

Information Society Plan for Andalusia (2007 - 2010)

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1 INTRODUCTION

1.1 Information and Knowledge Society

The rapid development of information and communication technologies (ICTs) is accelerating a process of globalisation that is transforming the world of social relationships and restructuring the organisation of work and the economy. Andalusia is immersed in this process of change that has led to an inter-connected society, without spatial or temporal limitations, that is expanding at a global level and is redefining social, economic and cultural relationships because it profoundly alters the operating parameters of the way we live and communicate.

The evolution of this process is converting industrial society into an information and knowledge based society. This new phase in the general modernisation process is referred to as the “Second Modernisation” in Andalusia.¹ It is a process that occurred when the Andalusian government (Gobierno Andaluz) realised that it had to promote a second wave of modernisation that would address the growing globalisation of the economy, promoting policies on innovation, equal opportunities, the fight against social exclusion and developing e-Government, knowledge of foreign languages and the basic skills required to participate in knowledge society.

Andalusia understood that this transformation would open new opportunities to position itself among the most economically and technologically advanced regions in the world. This is founded on conclusive international evidence. Countries such as the Korean republics, Ireland and China have improved their levels of employment and productivity by taking advantage of and benefiting from new technologies, innovation and knowledge. Nevertheless, it should be realised that this phenomenon does not occur from a zero base. The possibility for a region to develop is defined by its prior status in terms of variables that are strategic for production and social development, such as education, productivity, investment in R&D+i and the internationalisation of business. ICTs improve all these factors and therefore drive economic and social change depending on the transformations created by economic globalisation.

ICTs not only have a technological impact, but also an important effect on the economic development of communities. Although growth of the information industry is important, the real potential of ICTs lies in their use and their ability to increase productivity of the economy in general rather than in the sector itself. In the European Union the sector accounts for 5.6% of GDP, but 25% of GDP and 45% of productivity growth is attributable to these technologies.²

This situation has not eluded the European Commission. As part of the process to relaunch the Lisbon objectives, the i2010 initiative is the continuation of the eEurope action plan which seeks to make Europe the strongest knowledge based economy in the world. It is a global European information society strategy for economic growth and employment creation. The set of political measures proposed by i2010 are defined in

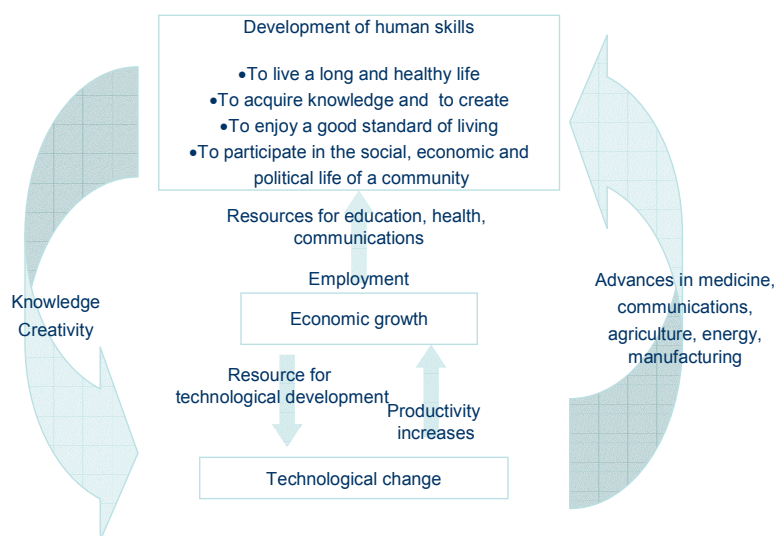
¹ <http://andaluciajunta.es/Moderniza-Dos/>

² i2010 report data – First Annual Report on European Information Society (2006)

three priority lines, known as the three “I”s: creation of a single European (I)nformation space; increase in the (I)nvestment in ICT research; and the promotion of social (I)nclusion via quality digital public services.

The support of the UN at the World Summit on Information Society held in Tunis in November 2005 is also an example of the profound impact of ICTs on the economy of communities and on the lives of individuals. At this forum, Kofi Annan defined information society as that through which “...*human capacity is expanded, built up, nourished and liberated, by giving people access to the tools and technologies they need, with the education and training to use them effectively.*”³

The Human Development Report 2001 explained in an already classic diagram, that the relationship between technological advances and social and economic development was an equation in which many factors play a part and that could not be explained by a single economic variable. In this diagram, technological innovations in human development interact in two ways. One the one hand, they directly impact human capacity, and on the other, they affect economic growth thanks to the increase in productivity that they create.



Relationship between technology and human development

As the diagram shows, the development of people’s capabilities directly influences technological development.⁴ Therefore, human development and technological advances strengthen each other, creating a virtuous circle that opens up enormous possibilities that lead to a growing knowledge society.

Technological development needs special emphasis to identify emerging technologies. The European Union defines which will be the initial technological bases that will provide natural access to the services of information and knowledge society, in the Seventh R&D Framework Program.

³ UN Secretary General. Tunis 2005

⁴ Included in the Human Development Report 2001

In the content and audiovisual environment, new services and possibilities appear related to digital and high definition TV, localisation based services, learning systems and artificial systems that learn, cooperate and act independently, among others.

In our personal world there are sensors, microsystems and devices implanted in the human body or embedded in personal effects (nanotechnology). In the home, there are intelligent devices and robotic systems.

In the field of telecommunications, the diversity of existing technologies and those being developed will allow ubiquitous communications networks to be rolled out throughout Andalusia, at an affordable price, and with unlimited transmission capacity. Furthermore, the phenomenon of technological convergence enables a natural evolution towards unified fixed and mobile telephony and content convergence from a user's perspective.

Although it is an expression from the ICT technological revolution, the development of information society cannot be reduced to technical advances and the creation of infrastructures. Although these are the core issues, the efforts that are made in this area will continue to be insufficient if they are not supplemented with actions in the field of education, the incorporation of innovation culture in companies, the promotion of research into ICTs and with institutional and regulatory adjustments that change the patterns of interaction in economic, social and political activities.

In short, it is about creating an information society with solid foundations on which a genuine knowledge based economy can be built, and a knowledge society in the widest sense of the word. This is the context in which Andalusia is focussing its efforts to increase the competitiveness of its companies and to maintain growth, contributing to increasing the standard of living and creating more employment.

1.2 Background

The full incorporation of the autonomous community of Andalusia into the information and knowledge society has been a priority strategic objective of the Andalusian regional government (Junta de Andalucía) ever since this new outlook appeared on the global stage during the last decade. Plans and actions have been formulated in coordination with the policies of our larger environment, especially at a European level, and which have been carefully monitored by the Andalusian authorities.

The European Union starts from the principle that education and training are essential for achieving the ambitious social and economic targets that have been set for 2010, and that information and knowledge society is synonymous with a highly educated citizenship and well trained employees. The Council of Europe therefore tackled this process on a special basis, in an extraordinary meeting held in Lisbon on 23 and 24 March 2000, and whose central theme was to consider the development of ICTs as an instrument for consolidating a knowledge based economy, by promoting employment, economic reform and social cohesion. The result of this meeting was the Lisbon Agenda.

In 2005 the Spanish government formulated the *Plan Avanza* following successive failed initiatives launched during the 2001-2004 period, such as InfoXXI (2001-2003) and España.es (2004-2005). It is based on the foundations laid down in the Lisbon Agenda and it attempts to implement an economic growth model through the appropriate use of ICTs based on the increase in competitiveness and productivity, the promotion of social and territorial equality and the improvement in welfare and the quality of life of citizens, with a time horizon of 2010.

The Andalusian regional government is fully aware of the opportunity presented by the development of information and knowledge society towards the economic and social development of the region. From the outset, the regional institutions have been deeply involved in the implementation of ICTs in order to make them more accessible to Andalusian citizens, to increase their use in every area of our society and to drive the technological convergence of Andalusia with its environment.

The Andalusian administration (Administración andaluza) has made strategic plans and carried out diverse actions in order to align itself with the most advanced countries and regions. In 2001 it launched the i@landalus plan of strategic initiatives for the development of information society, which implemented numerous projects designed to accelerate Andalusia's incorporation into this new era through the balanced deployment of the necessary infrastructures, the creation of quality electronic services and raising citizens' awareness of ICT use.

One of the principal milestones of this plan was the launch of the Guadalinfo Program in 2002 as a pilot initiative, and as a general program in 2004, and which created the largest network of public broadband internet centres in Spain and Europe. Its strategic objective was to tackle the problem of the digital divide (the division in society between those who have access to the new digital technologies and those who do not) by making these facilities available to citizens and promoting their computer literacy. At the end of 2006 Guadalinfo had created 637 centres, one in each of the 637 towns of less than 10,000 inhabitants that exist in Andalusia. The next phase will extend the network of centres by targeting the marginal areas in these municipalities.

Mercurio is the name of another program, which promoted the extension of telecommunications infrastructures to provide broadband internet access to companies located in more remote and inaccessible locations. In 2001 the Technological and Innovation Development Plan (Plan de Desarrollo de Innovación y Desarrollo Tecnológico, PLADIT) was established. Other initiatives have aimed at promoting electronic services and digital training in the Andalusian administration such as the Organisation Development Plan for Service Quality (Plan de Desarrollo de Organización para la Calidad de los Servicios, PLADOCS).

Various legislative milestones have been achieved, designed to provide the legal framework that consolidates the work of public administrations in this field and to give stability to social progress. Of special note is the Decree of Measures to Promote Knowledge Society in Andalusia that the regional government approved on 18 March 2003. Its strategic objective was to ensure that ICTs became the decisive factor in our region for accessing social development in which the ability to access information, and more importantly, the ability to know how to use it appropriately, creating knowledge,

becomes the key element in achieving new standards of productivity and competitiveness in the economy and the best way of developing Andalusian society.

Finally, we would highlight decrees 137/2004 and 7/2004 for aid to Andalusian families that include specific measures to promote the use of ICTs through incentives to buy I.T. equipment and discounts on domestic internet connection charges.

1.3 The Need for a New Information Society Plan in Andalusia

In a society in which information and knowledge have become the principal productive factor, efforts to tackle the threat of exclusion from the new *status quo* created by the internet and globalised access to knowledge are inadequate. Governments in the most developed countries have identified ICTs as fundamental instruments towards achieving a better position in the world, through sustained economic growth based on the increase in productivity and competitiveness, and at the same time, capable of improving citizens' welfare and quality of life.

The region of Andalusia has undoubtedly made significant advances in developing the information and knowledge society, but these advances have not occurred in an isolated context, but from strong competition between all European regions to become one of the most advanced on a continent that has also committed itself to becoming the world leader. This has led to an extraordinarily dynamic situation in which objectives need to be continuously reviewed and updated.

In particular, the boom in the development of technologies allows new outlooks to become established and the belief that now is a good time to reflect on the overall efficiency of the policies implemented in order to strengthen and reformulate them based on the objectives reached. The Andalusian administration is currently faced with the challenge of studying and developing its understanding of the situation created in 2006, so that it can take a new step towards developing information and knowledge society.

Today is a symbolic milestone, halfway between the start of the 21st century and the decisive 2010 time horizon set by the European Union in its program *A European Information Society for growth and employment*, which sets out to achieve an open and competitive internal market for information society. The main objective of this program is to establish a single European information space that offers affordable and secure broadband communications, rich content and all types of digital services.

This new community framework is another factor behind the need to accelerate Andalusia's incorporation into information and knowledge society, using innovation as the key vector for progress. The community should be the channel via which Andalusia tackles its objective to become one of the most advanced regions in the European Union. An objective that should be planned and defined within the framework of the national Avanza Plan as the reference and cooperation framework among all competent public administrations in Spain.

Following this policy and as part of the global Second Modernisation project implemented by the Andalusian regional government, in 2005 the regional government

approved the Andalusian Modernisation and Innovation Plan (Plan de Innovación y Modernización de Andalucía, PIMA) drafted by the Regional Ministry of Innovation, Science and Enterprise (Consejería de Innovación, Ciencia y Empresa, CICE) as a framework to rejuvenate the autonomous community in line with the new socio-economic culture of the 21st century.

The strategic driver behind the PIMA is the priority given to the concept of innovation as an open attitude to change, starting from the belief that this attitude can provide Andalusia with the best opportunity for progress and welfare in our society. The Andalusian Modernisation and Innovation Plan (PIMA) therefore includes the preparation of this Information Society Plan for Andalusia (Plan Andalucía Sociedad de la Información, ASI) during the 2007-2010 period for this precise reason, taking into account the uptake and use of ICTs as a key element towards achieving it.

As a result, the Andalusian regional government proposes using this new plan as a global, integrated and coherent approach, not only for the regional government, but also for the entire range of economic, social and institutional agents that share the strategic objectives inherent in it, making the plan an instrument that allows the Andalusian region to achieve the level of development desired in the context of information and knowledge society.

To achieve this objective, the Plan must be conceived as a joint action for the whole of the Andalusian administration since its content impacts every area of public activity in the autonomous community. This gives the document a transversal, common policy character that must therefore be assumed and executed by all public agents in our autonomous region, including each and every one of the regional ministries of the Andalusian government as a priority.

1.4 General Principles

This document contains all the analytical elements, strategic guidelines, definition of objectives, action measures and management tools required to make it an effective planning instrument.

The Plan has therefore been drafted with the direct internal participation of all the regional ministries that comprise the government. They have all contributed ideas, projects and budgets both at an individual and joint level through their representation in the Interdepartmental Commission for the Information Society (Comisión Interdepartamental de la Sociedad de la Información, CISI), which guarantees their maximum commitment to implementing it.

This new planning exercise has been carried out based on the experience and the results obtained, integrating and reinforcing the policies that have proven to be functional and effective, and supplementing them with others as required, in order to adapt them to the new needs but with a clear vision of the future.

Nevertheless, although drafting the Plan is important as an expression of our intentions, ensuring that it is carried out and is effective over its implementation period is

much more vital. The necessary aspects related to the real financing that appear under the headings of the planned measures have therefore been defined in the drafting process and are related to the specific projects defined by each of the regional ministries and their corresponding budgetary consideration.

Nevertheless, the final purpose of the Plan is to achieve a series of strategic objectives that affect the whole of Andalusian society. The drafting process therefore included the participation and collaboration of a wide group of representative organisations such as economic and social agents, users and logically the local administrations of Andalusia, seeking the maximum consensus to drive this common project. Specific coordination and monitoring mechanisms will be established to implement the measures in which these agents are directly participating.

Likewise, the Plan incorporates a series of indicators for each of the action areas that allow the set of measures implemented to be monitored and assessed. The most important indicators that provide an overview as well as indicating the overall level of progress in detail have been selected, identifying the starting point whenever possible and the target result at the end of the period.

The Plan must identify and create the appropriate organisations and tools to monitor the implementation of the actions and their impact on the objectives set. Furthermore, regulations, decrees or agreements will have to be adopted to ensure the success of the Plan and as a way of committing to it and acting as short term incentives.

2 THE CURRENT STATUS OF INFORMATION SOCIETY IN ANDALUSIA

Strengthening information society requires significant delegation of the work and the responsibilities. Citizens, companies and public administrations need to be prepared to undertake this work as part of a social model in which knowledge and information are essential elements. This is coherent with the Plan's general objective which is to share the advantages and the added value that can be provided by using new technologies and the services based on them, with every area of Andalusian society (citizens, companies and public administrations). It is easy to appreciate that an interest to learn or an attitude open to innovation are basic prerequisites for fully taking advantage of the potential that ICTs put in our hands.

It is essential to understand how ICTs are being incorporated and how quickly they are being taken up in all of the indicated areas, both to overcome potential bottle necks as well as to improve and modernise the competitive basis of Andalusian society. Understanding the current status of information society in Andalusia allows the real magnitude of the changes that may be taking place to be assessed, and gives those involved greater possibilities to take a direct role in its future development.

