_1, \alpha_2, \alpha_3\}$ = set of importance weightings

$\{I_1, I_2, I_3\}$ = set of indices of the selected variables

The indices taken into consideration are:

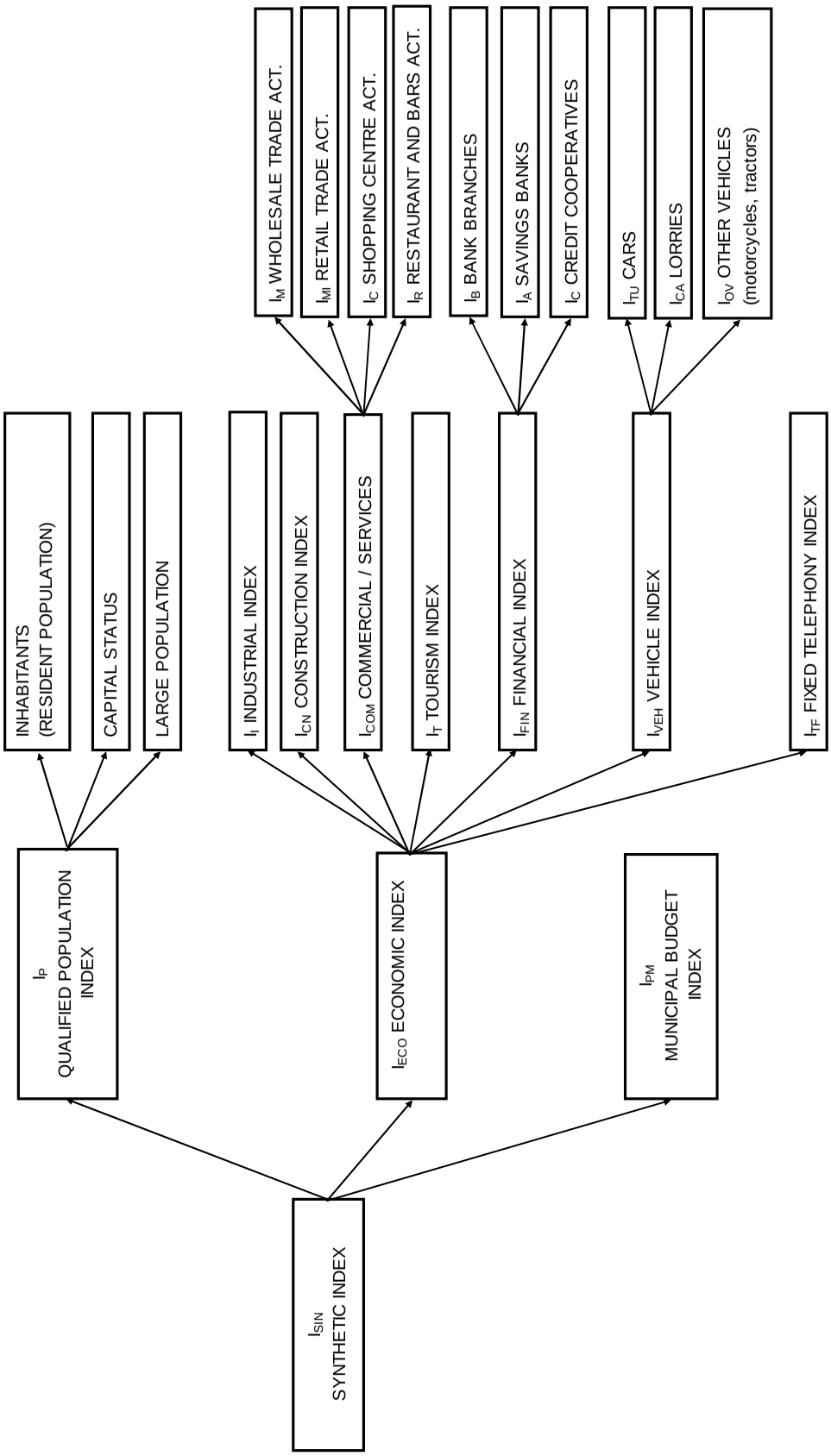
I_1 - Economic

I_2 - Population

I_3 - Municipal budgets

Synthetic indicator: The following importance weightings, obtained through a number of working sessions with committees of experts, are then applied to the three level one indices

	FINAL WEIGHTINGS	
INDICES	RESULT	ROUNDED
COMMERCIAL		
Wholesalers	0.32141	0.32
Shopping Centres	0.28953	0.29
Retailers	0.24276	0.24
Restaurants and bars	0.14630	0.15
FINANCIAL		
Banks	0.53244	0.53
Savings banks	0.32893	0.33
Credit cooperatives	0.13863	0.14
VEHICLES		
Cars	0.57500	0.58
Trucks	0.28978	0.29
Other vehicles	0.13522	0.13
ECONOMIC		
Industrial	0.34378	0.34
Financial	0.20827	0.21
Trade	0.17371	0.17
Tourism	0.14208	0.14
Construction	0.00878	0.09
Vehicles	0.03026	0.03
Landline telephony	0.01412	0.02
SYNTHETIC		
Qualified population	0.41904	0.42
Economic	0.38594	0.39
Municipal budgets	0.19502	0.19


I_{SIN} SYNTHETIC INDEX
I_P QUALIFIED POPULATION INDEX
I_{ECO} ECONOMIC INDEX
I_{PM} MUNICIPAL BUDGET INDEX
INHABITANTS (RESIDENT POPULATION)
CAPITAL STATUS
LARGE POPULATION
I_I INDUSTRIAL INDEX
I_{CN} CONSTRUCTION INDEX
I_{COM} COMMERCIAL / SERVICES
I_T TOURISM INDEX
I_{FIN} FINANCIAL INDEX
I_{VEH} VEHICLE INDEX
I_{TF} FIXED TELEPHONY INDEX
I_M WHOLESALE TRADE ACT.
I_{MI} RETAIL TRADE ACT.
I_C SHOPPING CENTRE ACT.
I_R RESTAURANT AND BARS ACT.
I_B BANK BRANCHES
I_A SAVINGS BANKS
I_C CREDIT COOPERATIVES
I_{TU} CARS
I_{CA} LORRIES
I_{OV} OTHER VEHICLES (motorcycles, tractors)

Additional information:

http://observatorio.red.es/administracion-local/articles/id/3150/estado-las-tic-la-administracion-local.html

Source: Red.es Household Panel. 21st Edition

Additional information:

http://observatorio.red.es/hogares-ciudadanos/articles/id/3135/xxi-oleada-del-panel-hogares-julio-septiembre-2008.html

Source: Tables of the ETICCE (Survey on the Use of Information and Communication Technologies and Electronic Commerce Use in Companies) 2008, carried out by the INE (Spanish Statistics Institute) and supplied to Red.es through a collaboration agreement.

Additional information:

http://www.ine.e s/jaxi/menu.do?type=pcaxis&path=%2Ft09/e02&file=inebase&L=0

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