A global analysis and view of information society indicators in Andalusia and their convergence with Spain and Europe clearly show that significant progress has been made in recent years in the majority of areas in Andalusian society, even though in some cases they appear to be insufficient in view of their poor performance compared to their starting points. It is also clear that the production structure of Andalusia is very different to that of other regions and that its geographical and demographic characteristics make balanced development between urban and rural areas more difficult, especially in relation to the roll out of ICT infrastructures.

The implementation and use of new technologies among Andalusian citizens has grown strongly in recent years, although it continues to demonstrate significant differences in terms of certain demographic and socio-cultural variables such as gender, age, education level, income level, location, etc. which show that a significant proportion of the citizens are at the risk of exclusion and which must be definitively tackled.

Although nearly all companies have computers, independent of their size, sector or location, this percentage falls in terms of their internet connections. Nevertheless, companies in Andalusia have one of the highest levels of connectivity of all Spanish regions. There has been a rapid adoption of broadband connections over the last year, ranking Andalusian companies in the national average and above European companies. One can also see that company size is influential in the adoption of ICTs and smaller companies are less likely to use them.

Government is the motivating force behind the implementation of information and knowledge society. Andalusia is renowned nationally for its strategies for modernisation, for expanding the electronic administration and the extensive range of its digital public services. Nevertheless, there continues to be a lack of cooperation, integration and interoperability mechanisms between the responsible public services from different organisations and administrations, which are required to achieve a fully transparent public

administration and a comprehensive range of digital services aimed at citizens and companies.

The data and indicators on the status of information and knowledge society in Andalusia are shown below, systematically analysing the different spaces and actors that comprise it.⁵ The reality in relation to the use of ICTs is studied, both for citizens and companies as well as the public administration itself. The status of the industrial ICT sector in Andalusia is analysed in particular due to its strategic nature in our region. The roll out of telecommunications infrastructures is also described including its coverage in Andalusia and the penetration of its use among the Andalusian population. The indicators present the situation in Andalusia compared to the Spanish and EU-15 averages. Similarly, data from a minimum of the last three years (2004-2006) has been taken into account, as far as possible, in order to give an idea of its evolution.

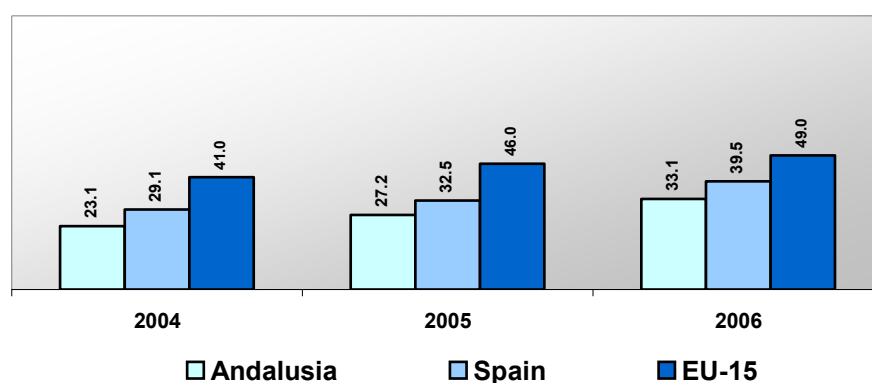
2.1 Information Society Among the Andalusian Population

The analysis of the evolution of the main indicators for penetration of ICTs in citizens' homes and daily lives in recent years shows continuous growth and significant convergence with the Spanish and European averages. Currently 52.4% of Andalusian homes have a computer, 4.5% more than two years ago and 4.9% below the Spanish average.⁶ Internet connections are present in 31.7% of Andalusian homes.

The internet is used "frequently" by 33.1% of the Andalusian population compared to 39.5% for Spain as a whole. But nowadays a simple network connection is no longer sufficient. The quality of the connection has to be considered in terms of broadband and the availability of always-on connections. On the European continent, 34% of homes already have a broadband internet connection. Of the total homes in Andalusia only 24.2% connect via high-speed lines, 5.1% below the average for citizens in Spain for this connection type.

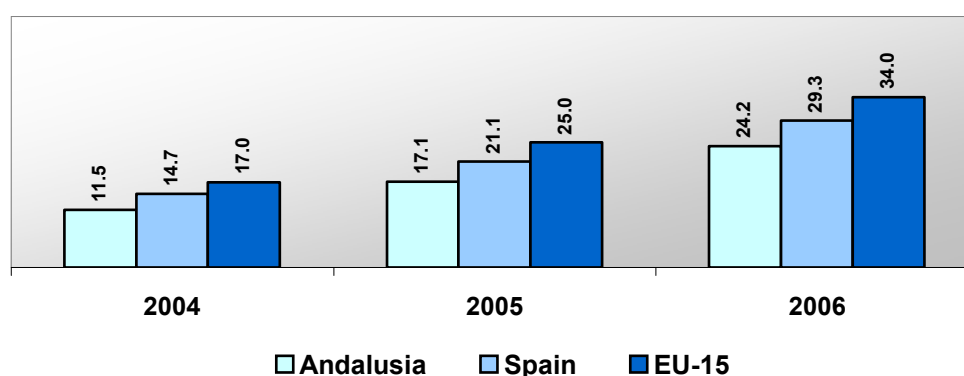
⁵ All the data relating to the current situation of the information and knowledge society in Andalusia is included in the tables and/or graphs of the Annex: Data and indicators of the current information society situation.

⁶ Spanish Statistics Institute. Survey on ICT equipment and use in households 2006.



Graph 1. Percentage of individuals that regularly use the internet

Source: Spanish Statistics Institute. Survey of information technologies in households, and Eurostat



Graph 2. Percentage of homes with broadband connection

Source: Spanish Statistics Institute. Survey of information technologies in households, and Eurostat

It is important to have centres with public internet access, which may be dedicated centres, or to use the resources available in other centres such as schools and institutes, day centres for the elderly or libraries, to partly compensate for this shortfall in domestic access, as well as lowering the barriers for citizens using ICTs, accelerating the adoption process.

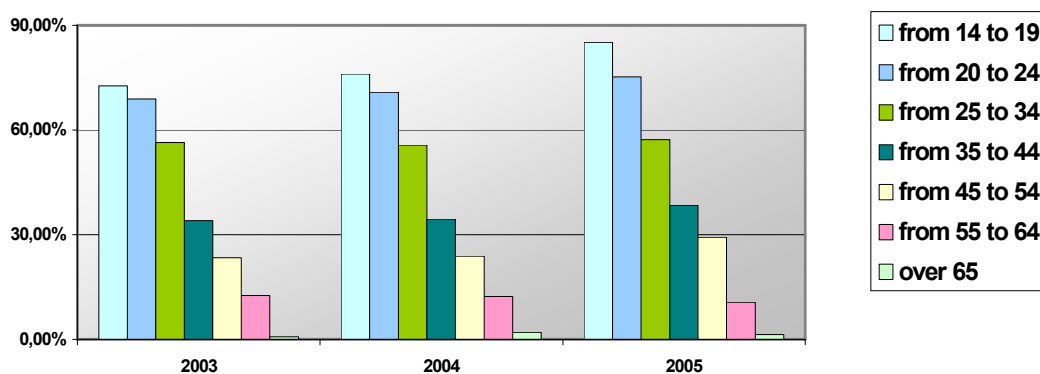
Andalusia has a network of nearly 700 centres with public internet access, of which the most important part is the Guadalinfo centres. They have been opened in the 637 towns and villages with less than 10,000 inhabitants in Andalusia and have broadband internet access. The implementation of these centres in the marginal areas of the provinces is scheduled for a subsequent phase. This project has directly influenced the progress of ICT use in rural areas, benefiting territorial cohesion and the diffusion of information and knowledge society. Furthermore, since 2005 citizens have also benefited from 556 municipal libraries in Andalusia connected to the network via broadband.

The educational system also plays an important role in introducing ICTs to pupils. Of the total educational centres in Andalusia, 99.4% are connected to the internet, higher than the percentage in Spain and more than 6% higher than the European average. We should highlight the efforts being made by the Andalusian administration to implement ICTs in education by opening ICT centres, whose classrooms have one computer for every two pupils. This will change the traditional “computer room” educational model towards the concept of “information technology in the classroom”. In the 2005-06 academic year, 543 ICT centres were available and this is expected to rise to 823 for 2006-07, covering 30.0% of all publicly funded schools and institutes in Andalusia.

However, internet access does not develop uniformly across all social groups, but demonstrates significant differences based on different variables such as gender, age, educational level, income level, etc.

In the case of internet users by gender, 45.7% of men use the internet, while only 38.4% of women use it. Expressed another way, for every 23 male users, 19 women use the internet.⁷

By age group, according to the i@landalus 2005 barometer, internet use among 14-19 year olds is widespread and 85.2% are users.⁸ They are closely followed by the 20-24 year old age group, with a penetration rate of 75.2%. This percentage falls to 38.5% for the 35-44 year old bracket. The lowest percentage of users belongs to those over 65 years of age. This shows a clear generational divide in Andalusia, although similar to the divide in other Spanish regions and in Europe.



Graph 3. Penetration of internet use by age group

Source: i@landalus Barometer

The rapid diffusion of ICTs has led to unequal take-up by citizens based on income levels, leading to differences between people with less financial resources (7.1% use) and

⁷ Spanish Statistics Institute. Survey on ICT equipment and use in households 2006.

⁸ Data from other sources for national and European values that is not directly comparable.

high income people (70.7% use) according to the 2004 i@andalus Barometer. This is undoubtedly the principal risk for digital exclusion in addition to the traditional risks of exclusion and we must therefore place special emphasis on it.

The use of ICTs also shows differences in relation to educational levels. People with university studies show the most integration in ICT use, considerably higher than those who only have a primary or secondary school education or who have no education at all.

After analysing the indicators on the penetration of ICTs in Andalusian society, it is worth examining the various reasons given by non-user citizens that may explain the difficulties for faster penetration. The 2005 i@andalus Barometer highlights the reason given by 64.7% of people who do not use the internet as the lack of interest in what they believe the internet can bring them. This situation highlights a problem of understanding and awareness about the use of ICTs by a significant proportion of the Andalusian population; 34.5% say that they do not know how to use the internet. This figure indicates that more emphasis needs to be placed on the process for training Andalusian citizens or placing more social significance on the profile of citizens educated in ICT use. Other data from the report shows that 15.5% have no computer at home or at work.

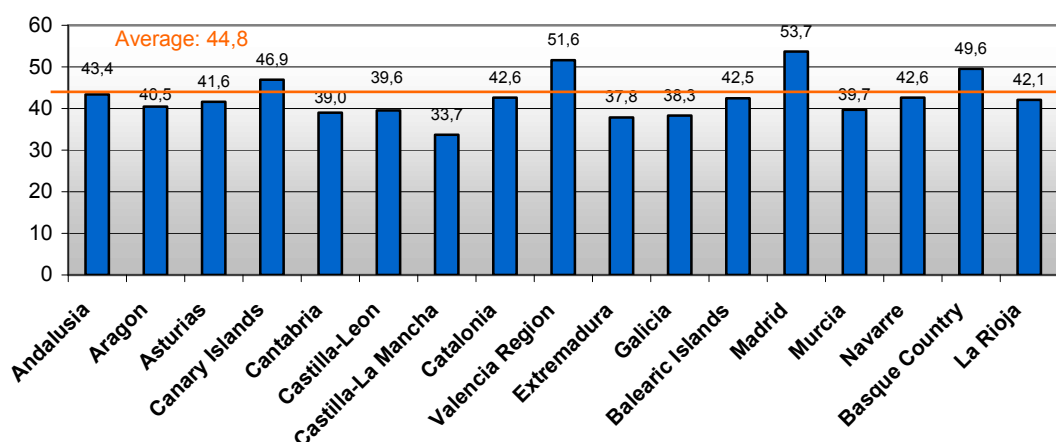
2.2 Information Society in Andalusian Companies

The production structure of Andalusia is strongly conditioned by its history and its geography and there are significant differences between companies in urban, tourism and rural areas. The majority have a common characteristic, size. Companies with less than ten employees and micro-companies (including those without employees) account for 94.4% of companies in Andalusia. Of these, nearly a quarter is in the retail sector, 10.4% in the hospitality sector and another 10.1% are in the construction sector.

Company size is influential in the adoption of ICTs and smaller companies traditionally face more barriers when incorporating them. Of the companies with more than ten employees, 96.6% have a computer, 34% higher than Andalusian companies with less than ten employees.⁹ Of the companies with more than ten employees, 86.8% have an internet connection, 43% higher than Andalusian companies with less than ten employees. The difference is similar in terms of broadband connections for internet access. Of the companies with more than ten employees, 82.9% have a broadband internet connection, 40% more than Andalusian companies with less than ten employees

If we compare these figures to other autonomous regions, one can see that Andalusian micro-companies are above the Spanish average in two of these three indicators. The average number of micro-companies in Andalusia with a computer is nearly 2% higher than in Spain as a whole; the figure for internet connections is 1.4% lower in Andalusia than in Spain; and the average number of micro-companies in Andalusia that use broadband is nearly 1% higher than the Spanish average. Specifically, in relation to internet connection and broadband, Andalusia is ranked only behind the regions of Madrid, Valencia, the Basque Country and the Canary Islands.

⁹ Spanish Statistics Institute. Survey on the use of ICTs and e-commerce by companies



Graph 4. Percentage of micro-companies with internet access

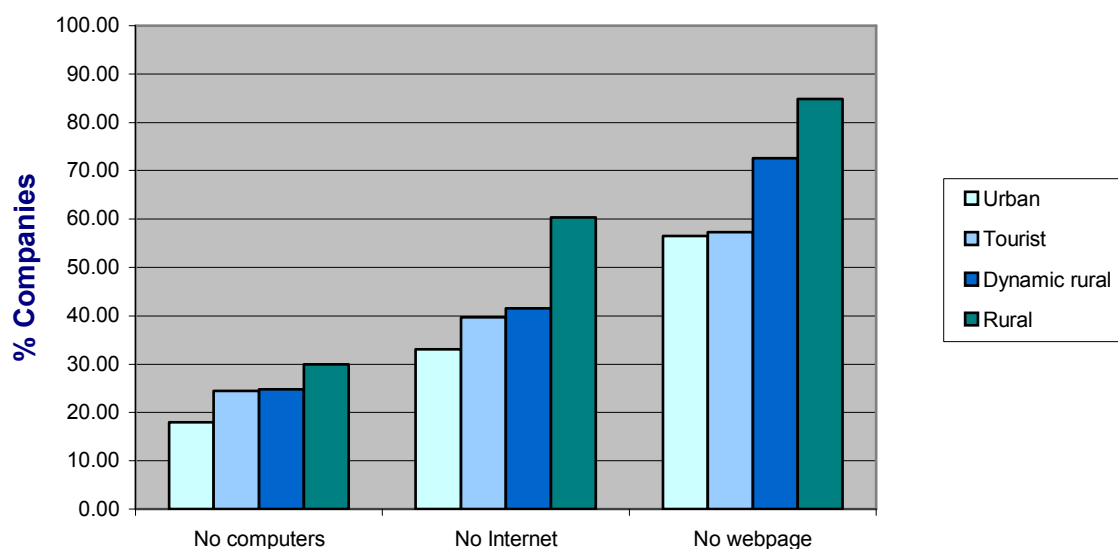
Source: Spanish Statistics Institute. Survey of the use of ICTs and e-commerce by companies 2005/2006

Excluding the inadequate levels of innovation by companies in Andalusia we can state that the equipment level of our companies is very similar to the Spanish and European average. Therefore 86.0% of Andalusian companies have I.T. equipment compared to 87% in Spain and 84% in Europe.¹⁰ In terms of internet connection, the percentage of companies in Andalusia is comparable to the Spanish average, 73% versus 78% respectively, although this compares to an average of 81% for companies in Europe.

The presence of Andalusian companies on the internet is similar to the Spanish average, in line with the statistics on equipment and internet access, but there is a significant difference compared to Europe. Andalusian companies with a website account for 33% of the total, compared to 35% in Spain and 57% in Europe.

Geographically one can see that companies in urban, tourism or intensive agricultural areas (dynamic rural environments) have the highest levels of equipment, while those in extensive rural areas show levels that are significantly below the rest.

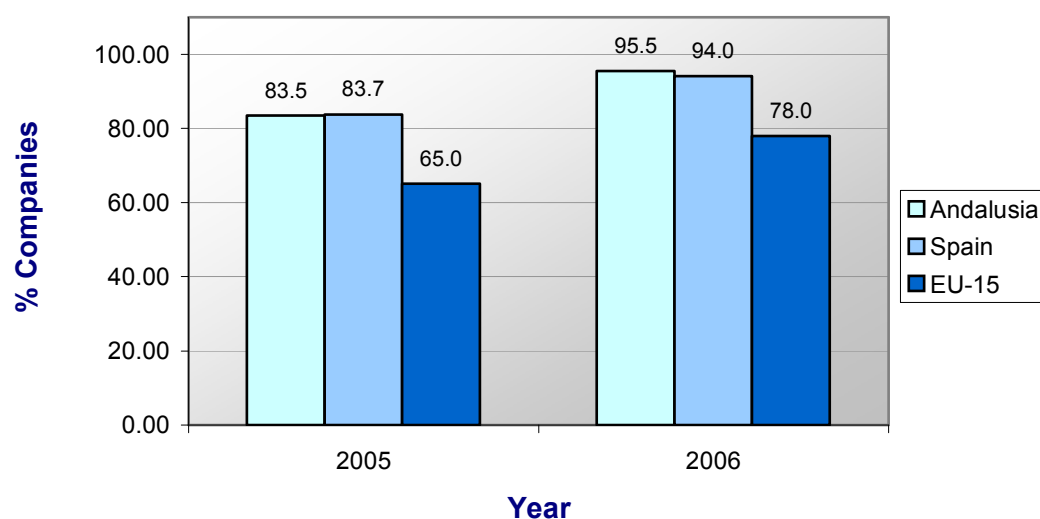
¹⁰ AETIC report on information society technologies in companies 2004



Graph 5. Companies without basic tools

Source: Andalusian Institute of Social Studies (IESA) Report on ICT equipment and use 2003-2004

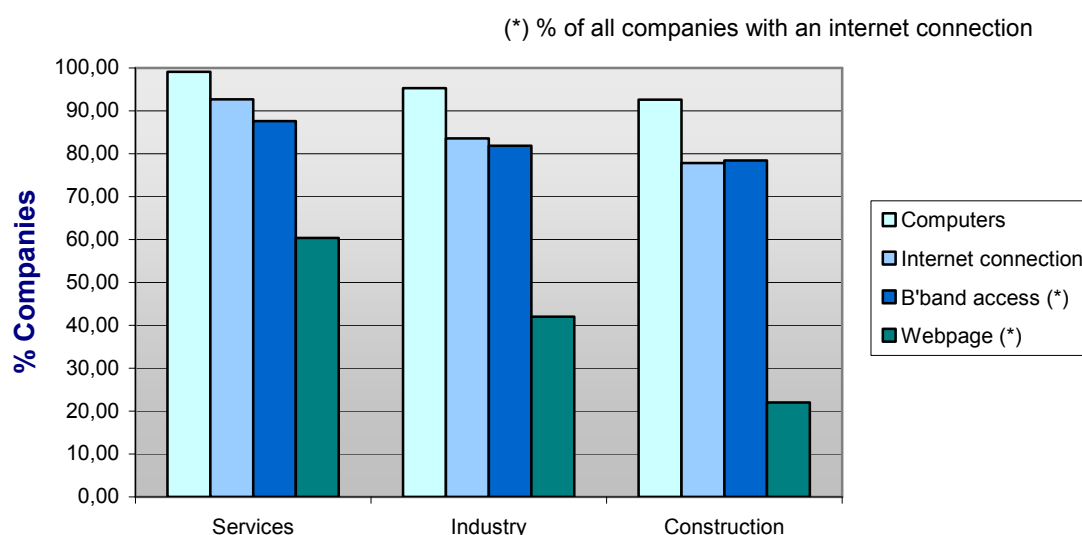
In the section on the use of broadband internet connections, Andalusia exceeds the Spanish average and is significantly above the European average. Of the total companies in Andalusia with more than ten employees with internet access, 95.5% use high-speed connections, which is higher than the 94% Spanish average and 17% higher than in Europe.



Graph 6. Companies with broadband access

Source: Spanish Statistics Institute. Survey on the use of ICTs and e-commerce by companies 2005/2006, and Eurostat

If the analysis on the use of ICTs is applied to the business sectors for companies with more than ten employees, the services sector emerges as the leader in terms of the principal penetration indicators, ahead of the industrial sector. Companies in the construction sector are ranked last. These inequalities in the take-up levels of ICTs by Andalusian companies show that efforts should be focussed on the least penetrated sectors.



Graph 7. Principal ICT variables by sector

Source: Andalusian Statistics Institute, with data from the survey of the use of ICTs and e-commerce by companies 2004/2005 from the Spanish Statistics Institute.

The figures for e-commerce continue to be low in Andalusia, similar to the rest of Spain, partly due to the strong sales network in Spain and distrust of electronic payment methods. According to data from the Andalusian Statistics Institute (Instituto de Estadística de Andalucía, IEA), 2.5% of companies sell via e-commerce, which is only 1.6% more than two years ago and 1% below the Spanish average.¹¹ The data on companies that use e-commerce in their buying processes reflects a slightly better situation, although it still remains in single digits and there was a worrying 2.5% decline compared to the previous year. Currently 7.4% of Andalusian companies make online purchases, more than 3% below the Spanish average.

In the study carried out by the Andalusian Institute of Social Studies (Instituto de Estudios Sociales de Andalucía, IESA), the principal argument that Andalusian companies give for not making greater use of new technologies is that “they don’t need them”.¹² This is further clarified by 12.7% of the companies surveyed stating that they do not need a computer; 25.1% state that they do not need the internet; and 29.7% state that they do

¹¹ From micro data for Andalucía from the Survey on the use of ICTs and e-commerce in companies 2004/2005 by the Spanish Statistics Institute.

¹² Report on ICT equipment and use 2003-2004

not need e-mail. The same study also shows that Andalusian companies use ICTs to improve communications processes and information handling, compared to other more advanced tools such as the automation of production processes or electronic commerce, which are scarcely used.

One vitally relevant factor for driving the digital technology adoption process in the corporate environment is that efficient advisory actions are made available to companies. The Andalusian Network of Technological Spaces (Red de Espacios Tecnológicos de Andalucía, RETA) was launched in this area as an operational tool to promote a culture of cooperation among Andalusian companies, to offer advice and assistance when implementing technology and innovation projects, placing special emphasis on companies in traditional industrial estates, as well as in science and technology parks.¹³ RETA currently comprises eight science and technology parks, 19 technology and innovation centres, three European business and innovation centres, the 18 centres of the Agricultural and Fishing Research and Training Institute (Instituto de Investigación y Formación Agraria y Pesquera, IFAPA), the Technological Corporation of Andalusia (which brings together the leading companies in strategic sectors) and the Andalusian Innovation and Development Agency. The CSEA network of the Confederation of Andalusian Businesses recently joined the latter, with which it shares the objective of creating and maintaining advanced services for developing and improving the competitiveness of Andalusian companies.

2.3 Companies in the Information and Communication Technologies Sector in Andalusia

The highly significant increases in sales and the number of companies in 2004 marked a turning point in the growth of companies in the ICT sector in Andalusia. With 8,800 companies in the ICT sector, Andalusia is ranked third among autonomous Spanish regions, accounting for 12% of the national total, behind the communities of Madrid and Barcelona only according to the Central Directory of Companies from the Spanish Statistics Institute and the OECD's classification.

Of the nearly 9,300 Andalusian companies in the ICT sector, nearly 71% are service companies that do not form part of the advanced technology sectors, such as "machinery and equipment retailing", "machinery and equipment rental" and "maintenance and repair of office machinery and I.T. equipment". Nearly 93% of these companies have less than ten employees. These types of companies therefore need support to grow larger and also to redesign and increase their service offering.

If we look at the analysis in the remaining service companies in the ICT sector which includes companies that "develop I.T. applications", "data processing" or "telecommunications" one can see an embryonic business structure comprised of some big leaders with more than 500 employees, a significant group of companies with more than 100 employees and a still considerable number of small companies with less than 10 employees. In order to change this situation and contribute to strengthening the sector, actions must be taken to help companies grow.

¹³ <http://www.reta.es/presentacion.html>

On the other hand, there are a small number of Andalusian ICT companies in the industrial sector that manufacture products, although occasional exceptions in sub-sectors such as computer assembly or mobile terminal manufacturing do exist. There are opportunities for companies in this sector to establish actions that help to consolidate niche positions in sub-sectors where adding value is more important than competing on cost.

According to data from ETICOM (Empresarios de las Tecnologías de la Información y Comunicación de Andalucía, Information Technology and Communications Businesses of Andalusia), the Andalusian sector association, mergers and other methods of collaboration have increased in recent years, contributing to positive growth, consolidation and strengthening the sector overall, and at the same time it is taking important steps to bring ICT sector companies closer to the university, government and companies from other sectors.

In 2004 foreign trade by the Andalusian ICT sector grew considerably with imports increasing by 29.2% and exports by 27.7% compared to 2003.¹⁴ Although the trade balance is still negative, Andalusia has been at the forefront of a significant rise in exports in recent years.

A clear example of the progress and consolidation of companies in the ICT sector in Andalusia is the current offer of highly qualified jobs. The sector absorbs nearly all of the 2,719 students that graduate in technology specialities from Andalusian universities every year. Demand is forecast to outstrip the supply of qualified professionals during the next few years, which will require work to provide continuous professional training and will offer the possibility for the sector to become a career alternative for other groups.

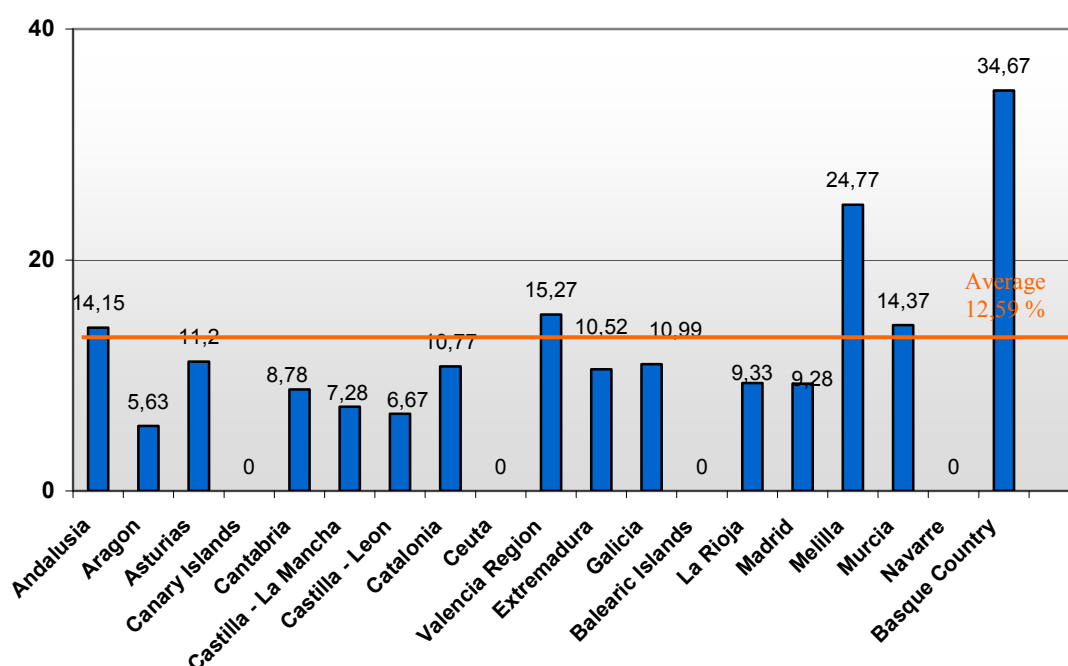
An adequate network of research groups in universities and science centres in the region is essential to promote the science-technology-business system in the Andalusian ICT sector. There are currently nearly one hundred research groups in the ICT field according to data from the current Andalusian Research, Development and Innovation Plan. Maintaining an appropriate quantity and quality of these scientific groups is one of the important commitments towards making Andalusia a global reference point in the ICT sector.

¹⁴ Economic Report on Andalusia 2004.

2.4 Government in Information Society

If citizens and companies combine forces to incorporate ICTs, it is essential that public administrations respond to the challenge of e-Government with fully prepared professionals. The rapid spread of ICTs not only changes relationships between citizens or companies' organisation models, but it also impacts the administration of government. The introduction of ICTs in the Andalusian administration will modernise public administration, it will bring citizens closer to government, it will give 24 hour-a-day access to public services, 365 days a year, and it will encourage citizen participation.

The Andalusian regional government spends 14.2 Euros per inhabitant on information technology, exceeding the Spanish average of 12.6 Euros/inhabitant.¹⁵ The region spends 1.2% of its total budget on I.T. expenditure, equal to the Spanish average of 1.2%.¹⁶



Graph 8. I.T. expenditure per inhabitant (€/inhab.)

Source: Telefónica report on information society in Spain, 2004

In terms of the number of terminals per public employee, the Andalusian administration has 15.3 computers per 100 professionals, while the Spanish average is 18. Nevertheless, Andalusia is the second ranked region in Spain in terms of the number of horizontal type projects which involve a higher degree of innovation.¹⁷

¹⁵ Report on information society in Spain 2004 by Telefónica S.A.

¹⁶ Economic Report on Andalusia 2004.

¹⁷ Annual report on the status of information society in Spain 2005, by the AUNA Foundation

At the start of February 2006 the European Commission recognised and congratulated the work carried out in Andalusia on various initiatives relating to health, such as digital health records, the *Salud Responde* citizen service and electronic prescriptions, demonstrating how the incorporation of ICTs can improve the management of government services. The public management of digital health records now means that today 66% of Andalusian citizens have a single digital health record. Similarly, the *Mundo de Estrellas* project has installed spaces equipped with computers in Andalusian hospitals, which include education and entertainment options for hospitalised children. The project has led to a clear improvement in the quality of life of citizens as a result of developing digital health strategies.

Educational management for information and knowledge society forms part of the And@red educational plan, which defines how the Averroes online educational network operates in Andalusia. This network has a portal that brings together digital educational content and resources, making it the leading online learning tool. It makes use of online platforms that support administrative management and relationships between members of the educational community.

Before the Andalusian regional government assumed responsibility for justice in 1997, only 15% of judicial entities had the necessary technology to use ICTs as a work tool. The Andalusian administration is incorporating ICTs into Andalusian courts via the Adriano plan in order to improve the organisation and service of the justice administration in the Community. This plan has led to the installation of 6,000 computers in more than 500 judicial entities and during 2006, 84% of I.T. equipment is scheduled to be renewed.

In the area of content and service development, the initiative to extend digital public services in Andalusia attempts to remove barriers between government and citizens and to promote citizens' participation with a constant increase of new offers. According to the aforementioned report, the Basque Country and Andalusia are the two regional administrations that allow more online procedures to be carried out than any other. This includes 150 processes that can be electronically carried out with varying level of interaction (information downloads, access to and completion of forms, procedures, payments, etc.).

Following the implementation of PLADOCS in recent years, significant milestones have been achieved in proximity, accessibility and interactivity with citizens. The launch of empowering elements that make it possible to implement e-Government have been important. These have included the digital signature and authentication platform, the online payment platform, the single entry/exit register, the electronic notary platform and the system of reliable online notifications.

RANKING	REGION	LEVEL OF DEVELOPMENT	EVOLUTION 2003-2004
1	Basque Country	e-Government	=
2	Andalusia	e-Government	+
3	Catalonia	e-Government	=
4	Valencia region	Single point of contact	+
5	Cantabria	Single point of contact	=
6	Madrid	Single point of contact	+
7	Canary Islands	Single point of contact	-
8	Castilla-Leon	Single point of contact	+
9	Galicia	Single point of contact	+
10	Castilla-La Mancha	Single point of contact	+
11	Extremadura	Portal	+
12	Balearic Islands	Portal	-
13	Navarre	Portal	-
14	Aragon	Portal	-
15	Asturias	Portal	+
16	Murcia	Portal	-
17	La Rioja	Website	-

Table 1. Leading online autonomous communities. 2005

Source: AUNA Report 2005

The increase in the use of digital signatures is also a significant indicator in relation to the interest and predisposition of citizens to adopting electronic channels for their dealings with the administration. To date, 344 organisations have signed the digital signature agreement, which includes the eight provincial government offices, the majority of the town councils and four universities. Andalusia is also the second ranked region in Spain in terms of the number of digital certificates.

E-Government services are accessed via a section of the citizens' portal www.andaluciajunta.es that was created for the Andalusian regional government in 2001. The portal, which also provides other information and enquiry services from the Andalusian regional government, received nearly 24 million visits in 2005. Every day 405,903 pages are accessed, of which 17.7% originate from international users. Technically the portal is developed using freeware technology and has a double-A (AA) general accessibility level, rising to the maximum triple-A (AAA) for some services. This facilitates access to the content for Andalusian citizens, including for people with physical or visual handicaps.

This portal also offers Andalusians a web based e-mail tool as a free service.

Also significant in the field of internet based content and services is the user access to the Andalusian health service portal. It received 5.6 million visits and has displayed more than 20 million pages. The Andalusian tourism information portal which has displayed 10 million pages and has received 1.6 million visits is in the same league.

The current status of ICTs in local administrations in Andalusia varies depending on the different areas analysed. The main inequalities are in the automation of internal processes and in the provision of online services.

The degree of automation in town councils' online services is generally low, with a significant gap between current levels and those desired. The principal inhibitors to a greater level of automation in internal processes are the excessive cost of the investment required and the resistance of personnel to use I.T. applications.

A total 40.6% of town councils do not have a web portal, although all the provincial government offices do.¹⁸ The online provision of services by town councils through web portals is almost non-existent, and for those services that are provided, the level of electronic administration is low.

2.5 Information Society Infrastructures in Andalusia

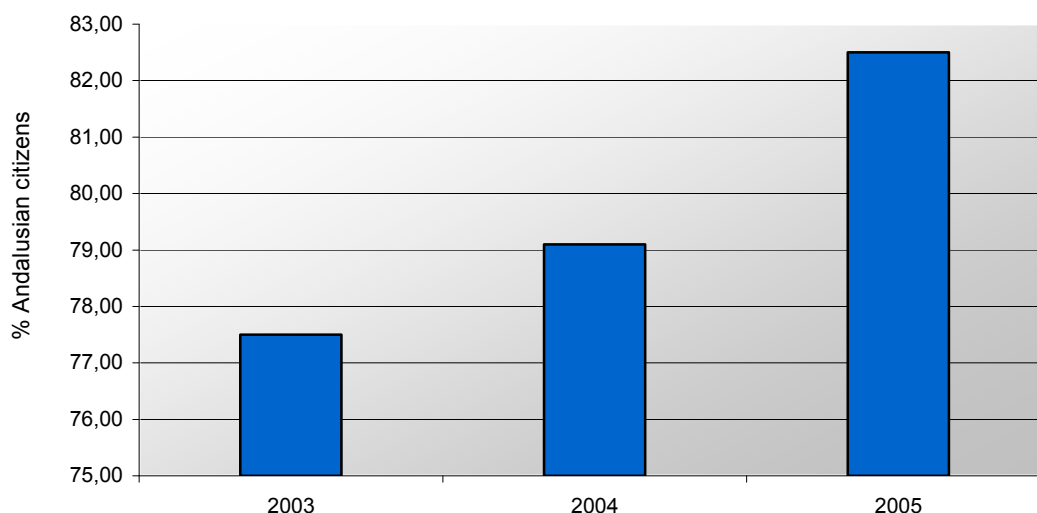
Telecommunications infrastructures comprise the set of elements and services required for information and knowledge society to develop and operate. The comprehensive use of ICTs by citizens and companies largely depends on the extensiveness of their geographical coverage and the penetration of their use among the Andalusian population.

There has been a boom in mobile telephony in recent years, both in the private and corporate segments. The increase in mobile telephony infrastructure means that services are now available to 82.3% of the Andalusian population, 5% more than two years ago.¹⁹ This rising trend in the take-up of mobile telephony has not significantly eroded the penetration of fixed line telephony. At the start of 2005 there were 29.3 telephone lines in service for every 100 inhabitants in Andalusia, only 1.5% less than two years previously.²⁰

¹⁸ Analysis and diagnosis report on the current status of ICTs in local administrations in Andalusia 2006. Regional Ministry of Innovation, Science and Enterprise (CICE).

¹⁹ i@landalus Barometer 2005

²⁰ Proprietary report drafted from data from the Multi-territory Information System of the Andalusian Statistics Institute (SIMA - IEA) and from the Spanish Statistics Institute (INE)



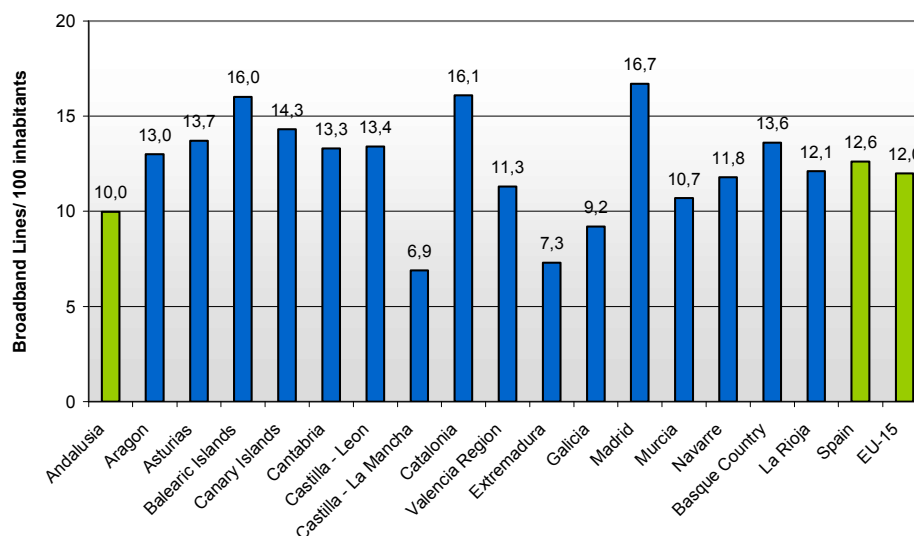
Graph 9. Mobile telephony users in Andalusia

Source: i@andalus Barometer

In relation to the accessibility of mobile telephony, the three national mobile telephone companies guarantee GSM coverage in 99% of Andalusian territory. Nevertheless, the introduction of 3G networks and services is taking place slower than expected, in line with the last report published by the Spanish Telecommunications Market Commission (CMT). Some of the problems with 3G mobile telephony is the high environmental impact of the required antennas (3G or UMTS technology requires a much higher number of antennas than GSM) and the reluctance of town councils and freeholder associations to install them.

At the start of 2003, 84.3% of the Andalusian population had access to broadband. Nonetheless, more than one million people in 510 towns did not have this option. This situation led to the launch of the Mercurio project that, since 2003, has brought the necessary high-speed internet infrastructures to the most rural populations.

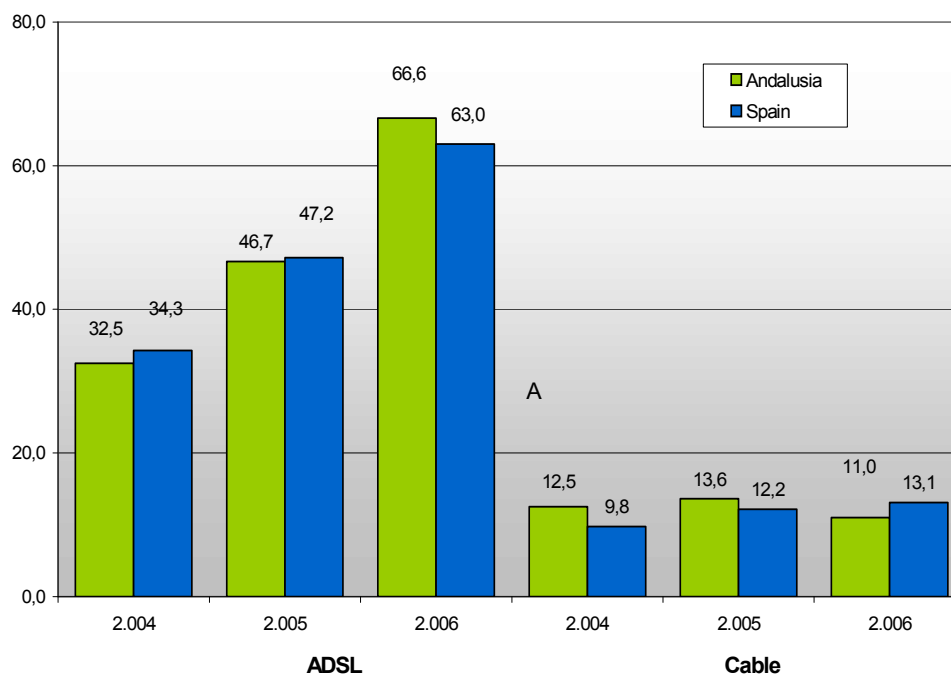
There has however been a slight delay in the penetration of the number of broadband lines per 100 inhabitants. This indicator currently stands at 10% in Andalusia, compared to the Spanish average of 12.6%, which in turn is 3% below the EU average.



Graph 10. Broadband lines contracted per 100 inhabitants

Source: Information derived from data from the Spanish Statistics Institute 2006 EU-15 data. Communications Committee. Broadband access in the EU. 2005

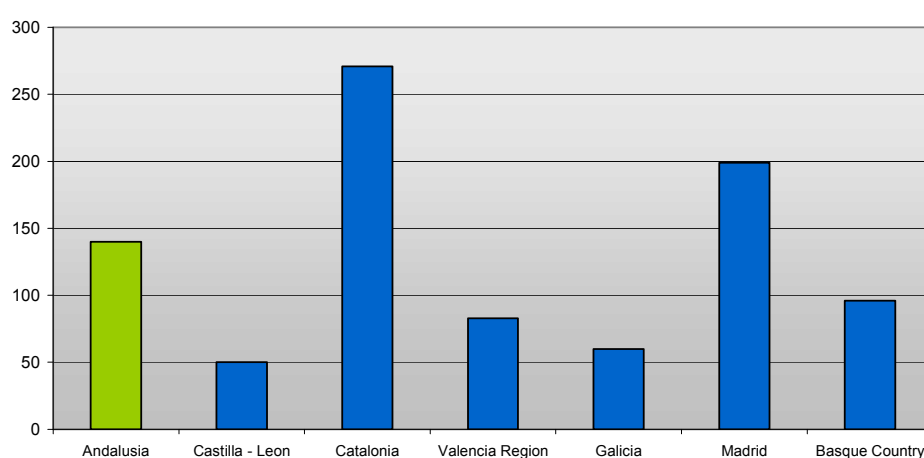
If we analyse the type of broadband access in Andalusian homes, ADSL and cable are the most common. ADSL is the most common type, growing at nearly 20% annually and exceeding the Spanish average. Cable also has a higher penetration in Andalusia than the national average.



Graph 11. Home internet access by connection type

Source: Spanish Statistics Institute. Survey of information technologies in households

A new range of services based on public access wireless networks has emerged recently, which encourage greater use of mobility applications and the availability of broadband access from anywhere. Andalusia is the third ranked Spanish region, behind Catalonia and Madrid, in terms of the number of public wireless access points. Specifically, Andalusia has 140 access points, primarily located in hotels, compared to 271 in Catalonia and 199 in Madrid. In the short term, millions of Europeans – primarily professionals and tourists who are away from their offices or homes – are expected to use public wireless internet access points.



Graph 12. Public wireless access points

Source: Information derived from Jwire data

The take-up of ICTs by citizens has a new incentive in the form of digital terrestrial television (DTT). Andalusia has already established a legal framework that will allow DTT to be rolled out in local areas. It is currently estimated that 290,000 homes in Andalusia have access to DTT interactive services and digital content, representing 11.8% of all households in Andalusia. There is however, a barrier that may slow down DTT penetration. The Andalusian Federation of Telecommunications Installers estimates that 40% of communal television infrastructures must be adapted to access the services offered by DTT.

The lack of trust in the security of ICTs and telecommunications networks continues to be one of the main obstacles in take-up by citizens and companies. The Andalusian public administration is aware of this situation and is committed to the use of digital certificates as a practical, efficient, unique and digital way of gaining secure access to information society content and services. According to the CERES electronic signature certification department of the Spanish Royal Mint, the number of digital certificates issued in Andalusia at the end of 2005 was 148,756, ranking it second in Spain behind the

Community of Madrid. In the corporate world, 16.6% of companies with more than ten employees have a digital certificate, 2.6% below the national average.²¹

²¹ Survey on the use of ICTs and e-commerce in companies 2005/2006, by the Spanish Statistics Institute.

3 STRATEGIC OBJECTIVES

The Information Society Plan for Andalusia (ASI plan) should be the instrument that ensures that Andalusia fully immerses itself in the information and knowledge society, as stated by the regional government in the Andalusian Autonomy Statute, in order to promote a better life and economy for Andalusian citizens, and with the corresponding responsibilities related to new technologies tasked to the Regional Ministry of Innovation, Science and Enterprise (CICE).

Based on the situation outlined until this point, the 2007-2010 ASI plan is structured around a series of important strategic objectives that are defined based on the analysis of the situation and the subsequent requirements identified.

These objectives are:

1. The ASI plan aims to obtain and use the necessary resources that allow all citizens to be informed, entrepreneurial, innovative, participatory and knowledgeable of the benefits and the possibilities provided by information technologies in their daily lives, both in their personal surroundings as well as in their professional environment, independently of social, cultural, economic or territorial conditions.
2. The ASI plan will provide the necessary resources to contribute to transforming Andalusian companies into organisations driven by excellence, capable of continuously renewing themselves and restructuring their business processes based on the knowledge available, using ICTs and investment in R&D+i as the basic mechanisms for achieving growth in productivity and competitiveness.
3. The ASI plan will strengthen the Andalusian ICT sector through actions to improve its status in relation to science, R&D+i, technology and investment indicators, allowing a genuinely competitive industrial ICT sector to develop nationally and internationally.
4. The ASI plan will be the instrument that will allow public administrations in Andalusia to be transformed into intelligent administrations that are capable of forecasting and anticipating the demand of society and addressing its needs in a proactive and personalised way in the format, quality and quantity required, on time and in an intuitive and natural way.
5. The plan will be an instrument for maximising the promotional capacity of public administrations by developing technological standards and guidelines appropriate for the rest of Andalusian society.
6. The plan will facilitate the comprehensive roll out of broadband infrastructures across the whole region, guaranteeing universal access under quality conditions, and with the necessary security mechanisms that will generate confidence in

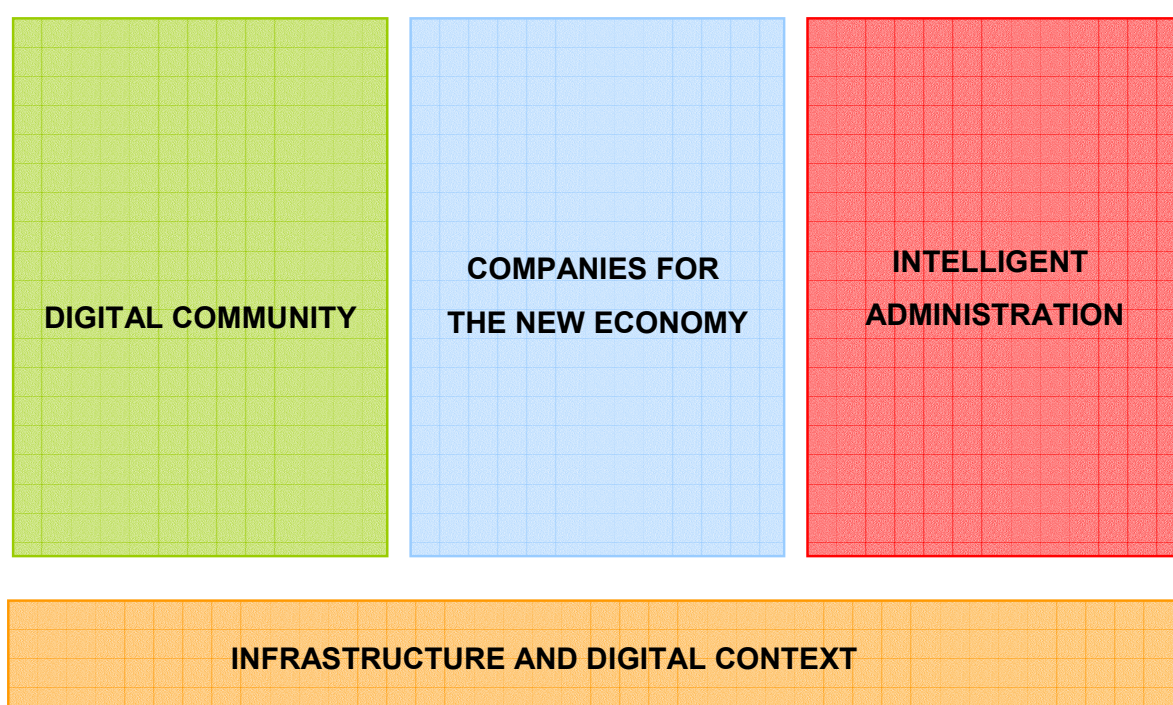
citizens and companies in their use of new technologies, so that they can be used as a basis for offering attractive content and services.

7. The plan will allow the strengths and opportunities that currently exist in Andalusia to be identified and used, to definitively drive the incorporation of information and knowledge society in our region, achieving a leadership position in the top five regions in Spain and above the European average.
8. The plan will develop strategic and horizontal measures with a global, coherent and integrated approach, which involves an extensive range of public, social and corporate agents, and which influence a clearly defined and numerous group.
9. The plan must guarantee the rights of citizens and companies in the new information and knowledge society, as well as the adoption of the recommendations and regulatory measures required to eliminate existing barriers to the expansion and use of ICTs in all environments.

4 PLAN STRUCTURE

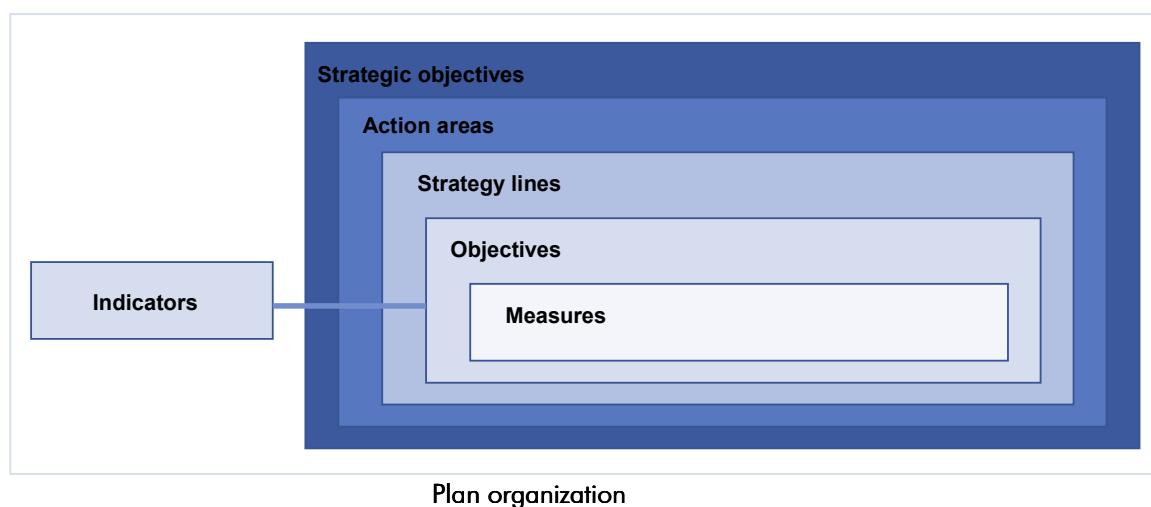
The global objectives set will be achieved through the actions defined in this plan. These actions are structured around the main areas of action, in order to establish their logical order and to subsequently allow them to be carried out. Three of these areas correspond to the three main actors that comprise Andalusian society known as the **Digital Community** (citizens), **Companies for the New Economy** and the **Intelligent Administration**. A fourth area of **Digital Infrastructure and Context** comprises the horizontal actions that indistinctly affect the others, such as those related to telecommunications infrastructures, digital content and confidence in their use.

The following graph shows the different action areas of the plan:



Action areas

The actions and policies of the plan, derived from the global strategic objectives and organised into the actions areas defined, also give rise to various strategic action lines within each area. The specific objectives to be achieved are established for each line, and the necessary measures are formulated from these specific objectives.



Areas and Lines

The document details the four action areas, their strategy lines and the specific objectives to achieve in each of them, according to the following structure:

- **Digital Community**
 - Digital citizenship line.
 - Digital inclusion line.
 - Digital participation line.
- **Companies for the New Economy**
 - Digital company line.
 - ICT sector line.
- **Intelligent Administration**
 - Line of the intelligent administration management model of the Andalusian regional government.
 - Digital public services line.
 - Education line for digital society.
 - Health line in digital society.
 - Justice line in digital society.
- **Digital Context and Infrastructure**
 - Line of broadband telecommunications infrastructures.
 - Digital trust line.
 - Digital content line.

Objectives and indicators

Monitoring indicators are defined in order to study and evaluate the degree of success of the specific objectives. The list of indicators includes those already defined for Spain and Europe, in line with the principles of this plan, although some indicators that are highly specific to Andalusia are also defined in some cases.

Some of the plan's specific objectives have no monitoring indicators due to the complexity or specificity required to define them. Furthermore, the official regional, national or international statistical sources do not always have up to date values for Andalusia for each of the proposed indicators, and in some cases the available information does not allow a reliable and objective forecast to be made for the 2010 horizon.

The plan's monitoring and control organisations will carry out a project that, "analyses and defines a system of indicators and measurements of information society in Andalusia".

Measures

The main types of measures are the following:

- Diffusion, promotion and communication. In general, the intention is to spread the benefits of information and knowledge society and the possibilities offered by public policies to all citizens and companies in this field.
- Regulations. Designed to promote and consolidate regulatory changes that encourage the development of information and knowledge society in Andalusia.
- Promotion. Measures that indirectly provide public resources to achieve the objectives via different instruments such as subsidies, loans, venture capital, etc. through third party actions.
- Direct action. Measures that provide the necessary financial resources to public administrations to provide services for which they are responsible or to develop actions in which they are directly involved.

Each of the measures included in the plan, independently of the action area that they are part of, include the projects that comprise a specific policy. This means that each measure should be considered not as a single action, but as a large group of inter-related projects that are designed to achieve the same specific objective. These projects have been identified during the planning process and have been included in the corresponding measures. The principal goal of the tasks to monitor the plan's progress will be to evaluate its evolution as well as the incorporation of new projects over the life of the plan.

5 DIGITAL COMMUNITY

The progressive implementation of ICTs in the most developed countries around the world promotes the welfare of their citizens and creates favourable expectations for the future. Andalusia has an infrastructure that promotes the use of information and knowledge society by its citizens. Andalusians need to be aware of the benefit of using ICTs and the internet and start to become expert web navigators and digital citizens.

The “digital divide” affects groups that are traditionally at risk of exclusion, such as the elderly, people in dependent situations, housewives, the handicapped and communities located in underprivileged environments (rural populations, immigrants, areas in need of social regeneration, etc.). ICTs are tools that create real solutions to real problems and that should facilitate the integration of all citizens.

As a tool for social communication, the internet also encourages participation and association because it facilitates social relationships and promotes collaboration. It opens a door for everyone to participate in every aspect of public life, promoting a healthier democracy.

This action area influences the promotion of ICTs in the daily life of everyone. It is divided into three main strategic areas: **Digital Citizenship**, which implements the necessary mechanisms for promoting the use of ICTs by the general population; **Digital Inclusion**, which focuses on promoting the take-up of information and knowledge society by those groups most exposed to the risk of digital exclusion; and **Digital Participation**, which seeks to encourage citizens’ participation in every aspect of political and civil life.

2010 Horizon

Internet, something normal in daily life

Andalusian citizens are used to using the internet on a regular and daily basis. The youngest do it so naturally as if these technologies have always existed and they couldn't do without them.

The majority have their own e-mail account and use much more than their traditional inbox. To be able to shop in the same big city establishments without having to travel is a new experience for online buyers in our rural areas. And to avoid queues when you have to visit the health centre or the cinema at the weekend, because you already have an appointment or tickets booked over the internet, made when it was most convenient for you, is a great benefit.

This is the first year in which as many men are surfing the internet as women. And the fifth edition of the award for the best information society initiative was presented to a group of volunteer senior citizens who have created their own website based on their experiences in the villages of Andalusia.

The Andalusian parliament is evaluating the impact of the first Information Society Act decreed in Andalusia, and is proposing the recognition of new rights. The public internet access centres located throughout Andalusia, which have become genuine spaces for participation in digital society, are the source of numerous suggestions and constructive proposals.

5.1 Strategy Line for Digital Citizenship

There is a long way to go until the current perception held by Andalusian citizens correctly reflects the usefulness and benefits that ICT use can bring to their daily lives. The uninterested and indifferent attitude held by many citizens regarding the progress of new technologies is slowing down the comprehensive development of information and knowledge society in Andalusia. A change of perception needs to be promoted in the population based on knowledge and accessibility to ICTs that counteract the disinformation, the lack of interest and the remoteness that prevails in some parts of the population. Only then will Andalusian citizens become aware of the impact that ICTs have on the progress and the growth of the community, becoming actively involved in the evolution towards a new social and economic model.

Awareness in the population regarding the use of new technologies will be more effective if citizens have the opportunity to experience them first hand, in their closest

environment. Furthermore, citizens need to be encouraged to become fluent in their use, assuming technological knowledge and incorporating it in their relationships with the community.

Andalusians should not only be aware of the advantages of using new technologies, but must feel supported during the change process. Education in relation to security when using ICTs will therefore be essential, as well as recognition and the defence of citizens' rights as users, in order to promote confidence among the population regarding ICTs.

Finally ICTs must be available to everyone. New technologies must adapt themselves to the needs, abilities and expectations of citizens, both in terms of functionality and in design and price. Andalusian citizens will have access, training and advice through the network of public internet access centres (CAPIs) so that their place of residence, their economic status or training will not be a barrier.

Objective. To increase the percentage of the population that uses ICTs in Andalusia

The concept of digital citizenship is primarily based on citizens' understanding about new technologies, and the personal or professional benefit derived from the services offered via them. The aim is to significantly increase the percentage of Andalusian citizens that understand and use ICTs so that they consider them a necessary and useful part of their daily lives.

Proliferation actions to cause a change in the current perception of ICTs will be implemented. These will be actions aimed at making ICT access universal from homes or through new devices that are affordable for all income levels. Citizens' rights in information and knowledge society will also be defined.

Measure 1 Disseminate the use and effectiveness of ICTs

To promote the positive perception of ICTs in order to encourage frequent use of new technologies by that part of society that lacks interest or knowledge about the benefits of ICTs and who still do not use them in their daily lives.

An intensive program of promotional campaigns will be produced that will be carried out in the audiovisual and written media, as well as via the organisation and participation of events. The aspects to cover in these campaigns will be: to explain the specific benefits of using ICTs (both professionally and personally); to inform citizens of the incentives, services and resources available from the public administration in order to encourage citizens to join information society (CAPI network, training plans and online training, e-mail offered by the Andalusian regional government, etc.); and to reinforce citizens' confidence in the use of ICTs.

The measure will be supplemented with a telephone service for basic enquiries related to the campaigns, through the citizens' service centre.

Measure 2 Incentives to facilitate broadband connection to the internet in households

Incentive program to make it easier for Andalusian families to contract broadband services for connecting to the internet at home. They are designed to encourage access and regular internet use within the family environment so that all family members can make the most of the benefits of new technologies and share knowledge and experiences.

In order to guarantee that the measure has a genuine impact on the family environment, the necessary training mechanisms to prepare family members to use the internet according to their needs will be provided to beneficiaries of the incentives.

Measure 3 Universal access to ICTs via easy to use devices that are affordable for all income levels

Drive to create and sell affordable and easy to use ICT devices. This measure is designed to ensure that those citizens who have still not incorporated new technologies into their environment due to excessive cost, or which do not adapt to their needs, have access to a range of affordable devices with a user-friendly and flexible user interface.

The public administration will support the training of work groups comprising the University, freeware developers and integrators (software/hardware manufacturers-assemblers), contributing to the initiative through incentives that may partially or totally cover non-recurrent costs.

Measure 4 List of rights of digital citizens in their relations with public administrations and in their access to digital services

To specify, through the creation or modification of regulations, the position of the Andalusian regional government in relation to the rights of Andalusian citizens regarding issues of access and use of ICTs, and in particular, their rights in their dealings with public administrations via online means. The action will be based around two points:

- Citizens' rights as members of information and knowledge society: right to universal, omnipresent, fair and affordable internet access; right to training in the use of the internet and its tools; guaranteed rights on the security and privacy of any personal data given over the internet; and rights to citizen participation via ICTs.
- The bases for promoting and strengthening the range of online public services of the Andalusian regional government making them citizen centric and defining the mechanisms that guarantee the citizen's rights as well as levels of quality and efficiency of user services.

Objective. To promote technological knowledge as a natural part of citizens' skills

There is a part of Andalusian society that acknowledges not using ICTs due to a lack of understanding or the presumed difficulty in using them. This objective aims to incorporate an understanding about new technologies as an essential value in the basic training of all citizens, so that they feel ready to use ICTs and keep up to date at the same speed as the technological advances taking place.

The measures that will be implemented will include encouraging the use of the European Computer Driving License (ECDL), the certification recommended by the European Union regarding basic ICT knowledge by citizens and an ICT training program.

Measure 5 Certification of basic ICT knowledge for citizens

To publicly promote acceptance of a certification that accredits a level of knowledge and ability to use ICTs among Andalusian citizens. The measure would use the European Computer Driving License (ECDL), which is an EU recommended certificate. The measure also seeks to encourage the acquisition of basic I.T. knowledge at user level among the general population, and to add value to this knowledge as a means to employment promotion or placement, for example.

The Andalusian administration itself will have to promote the training and certification centres required to take the exams as well as to facilitate the conditions under which the CAPIs will be able to carry out this type of training.

The necessary legal changes will be analysed in order to apply the ICT licence to public employment specifications and the possibility of using them at the core of Andalusian public administration.

Measure 6 Basic ICT training for Andalusian citizens

Basic training program in new technologies aimed at all sectors of the population, focussed on promoting digital culture among citizens (daily and secure use of ICTs in all aspects of daily life) and the philosophy of continuous learning (renewing and updating knowledge) throughout a citizen's life. The process will place special emphasis on the use of methodologies adapted to the needs of the labour market.

Training can be carried out by classroom attendance (CAPI courses or other centres, in travelling classrooms) or through distance learning (ICT training platform for citizens).

Objective. To guarantee the availability of a close point of access, training and advice on ICTs

The progress of new technologies means that they are increasingly necessary in every aspect of citizens' lives. This objective aims to guarantee that every citizen can access the benefits of using ICTs under the same conditions, having access, training and advice on ICTs wherever necessary.

The scope of the different resources and infrastructures of the Andalusian administrations will be strengthened, including the network of CAPIs. The digital volunteer role will be promoted in order to guarantee that all citizens have the necessary mechanisms to join the information and knowledge society in their immediate surroundings.

Measure 7 Evaluation of the resources and infrastructures available to promote information society

To optimise the use of the public ICT resources and infrastructures available in the whole of Andalusia in order to increase the spread of training and dissemination measures aimed at citizens to include them in information society.

On the one hand the measure will involve the extension of the current network of CAPIs (Guadalinfo in rural areas and in neighbourhoods with high social exclusion indices); the incorporation of associated centres authorised by the Andalusian regional government and promoted by other public administrations; and the identification of other public infrastructures of the Andalusian regional government.

On the other hand, a catalogue of available online digital content will be created for its shared use in ICT promotional and training activities. The infrastructures that allow efficient online operations will be strengthened and collaborative activities between CAPIs will be promoted, publicising the most innovative projects and initiatives that are the most relevant.

Measure 8 Creation of the digital volunteer network: Andalusia's Digital Commitment

All those individuals and institutions that are interested in contributing to progressing information and knowledge society in Andalusia will be centralised and coordinated by establishing a network of digital volunteers in Andalusia, so that they can fulfil the training and advisory needs that arise in an organised way.

The organisation of this network will involve the implementation of campaigns to raise awareness and to recruit volunteers, not only among the general population but also among companies, universities and non-governmental organisations that could collaborate in setting up the network.

The network will have the logistics infrastructure that it needs in order to coordinate volunteers and their actions.

Volunteers will contribute to developing and maintaining the repository of digital content which will be used in the training activities.

5.2 Strategy Line for Digital Inclusion

One of the main objectives of this plan is that the general public incorporate ICTs into their daily lives, so that they benefit equally from their use and feel that they are participating in information and knowledge society, contributing to the growth and progress of Andalusia. The challenge is significant if one takes into account that there are differences in the take-up of ICTs that are based on cultural, economic and geographical factors in addition to the lack of interest and knowledge about ICTs shown by many citizens.

These differences have special impact on groups that are traditionally at risk of exclusion, such as the elderly, people in dependent situations, housewives, the disabled and communities located in underprivileged environments (rural populations, immigrants, areas in need of social regeneration, etc.).

The introduction of these groups to daily ICT use requires immediate and special attention. New technologies advance rapidly and continuously and generate a wide range of opportunities for their users that, if not extended and made available to all citizens, will accentuate the social divide, leaving broad sections of society clearly disadvantaged.

The World Summit on the Information Society in Tunis (2005) established that: *"...we shall pay particular attention to the special needs of marginalized and vulnerable groups of society including migrants, internally displaced persons and refugees, unemployed and underprivileged people, minorities and nomadic people, older persons and persons with disabilities"*.²²

Information and knowledge society must be a reality for all in Andalusia as soon as possible. Specific actions and policies need to be developed aimed at those groups that currently show the lowest percentages of ICT use. Training and regular use of ICTs must be emphasised as well as those aspects of new technologies that positively influence the conditions that separate them from the rest of society.

²² Point 20 of the Tunis Commitment.

Age is one of the most common factors in the digital divide. The rate of aging of the Andalusian population makes the launch of actions aimed at the elderly a priority, to encourage the use of ICTs as an integral part of “active retirement”.

Objective. To redress the gender inequality of ICT users

Gender inequality is a generalised phenomenon in various aspects of today’s society and is also reflected in access to new technologies.

The World Summit on the Information Society in Tunis stated that “...*the full participation of women in the Information Society is necessary to ensure the inclusiveness and respect for human rights within the Information Society.*²³ *We encourage all stakeholders to support women’s participation in decision-making processes and to contribute to shaping all spheres of the Information Society at international, regional and national levels*”.

This objective is intended to facilitate and promote women’s take-up of ICTs in order to reduce and eventually eliminate the difference that currently exists in the use of ICTs between men and women. Furthermore, special emphasis will be placed on understanding and using ICTs as a vector for incorporating and preparing women for the employment market and the family and social environment.

Training measures aimed at identifying and promoting specific uses that are beneficial and appealing to women will be implemented. The creation of content, portals and services created by women for women will also be promoted.

Measure 9 Specific ICT training program for women

Specific training program for women, prioritising women from groups with a high risk of social and digital exclusion (without an education, the unemployed, immigrants...).

The program’s actions will not be limited to training in the use of new technologies, but will also attempt to show and provide a practical application for this knowledge in the daily environment and lives of these women in order to contribute to their social and labour integration and to improve their quality of life.

Training will principally be given through programs of the Andalusian Institute for Women, and through its usual collaboration channels.

²³ Point 23 of the Tunis Commitment.

Measure 10**Promotion of innovation initiatives for content, platforms and services specifically designed for women**

The creation of public and private content, platforms and services that are focussed on women will be promoted, and which encourage the use of ICTs as a tool for integration and which are created or managed by women.

Advice will be given to women on the use of content creation tools (websites, blogs, e-mail lists...). Competitions and prizes will be organised and the most successful initiatives will be published.

Objective. To speed up the adoption of ICTs by the elderly

Citizens over 65 years of age are an increasingly important demographic sector of the population due to its constant growth. This is the age group with the lowest level of ICT take-up.

According to *Nicholas Negroponte*, "...There is something very interesting going on that has not yet appeared in Europe, but in the United States (and maybe they don't believe it) it is already happening.²⁴ People over 60 are becoming fans of online communications... 30% of Americans over the age of 70 have a personal computer".

This objective seeks to promote ICTs among the elderly, overcoming the reticence that they feel and showing them the many possibilities for using these technologies in their environment.

Training measures aimed at identifying and promoting specific uses that are beneficial and appealing to the elderly will be implemented. The creation of content in which they share their experiences with the rest of society will also be encouraged.

Measure 11**Specific training program for the elderly in ICT use and services adapted to their needs**

Specific training program aimed at the elderly, focussed on showing the utility and the benefits derived from using ICTs in daily life, especially those aspects that encourage active retirement.

The possibilities offered by communications tools (with families and friends, contact with other senior citizens), the use of ICTs for entertainment purposes as well as the online services available for this group (especially in the area of healthcare) will be emphasised.

Training will be principally given in day centres for the elderly and in CAPIs.

²⁴ **Nicholas Negroponte** (1943) is the co-founder and director of the Media Laboratory at the Massachusetts Institute of Technology (MIT). He graduated from the MIT; he was a pioneer in the field of computer assisted design and has been a member of the MIT since 1966.

Measure 12 Promote the creation of content by the elderly

To increase the use of ICTs among the elderly through activity programs that encourage online collaboration and the creation of their own spaces and content. The measure attempts to make ICT use appealing in an environment that is traditionally associated with younger generations and to make the elderly participate in the changes and progress of today's society.

The activities should encourage communication and collaboration, not only with members of their own generation but with the rest of society, emphasising the values and knowledge that the elderly can provide, such as their personal experiences, their view of historical events they have witnessed, Andalusian culture and traditions, etc.

Support will be provided to the elderly on the use of tools to create content (websites, blogs, e-mail lists...) and competitions and prizes will be organised.

Objective. To promote the use of ICTs in the environment of people in situations of dependency

The information and knowledge society offers multiple possibilities to people in situations or at risk of dependency. This objective also aims to make ICT training available that is adapted to the needs of people in situations of dependency, as well as to promote the development and use of specific ICT services and devices for this group that reinforce their independence, improving their quality of life and contributing to the assistance provided by their carers.

Measure 13 Specific ICT training program adapted to the needs of people in situations of dependency

Specific ICT training program focused on providing the benefits of using ICTs to people in situations of dependency, which will take into account their specific needs and characteristics.

In addition to ICT based training, the program's actions will include training on using devices, platforms and services that have been especially designed to improve their level of independence and their quality of life.

Training will principally be carried out through the digital volunteers network in Andalusia and the Institute of Citizen Welfare.

Measure 14 Incentives for developing ICT projects that contribute to improving services to people in situations of dependency, as well as their quality of life and that of the people that provide them with assistance

To incentivize the development of ICT devices, platforms or services designed to directly or indirectly improve the quality of life of people in situations of dependency and the people that provide them with assistance.

It aims to improve the independence of people in situations of dependency, to improve the assistance that they receive, and to support and facilitate the work of the people that care for them, be they professionals, volunteers or family members.

Interconnection and cooperative work between centres and support services for people in situations of dependency will be encouraged, among others, as well as the use of applications that can provide digital television in the homes of people with severe or total dependency.

Objective. To strengthen the use of adapted ICTs and services by people with disabilities

The use of ICTs by people with disabilities is a problem in addition to the lack of understanding or a positive perception of these technologies. The training, devices, software and services aimed at the general public do not always take into account the needs of people with disabilities (physical or mental), which is a significant barrier, and in some cases impedes the use of ICTs.

This objective attempts to make suitable ICT training available to people with disabilities and to promote the development and use of ICT services and devices that will give them access to information and knowledge society under equal conditions.

Measure 15 Specific ICT training program adapted to the needs of people with disabilities

Specific ICT training program focused on providing the benefits of using ICTs to people with disabilities, which will take into account their specific needs and characteristics.

In addition to ICT based training, the program's actions will include training on using devices, platforms and services that have been especially designed to improve their quality of life and facilitate their social integration.

Training will principally be carried out through the digital volunteers network in Andalusia.

Measure 16 Incentives to develop ICT projects that encourage incorporation into information society and the social integration of people with disabilities

To incentivize the development of devices, platforms or services designed to directly or indirectly improve the quality of life of people with disabilities.

It seeks to encourage the independence of people with disabilities and remove the normal barriers in their environment. It will incentivize the acquisition of technical aids to promote accessibility in the ICT environment of people with disabilities.

The implementation of the W3C accessibility certificate will be promoted for web pages, portals and web services and projects to adapt equipment and content for people with physical and mental disabilities will be also encouraged, among others.

Objective. To make knowledge and the use of new technologies available to the population in underprivileged situations, environments and areas.

There is a large part of society that, due to factors such as the level of education or income, employment situation or the geographic isolation of their homes, is in an underprivileged position compared to the rest of the population and is therefore at risk of "info-exclusion".

The goal of this objective is to make new technologies available to these groups so that they can take advantage of the technological advances in their own environments, as well as guaranteeing equal opportunities for all citizens.

Measure 17**Introduction of the use of new technologies as a vehicle for social and territorial integration and equality**

To make new technologies available to those people that do not have access to ICTs due to social, cultural or economic factors, or due to other determining factors that places them in an underprivileged position compared to the rest of the population.

It will comprise different actions, each one focused on a specific group, for the purpose of adapting the activities carried out to the individual characteristics of each group, including the opening of CAPIs in neighbourhoods with a high level of social exclusion, ICT training in youth centres, internet connection for hospitalised adults and the promotion of recreational multimedia projects for hospitalised children.

Emphasis will be placed on the usefulness and benefits of using ICTs. It will seek to provide a practical application of the knowledge acquired, in the environment and daily life of members of the different groups in order to contribute to their integration and to improve their quality of life.

Measure 18**Promote the development of ICT projects aimed at providing services adapted to the needs of underprivileged people, group or communities**

To promote the development of projects that aim to provide services adapted to the needs of underprivileged people, groups or communities, due to temporary or socioeconomic conditions, in order to facilitate their integration in Andalusian society.

They will be promoted through incentive initiatives such as the creation of online systems to improve the service to people affected by problems of drug dependency and addiction.

Specific actions will also be carried out to develop the Andalusian program for information society and international cooperation, placing special emphasis on priority regions for foreign cooperation from the Andalusian regional government, (Latin America and the Maghreb) in the areas of technological cooperation, computer literacy and the development of e-Government.

5.3 Strategy Line for Digital Participation

Today's society guarantees citizens the right to an opinion and to take part in public and political life. New technologies offer numerous intercommunication tools that allow citizens to communicate, to express opinions, to debate current affairs, to associate and collaborate with others for recreational, social or political reasons.

There are currently numerous meeting spaces on the internet that allow users with a shared interest to meet and connect that would otherwise not have the opportunity to do so. Nevertheless, the potential of these spaces when attempting to involve and promote the collaboration of citizens in decision making processes is underused.

In order to encourage these types of initiatives, it is essential to have not only the virtual platforms that support citizens' participation but also the support and promotional mechanisms that encourage citizens to communicate and participate digitally in Andalusia.

Civil associations underpin our society and they are a vehicle for the participation by many Andalusians. The incorporation of these associations into the digital world appears to be essential for increasing participation in Andalusia.

Objective. To promote the participation of citizens in every aspect of public life, both civil and political, through the use of ICTs

New technologies offer citizens the possibility to directly express their concerns and opinions. Steven Cliff describes **e-Democracy** as *"how the internet can be used to enhance our democratic processes and provide increased opportunities for individuals and communities to interact with government"*²⁵

This objective seeks to promote a participatory attitude among the population via ICTs, so that all citizens feel that they have an additional channel to make their opinion heard and to be involved more directly in the decision making in their environment. The creation of citizen participation platforms and the presence of associations on the internet will be promoted.

Measure 19 Service platforms for digital participation

Creation of service platforms that make digital participation by citizens possible and that allow the needs and initiatives in public matters and issues of general interest to be monitored.

The creation of these platforms will be encouraged, which will allow different citizens' ideas to be proposed, discussed, analysed, evaluated and voted on, through an ideas bank.

Measure 20 Advancing e-Democracy and the electronic vote

To involve citizens in the decision making processes in various spheres of public life through the use of ICTs. A proactive attitude will be encouraged among citizens through the implementation of pilot experiments in participatory democracy in all levels and areas of public life.

The projects should include spaces for information, dialogue, debate and mechanisms for electronic voting, allowing citizens to get involved in the decision making of public administrations and other organisations in their immediate environment (popular enquiries, educational advice, drafting regulatory measures or elections at different levels).

²⁵ Steven Cliff is a renowned expert and leader on the e-Democracy movement. He is also a consultant and strategist on issues related to online citizen participation and networks.

Measure 21 Promoting digital citizen participation through associations

To promote the presence and the development of activities in the network of citizen associations so that they can offer their services online; and to promote their members to communicate and participate. The use of new technologies as a means of meeting, discussing and collaborating among citizens will be encouraged.

Incentives will be provided for projects to modernise their internal management, their presence on the internet and the provision of online services to their members. Similarly, cooperation among associations will be encouraged through ICTs as well as those innovation projects related to the search for new services and emerging association activities.

Special emphasis will be placed on those associations of Andalusian origin located in other Spanish regions or other countries in order to facilitate the integration and communication of Andalusians not living in Andalusia, temporarily or permanently, with the rest of the Andalusian region.

5.4 Summary of Objectives and Measures in the Area of Digital Community

Strategy Line	Objective	Measures
Digital Citizenship	To increase the percentage of the population that uses ICTs in Andalusia	Measure 1. Disseminate the use and effectiveness of ICTs. Measure 2. Incentives to facilitate broadband connection to the internet in households. Measure 3. Universal access to ICTs via easy to use devices that are affordable for all income levels. Measure 4. List of rights of digital citizens in their relations with government and in their access to digital services.
	To promote technological knowledge as a natural part of citizens' skills	Measure 5. Certification of basic ICT knowledge for citizens. Measure 6. Basic ICT training for Andalusian citizens.
	To guarantee the availability of a close point of access, training and advice on ICTs	Measure 7. Evaluation of the resources and infrastructures available to promote information society. Measure 8. Creation of the digital volunteer network: Andalusia's Digital Commitment.
Digital Inclusion	To redress the gender inequality of ICT users	Measure 9. Specific ICT training program for women. Measure 10. Promotion of innovation initiatives for content, platforms and services specifically designed for women.
	To speed up the adoption of ICTs by the elderly	Measure 11. Specific training program for the elderly in ICT use and services adapted to their needs. Measure 12. Promote the creation of content by the elderly.
	To promote the use of ICTs in the environment of people in situations of dependency	Measure 13. Specific ICT training program adapted to the needs of people in situations of dependency. Measure 14. Incentives for developing ICT projects that contribute to improving services to people in situations of dependency, as well as their quality of life and that of the people that provide them with assistance.
	To strengthen the use of ICTs and adapted services by people with disabilities	Measure 15. Specific ICT training program adapted to the needs of people with disabilities. Measure 16. Incentives to develop ICT projects that encourage incorporation into information society and the social integration of people with disabilities.

Strategy Line	Objective	Measures
	To make knowledge and the use of new technologies available to the population in underprivileged situations, environments and areas.	Measure 17. Introduction of the use of new technologies as a vehicle for social and territorial integration and equality. Measure 18. Promote the development of ICT projects aimed at providing services adapted to the needs of underprivileged people, group or communities.
Digital Participation	To promote the participation of citizens in every aspect of public life, civil and political, through the use of ICTs	Measure 19. Service platforms for digital participation. Measure 20. Advancing e-Democracy and the electronic vote. Measure 21. Promoting digital citizen participation through associations.

5.5 Summary of Indicators in the Area of Digital Community

Indicator	Description	Current value	Target value
1. Population that regularly uses the internet	Percentage of people (considering the 16-74 age bracket only) that have used the internet regularly in the last three months.	33.1%	67.0%
2. Homes with internet access	Percentage of homes (of the total number of homes in the region) that have an internet connection.	31.7%	62.0%
3. Homes with broadband access	Percentage of homes (of the total number of homes in the region) that have a broadband internet connection. These are defined as ADSL or cable.	24.2%	45.0%
4. Number of CAPIs per 10,000 inhabitants	This shows the coverage of public internet access centres in relation to the total population. It measures the average number of CAPIs (Guadalinfo and Telecentres) per 10,000 inhabitants.	0.88	2.0
5. Gender ratio in internet use	This indicator reflects the differences in the penetration of internet use between men and women and measures the number of women that use the internet compared to the number of men over a one year period.	0.84 women/men	1.0 women/men
6. Percentage of elderly internet users	Take-up of internet use in the population over 65 years of age over a one year period.	1.4%	4.0%

6 COMPANIES FOR THE NEW ECONOMY

Innovation and information and communications technologies are forging a new economy in which the productivity and competitiveness of companies depend on their capacity to efficiently generate, process and apply knowledge in a global and interconnected world. The rapid growth of ICTs is transforming the way in which companies work and interact, changing the rules of business and significantly influencing the creation of a new social and economic context.

The sectors of the Andalusian economy that have traditionally been competitive must increase their efforts to compete in global markets. That is why it will vitally important to ensure the intensive take-up of ICTs in companies, placing special emphasis on the agrifood, tourism and retail sectors.

The different degrees of penetration of ICTs in the different business sectors make it necessary to customise specific actions for each of them that ensure an impact on their productivity and competitiveness.

The business structure in Andalusia is largely comprised of the self-employed and companies with less than ten employees, who cite one of the main reason for not using ICTs as the lack of a need for them in their business operations, according to all the surveys.²⁶ It will be essential to promote the benefits of implementing ICTs to change this perception.

The level of training of Andalusian employees has risen significantly in recent years, which has undoubtedly contributed to the increase in companies' productivity. It is important to continue to make progress in this area in order to have human capital that is appropriately trained and qualified to be able to make the most of ICT use.

Telework can therefore play an important role as a tool for increasing productivity and competitiveness in the Andalusian economy and to improve employees' quality of life. It can also prepare them for the demands of the organisations of the future in the globalised world, and for the new information and knowledge society era, guaranteeing employees' social rights and contributing to the improvement in the quality of employment through its negotiated introduction with social and economic agents.

In the last few years, the ICT sector in Andalusia has experienced significant growth and it is going through an important period of progress and consolidation, which is creating an important source of knowledge and innovation.

The consolidation and strengthening of this sector in Andalusia is increasing the size of companies, the strategic alliances between companies in the sector, the implementation of quality assurance systems, the specialisation of their services and the existence of an efficient science-technology-business system.

²⁶ Sources: Andalusian Institute of Social Studies. AETIC report on information society technologies in companies 2004

The strategies to ensure that **Andalusian companies are more competitive** and that Andalusia has a powerful **ICT sector** are detailed below.

2010 Horizon

New companies, new economy

Andalusian companies treat the new knowledge economy as the core environment in which they have to grow, develop and compete. ICTs have changed from being an expense imposed on them by an end-of-the-century trend to being a fundamental instrument in their innovation and competitiveness strategies.

Our olive oil producers already carry out more than half of their business through e-commerce. The pioneering application of “environmental intelligence” solutions in our tourism establishments caused a sensation at the last FITUR tourism fair. Every industrial estate in Andalusia has a technology antenna integrated in the Andalusian Network of Technology Areas (RETA).

The percentage of teleworkers has reached the European average. Many of them work for global companies and live on our coastline, enjoying our quality of life.

The international freeware conference recently organised by the Andalusian ICT sector broke records for participation and showcased two Andalusian products that have become global leaders.

Andalusian companies have led the big European consortiums formed by the latest project invitations for the 7th Framework Program in the sectors for wireless technologies and embedded systems for air navigation.

6.1 Strategy Line for the Digital Company

Andalusian companies are competing in an increasingly dynamic and globalised market. It is essential that they are aware of the advantages to be derived from using new technologies in their production and organisational processes, as a means of achieving sustainable growth in their business and increasing their productivity and competitiveness.

The line attempts to encourage companies to incorporate the use of ICTs in their core processes to gain competitiveness. This will open new ways of doing business through competitive cooperation with other companies, allowing them to explore the huge possibilities offered by e-commerce and electronic invoicing.

The World Summit on the Information Society in Tunis therefore established that:²⁷ *“the adoption of ICTs by enterprises plays a fundamental role in economic growth. The growth and productivity enhancing effects of well-implemented investments in ICTs can lead to increased trade and to more and better employment...”*

Furthermore, Telework offers advantages that directly influence the productivity of enterprises, and employers and professionals should be aware of the huge possibilities offered by this working method. Telework can contribute to improving the balance between working and personal lives, as well as providing new employment opportunities and niches in the rural environment.

Objective. To improve understanding about ICTs, raising awareness and training companies to incorporate them in their business management.

According to all the surveys, one of the principal causes of the low level of ICT use is the perception by a significant part of Andalusian business people that they are not necessary for their business operations, as well as other reasons such as lack of awareness, distrust, their complexity, the excessive cost and problems of security.²⁸ This objective tries to change this situation in the coming years.

It will aim to ensure that companies are aware of the benefits that ICTs can provide; the training of employers and workers; and the creation of certificates showing the level of ICT adoption by companies.

²⁷ Point 12 of the Tunis Commitment.

²⁸ Source: Andalusian Institute of Social Studies

Measure 22 Promote the competitive advantages that ICT use generates in companies

Promotion of the benefits and advantages associated with ICT use in companies and the importance of integrating them in business processes as a means of improving productivity and competitiveness.

The actions to be implemented include: to prepare an intensive program of promotional campaigns to be carried out in the audiovisual and written media which feature aspects such as the specific benefits of using ICTs, the incentives made available by government to encourage their use, the generalised use of electronic invoices or the current regulatory framework relating to e-commerce; to reward companies that have the best ICT initiatives; and to promote the participation of these in sector forums, seminars, congresses and technological conferences which highlight tools, solutions and technological projects that have already been implemented as a way of illustrating success stories and best practices.

In all these actions, special emphasis will be placed on companies in rural areas, the self-employed and micro-companies.

Measure 23 Certificates of the level of ICT use in companies

To study the interest of providing certificates that indicate the level of ICT incorporation in companies, supported by a defined Digital Progress Model, which allows the self-employed, micro-companies and SMEs to be technologically classified according to their level of use of new technologies in their business processes.

The validity of these certificates will also be analysed in the public tendering processes and in the design of future incentive plans for modernising companies.

Measure 24 Continuous training for employers, managers and company workers in the use of ICT based tools and services

Training programs on the main collaborative and productivity tools aimed at employers, managers and company workers in order to ensure an efficient use of ICT tools in business operations.

These programs will be carried out through vocational and continuous training programs in cooperation with the Spanish central administration in its nationwide and regional programs, using classroom-based, online and mixed classroom-online methods.

Furthermore, services to develop training activities in new technologies for companies will be instigated, especially through the Andalusian Network of Technological Spaces (RETA).

Objective. To improve companies' competitiveness and productivity through ICT use

The intensive use of ICTs in production and management processes strongly influences companies' productivity and competitiveness. The number of Andalusian companies that are modernising themselves and innovation by using ICTs must be significantly increased.

The launch of the Andalusian Network of Technological Spaces (RETA) is helping to create an appropriate culture of cooperation and innovation in order to increase the technological development of companies in Andalusia. Technological supply and demand need to be matched in order to identify companies' requirements.

The principal actions will focus on making use of the advisory role that companies and business organisations hold among their members; to incentivize the adoption of ICTs in companies with special emphasis on the strategic business sectors in Andalusia; and to establish coordinated actions to identify the technology demand of Andalusian companies throughout the region.

Measure 25 Coordinated action through regional-wide entities to promote ICT use in companies

Develop actions coordinated among technology associations that belong to the Andalusian Network of Technological Spaces (RETA) in order to encourage ICT incorporation in production and management processes in order to increase the competitive capacity of companies and their levels of innovation.

Consultancy companies will be authorised to collaborate in the process, with particular emphasis placed on the self-employed and micro-companies located in rural areas.

ICT Service Centres will also be promoted in industrial estates where companies can share technology equipment, access telecommunications services and benefit from the knowledge and technology transfer from technology parks.

Measure 26 Promoting the role of business organisations and associations as advisors on the use of ICTs in companies

To promote the role of business organisations and associations as advisors on the use of new technologies among the self-employed and SMEs to allow them to improve their business processes and the services that they offer to their clients and society as whole.

This will be implemented through incentivising innovative projects aimed at meeting the general needs of their members, principally through sector based actions, and training and adaptation of solutions based on open source technology.

Furthermore, the organisation of specific conferences and seminars will be co-financed as an informative vehicle for their members on the advantages of using ICTs and existing public incentives.

Measure 27 Incentives for companies to adopt ICTs

To maintain the integral program of incentives that combines all general aids for promoting business innovation, under a comprehensive and simplified catch-all heading, and especially those for encouraging ICT take-up by companies.

The incentives will be for projects that are aimed at contracting ICT diagnoses and implementation plans, integral company management through ICT incorporation, business network integration (including sector based digital networks), the use of specific training services and companies contracting qualified technical ICT personnel.

Furthermore, the use of ICTs will be specifically incentivized in those sectors that require special consideration due to their strategic importance to Andalusia, such as tourism, retailing and the primary sector.

Objective. To increase the competitive capacity of production sectors

The rules of the market today are increasingly demanding and it is important to acknowledge the challenge that exists for companies of trusting an open and globalised economy. It is essential for Andalusian companies to work together closely to achieve a better position in these markets.

Initiatives will be implemented to achieve this objective to ensure that the competitive capabilities of the production sectors increase through cooperation with other companies and use of sector based digital networks. The development and implementation of sector based solutions will also be promoted.

Measure 28**Competitive cooperation between companies in the same sector through the use of advanced ICT services**

To encourage competitive cooperation among companies through the implementation and use of sector based digital networks that encourage concurrent engineering and design projects, cooperation in projects to innovate products, processes and services, and the dissemination of ideas and tools that allows companies in the same sector to grow.

Some of the potential actions will include the promotion of virtual markets that allow users to take advantage of economies of scale in purchases of raw materials or the creation of consortiums for selling larger production volumes.

Measure 29**Implementation of sector based solutions and applications**

To promote the development and implementation of sector based technological applications and solutions to improve a sector's overall processes and productivity, preferably in those sectors that require special consideration due to their strategic importance in Andalusia.

Creation of sector based service and content platforms on the internet, which allow companies to access services and information that are specific to their sector.

Objective. To promote electronic commerce in Andalusian companies (B2B and B2C)

The huge success of the internet as a communications channel is in contrast to the underdevelopment of this channel as an engine for electronic commerce between companies and individuals. In the near future, the majority of transactions will be carried out over the internet, especially using e-commerce platforms for planning, purchasing and joint engineering processes between clients and suppliers.

Actions aimed at encouraging Andalusian companies to conduct e-business will be launched, with special emphasis on the widespread use of electronic invoicing. An electronic emblem will be created that will ensure that electronic commerce of Andalusian products is fully guaranteed.

Measure 30**Adoption of electronic commercial transactions**

To strengthen the development, implementation and use of e-commerce related technological solutions, due to their effectiveness and value on companies' competitiveness.

The use of feasibility and profitability studies on implementing e-commerce and electronic invoicing will be incentivized, as well as plans to implement these solutions, with special emphasis on SMEs and micro-companies in rural areas.

Measure 31 The Andalusian electronic quality standard

This standard will allow consumers to be aware that Andalusian products and services offered over the internet are being sold with full guarantees in terms of the compliance with standards of ethical conduct, security and confidentiality. The suitability of using the Andalusian quality standard mark will be examined.

This will be publicised through internet campaigns that increase the level of trust of buying products with the Andalusian standard mark online.

Objective. To encourage telework

The employment market of the future needs flexible, independent, qualified and suitable profiles to be able to compete and make companies more profitable. Telework is the cornerstone that will allow this to occur and it will also facilitate social and geographical cohesion in Andalusia.

The measures to be implemented are aimed at raising awareness of the many advantages of telework, especially towards improving productivity and balancing family and professional life. The creation of special telework centres will be incentivized and companies that offer teleworking to their employees will be supported.

Measure 32 Raising awareness of the advantages of teleworking

To promote the advantages of telework as a means of increasing companies' productivity and allowing workers to optimise their time, encouraging balance between their family and professional lives. It also encourages the social integration of people with reduced mobility or the appearance of new opportunities and/or employment niches in rural areas that promote economic regeneration in underprivileged areas.

Awareness campaigns are envisaged aimed at workers and companies that will be made aware of the diverse aspects related to telework, including its advantages, its current legal and labour regulations or the existing tax relief.

Measure 33 Promoting the adoption of telework by Andalusian companies

To strengthen the creation of teleworking centres that offer footloose professionals, small companies and teleworkers from private companies a physical space equipped with all the tools required to be able to telework.

Incentives will be designed to encourage the creation of these centres, with special emphasis on those located in rural areas.

Furthermore, the incentivisation of projects by companies that offer teleworking options to their employees will be studied, within a framework agreed with the unions and the representative business organisations.

6.2 Strategy Line for the ICT Sector

The ICT sector is one of the strategic sectors in the region of Andalusia. A strong ICT sector in Andalusia would support industry structure, encouraging business ideas and assisting the relationship between companies in the ICT sector and the innovation system. The technological development and evolution of the markets must be anticipated in order to act on the ICT sector, promoting its maturity, consolidation, growth and constant renewal.

Furthermore, it is essential to develop the competitive position of the Andalusian ICT industry in the short, medium and long terms in the global markets through appropriate strategic positioning of the agents that comprise the science-technology-business system, stimulating R&D+i in order to significantly increase the number of patents registered by Andalusian companies in the ICT sector.

Increasing Andalusia's intellectual capital and generating the knowledge required for a qualified employment pool in the ICT sector will be a priority.

Open source software represents a clear opportunity for the local software development industry in addition to other benefits in relation to its impact on total ownership costs or the universality of access to knowledge. The commitment made by a highly significant group of Andalusian companies in the sector, in line with the actions promoted by the Andalusian regional government, have led to a leadership position in this area that should be strengthened and reinforced with new specific and generic measures, aimed at producing growth and strengthening the Andalusian ICT sector.

As Manuel Castells said, "...the history of freeware, and more generally the open code movement, show that increased technological innovation and higher economic productivity can occur in a cooperative and motivated working context, characteristic of the world of creation".²⁹

Objective. To consolidate and strengthen the ICT sector in Andalusia

Due to their characteristics, companies in the ICT sector often encounter barriers to entry that are difficult to overcome in order to compete outside of the local market and to have reasonable access to the principal technological projects. The future of the sector needs to consolidate and strengthen these companies in order to ensure that there will be more high-tech ICT companies that are bigger, capable of supplying diverse and innovative products and services.

Actions aimed at guiding companies in the sector towards excellence, predicting ICT demand from users, companies and governments, and ensuring that companies in the sector can merge in order to grow, are all envisaged in order to achieve this objective.

²⁹ Address by Manuel Castells at the World Social Forum on innovation, freedom and power in the information age. Porto Alegre 2005.

Similarly, Andalusia's attraction to investors and external partners, and its appeal to headquarters of national and international ICT companies will be strengthened.

Measure 34 **Encourage demand for new technologies**

To promote actions aimed at stimulating user and corporate demand for ICTs, as well as actions to promote interaction between technology producers and potential consumers, so that it leads to an efficient market while stimulating increased demand for technology.

Consultancy programs will be set up for companies regarding the application of innovative technologies in their products and services, as well as incentives for incorporating electronic devices in consumer goods.

Measure 35 **Planned research of ICT demand from the public administration and from large private companies**

To promote actions aimed at early identification of ICT demand from the public administration and large private companies in order to adapt innovation activities of ICT companies towards the needs identified.

The potential of public purchasing will be used on a special basis as a means of boosting the ICT sector.

Furthermore, the method of establishing periodic meeting forums will be analysed between companies in the ICT sector and the large innovation companies in order to align supply with demand on a continual basis.

Measure 36 **Promotion of critical size**

To promote favourable conditions to achieve an Andalusian ICT sector based on entrepreneurship and with sufficient financial, economic and technical capacity to compete globally through actions that encourage the creation of new innovation companies (especially technology companies), as well as the collaboration and association of existing companies that will strengthen their position in the local and global market.

Special emphasis will be placed on the creation of ICT companies in rural areas (so that they set examples to other companies) as well as on companies in emerging employment sectors.

Specific programs for attracting investors and the headquarters of national and international ICT companies will be carried out based on the proliferation of competitive advantages offered in Andalusia. Furthermore, actions to attract the presence of national and international agencies in the field of ICTs will be initiated.

Measure 37 **Sector and geographical diversification of Andalusian ICT companies**

To encourage the diversification of products, services and productive sectors of companies in the ICT sector as well as their entry into other geographical markets in order to avoid over-dependency on their traditional markets and to ensure a stronger competitive position in global markets.

A study of the ICT sector in Andalusia will be carried out and maintained in order to classify it appropriately and to establish specific action plans for each segment.

Actions aimed at encouraging the globalisation of companies will be carried out, such as incentives or drafting specific foreign promotion plans. The creation of business networks will also be promoted in the ICT sector and their interrelation with national and international networks in order to facilitate the exchange of knowledge and positioning in other markets.

Objective. To stimulate knowledge creation and application by companies in the ICT sector

Companies in the ICT sector in Andalusia initiate thousands of projects every year, although a significant proportion of them are still not innovation related or international in scale, capable of producing patents that can be converted into exportable products. The future needs to promote R&D+i in the ICT sector as a way of increasing added value and the specialisation and competitiveness of its products and services.

Tom Peters, one of the world's leading experts on management says: *"...If the other guy is getting better, then you had better be getting better, faster than that other guy is getting better—or you are getting worse. Translation: it's innovation"*.

This objective seeks to significantly increase the number of Andalusian ICT companies that innovate and that are aware of the need to share knowledge through technological cooperation. Furthermore, special emphasis will be placed on protecting innovations that are created by Andalusian companies.

Measure 38 Strengthen the innovative position of the ICT sector

To maximise the number of companies that innovate in the ICT sector and increase total innovation expenditure in the private sector compared to the public sector.

A permanent dialogue will be created with companies in the ICT sector in order to understand their needs and to assess them in relation to current incentivisation mechanisms.

Actions aimed at promoting the Andalusian ICT industry's participation in EU innovation programs, the CENIT program and national and European R&D technological platforms will also be established. Actions will also be set up to keep the Andalusian industry as close as possible to sources of regulation and to forums from which large R&D+i programs are managed at a national and European level.

Measure 39 Technological cooperation among ICT companies

To promote technological cooperation in R&D+i in the ICT sector between companies in the sector, between these companies and other industrial sectors or with the university, in order to encourage technology transfer processes that lead to technology excellence.

A program of inter-sector work will be established in order to analyse the need to incorporate new technologies and to promote R&D+i projects among companies in the sector and other sectors, placing special emphasis on those sectors that are strategic or essential to the future of the economic development of the region (aeronautics, metal-mechanics, agri-industry, biotechnology, energy, the environment and cultural industries).

Measure 40 Promote the protection of intellectual and industrial property rights

To promote the protection of intellectual and industrial property rights to pass on more of the benefits from the results of R&D+i to the ICT sector.

Incentives will be established so that companies can protect their innovations and obtain the maximum benefit from them, either through patents, utility models or author rights.

Actions aimed at raising awareness of prevailing national legislation and European initiatives on intellectual and industrial property rights will also be established.

Objective. To increase qualified employment in the ICT sector

Training professionals is a key factor to allowing companies to successfully create innovative products. Andalusian companies have to employ professionals that know how to use ICTs and who develop their careers through continuous training in which knowledge transfer and creation is a daily task.

Actions will be implemented to promote professionals' skills in the ICT sector, to retrain qualified personnel from other disciplines as ICT professionals, and to adapt the training plans of universities and vocational training courses to the new needs of the employment market.

Measure 41 Improve the training of ICT professionals

To implement action lines aimed at improving the training of ICT professionals in companies in order to contribute to strengthening their competitiveness and increasing the quality of employment, as well as retraining qualified personnel from other disciplines into ICT professionals and covering the potential shortage of professionals in this sector.

Vocational and continuous training programs will be developed in cooperation with the Spanish central administration in its nationwide and regional programs, focussed on training these professionals in ICT methodology, environments and tools. Projects will also be promoted to allow young graduates from other disciplines that are not directly related to ICTs to be able to sit retraining courses, as well as to carry out work experience in ICT companies.

Measure 42 Adaptation of training plans in universities and vocational training courses

To adapt and/or review the training plans of universities and vocational training courses in order to adjust the profiles of future ICT professionals to the new needs of the labour market in order to guarantee their superior qualifications and their ability to respond to the dynamic nature of the ICT sector in global markets.

6.3 Summary of Objectives and Measures in the Area of Companies for the New Economy

Strategy Line	Objective	Measures
Digital Company	To improve understanding of ICTs, raising awareness and training companies to incorporate them in their business management.	Measure 22. Promote the competitive advantages that ICT use generates in companies. Measure 23. Certificates of the level of ICT use in companies. Measure 24. Continuous training for employers, managers and company workers in the use of ICT based tools and services.
	To improve companies' competitiveness and productivity through ICT use.	Measure 25. Coordinated action through regional-wide entities to promote ICT use in companies. Measure 26. Promoting the role of business organisations and associations as advisors on the use of ICTs in companies. Measure 27. Incentives for companies to adopt ICTs.
	To increase the competitive capacity of production sectors.	Measure 28. Competitive cooperation between companies in the same sector through the use of advanced ICT services. Measure 29. Implementation of sector based solutions and applications.
	To promote electronic commerce in Andalusian companies (B2B and B2C).	Measure 30. Adoption of electronic commercial transactions. Measure 31. The Andalusian electronic quality standard.
	To encourage telework.	Measure 32. Raising awareness of the advantages of teleworking. Measure 33. Promoting the adoption of telework by Andalusian companies.
ICT Sector	To consolidate and strengthen the ICT sector in Andalusia.	Measure 34. Encourage demand for new technologies. Measure 35. Planned research of ICT demand from the public administration and from large private companies. Measure 36. Promotion of critical size. Measure 37. Sector and geographical diversification of Andalusian ICT companies.
	To stimulate knowledge creation and application in companies in the ICT sector.	Measure 38. Strengthen the innovative position of the ICT sector. Measure 39. Technological cooperation among ICT companies. Measure 40. Promote the protection of intellectual and industrial property rights.
	To increase qualified employment in the ICT sector.	Measure 41. Improve the training of ICT professionals. Measure 42. Adaptation of training plans in universities and vocational training courses.

6.4 Summary of Indicators in the Area of Companies for the New Economy

Indicator	Description	Current value ³⁰	Target value
1. Percentage of employees that use computers connected to the internet.	Percentage of employees in companies with less than ten workers that use computers connected to the internet at least once a month.	N/A (Indicator analysis project)	50.0%
2. Percentage of micro-companies and self-employed people with internet access.	Percentage of companies with less than ten employees and self-employed people with internet access.	43.4%	85.0%
3. Percentage of micro-companies and self-employed people with broadband access.	Percentage of companies with less than ten employees and self-employed people that have access to the internet via broadband technologies.	39.5%	70.0%
4. Percentage of micro-companies and self-employed people that have a website or webpage.	Percentage of companies with less than ten employees and self-employed people that have a website or webpage on the internet.	N/A (Indicator analysis project)	39.0%
5. Percentage of companies with more than ten employees that sell through e-commerce.	Percentage of companies with more than ten employees that sell through e-commerce (payment may or may not be made via the internet).	2.5%	10.0%
6. Percentage of companies with more than ten employees that use electronic invoicing.	Percentage of companies with more than ten employees that use systems that manage and issue invoices through online or electronic means.	N/A (Indicator analysis project)	Indicator analysis project
7. Percentage of teleworkers among the active population.	Percentage of working people that have carried out a task with economic added value away from their habitual place of work, during at least a significant period of time, using ICTs, in relation to the total working population in Andalusia.	N/A (Indicator analysis project)	Indicator analysis project
8. Percentage of companies with more than ten employees who are connected to the company's ICT systems by external online networks.	Percentage of companies with more than ten employees who are connected to the company's ICT systems by external online networks.	7.2%	20.0%
9. Weighting of the ICT sector (total ICT sector as a % of GDP).	Sales of the ICT sector in relation to the gross domestic product of the region (as a percentage).	N/A (Indicator analysis project)	Indicator analysis project
10. Headquarters of companies in the ICT sector as a percentage of the national total.	Headquarters of companies in the ICT sector as a percentage of the national total. Branches, local offices and representative offices that companies in the sector may have in Andalusia are excluded.	N/A (Indicator analysis project)	Indicator analysis project

³⁰ Survey on the use of ICTs and e-commerce in companies 2005/2006, by the Spanish Statistics Institute.

Indicator	Description	Current value ³⁰	Target value
11. ICT sector exports as a percentage of Andalusia's total exports.	ICT sector exports as a percentage of Andalusia's total exports.	N/A (Indicator analysis project)	Indicator analysis project
12. Expenditure on innovation by companies in the ICT sector (expressed as a percentage of total sales).	Expenditure on innovation by companies in the ICT sector (expressed as a percentage of total sales) during the reference year.	N/A (Indicator analysis project)	3.2%
13. SMEs that innovate in the ICT sector (as a percentage of total ICT SMEs).	SMEs that innovate in the ICT sector (as a percentage of total ICT SMEs) during the reference year.	N/A (Indicator analysis project)	10.3%
14. Employment in ICT manufacturing and service sectors (as a % of the working population).	Employment in ICT manufacturing and service sectors as a % of the working population (high and medium-high tech).	N/A (Indicator analysis project)	1.6%

7 INTELLIGENT ADMINISTRATION

Information and knowledge society offers new possibilities for public administrations to make their services available to citizens and companies. The widespread use of new communications channels such as mobile telephony and internet represents an historic opportunity to offer personalised services at any time and from any location with guarantees of confidentiality and security.

Significant progress has been made in recent years to make e-Government a reality. The Andalusian regional government currently leads Spanish statistics for the number of online services that can be completed over the internet using an electronic signature. It is now important to progress towards a model of intelligent administration where citizens are treated in an individual way and who should not be concerned with the division of responsibilities between the different public administrations present in Andalusia. Citizens are at the centre.

The organisation model for current processes in the administration principally takes into account interaction with citizens and companies in person or over the telephone. An intelligent administration will not be achieved until a genuine restructuring of these processes occurs in order to adapt them to greater volume and faster interaction with users, with quality and usability criteria.

The strategy to modernise the public services of the Andalusian regional government, approved by the governing council on 20 June 2006 and that is currently coordinated by the Regional Ministry of Justice and Public Administration, seeks to achieve a more flexible, efficient and modern administration, among other objectives, that contributes to citizens' wellbeing and quality of life. It is a strategic and horizontal instrument that translates into an operational program of actions whose implementation and development is considered essential in order to successfully improve the quality of services and the modernisation of the administrative organisation of the Andalusian regional government.

It will have to progress towards a comprehensive range of electronic procedures and services and towards the cooperation and interoperability of the I.T. systems between different administrations, with special emphasis on modernising the technology of local Andalusian administrations.

To make this change effective, it is essential that public employees are aware of the use of ICTs and have the appropriate training to use them. They must become the drivers and the catalysts behind digital culture and allow the administration to evolve towards being a genuine knowledge based government.

This action area attempts to bridge the gap between government and citizens and is also focussed on the leading role of the administration to promote the implementation of information and knowledge society in Andalusia. It is divided into five main strategy lines: **The management model of the Andalusian regional government** places the emphasis on the changes in internal procedures to be able to offer quality multi-channel electronic services; **digital public services** which are aimed at ensuring that all public administrations

in Andalusia offer all their electronic services in a coordinated way; furthermore, the use of new technologies to provide services in the areas of **education**, **healthcare** and **justice** are considered as specific strategy lines, due to the need to align them with the national and European strategic development plans for information and knowledge society, as well as the existence of specific European indicators in these three areas.

2010 Horizon

The paperless administration

Public offices are no longer places with cupboards in the hallways, full of files stuffed with papers. Public employees deal with citizens' needs without service windows or counters but with all the information available through their computers connected to the virtual working environment.

And if citizens prefer not to attend the offices, they can do it from home via the internet, when it suits them most. By using your DNle (electronic ID card) you can carry out any type of procedure with Andalusian administrations. They can also be used for paying for things. You don't have to walk from one place to another carrying papers. You can resolve anything from the service portal of any administration, including the regional government, the town council, the provincial offices or central government. And they will not ask you to present papers that you have previously provided so many times.

Some chronically ill patients in the *Sierra de Segura* have been made happier. They have been provided with a little device that monitors them every day and they visit their family doctor periodically, who attends to them and consults with the specialist by a scheduled videoconference appointment. They can also purchase their medicines using electronic prescriptions without having to go to the health centre to renew them.

If anything symbolises the change that Andalusia is experiencing, it is the classrooms in our schools and institutes. The smell of chalk, dearly loved by many, only exists for a few subjects. Electronic blackboards, computers on desks, digital notes or online libraries are daily tools for our pupils.

Trials take place quicker. That's why they seem fairer.

7.1 Strategy Line for the Intelligent Administration Management Model of the Andalusian regional government

New technologies have changed the way in which public administrations relate to citizens. Citizens and companies take a more active role in the management of their procedures and files, and demand easy and quick access in order to interact with confidence and security with the Andalusian public administration. Administrative processes need to be reorganised to take this reality into account.

The OECD states that the use of ICTs in public administration must be accompanied by carefully drafted initiatives when reforming and modernising administrations in order to achieve a genuine transformation.³¹

This new situation will require greater coordination of the I.T. resources in order to integrate the management of information and to offer horizontal and interoperable services across the different regional ministries, maximising investments and the set of available resources.

The definitive evolution from a discretionary administration to one that is citizen centric will take place in this new world. If this service is the main objective, then people are the principal assets of public administrations. The involvement of public employees as drivers of this change is therefore essential to facilitate the move to a digital culture. These employees must be well trained professionals, provided with advanced technology resources and motivated in their efficient use.

The management model of the intelligent administration of the Andalusian regional government must finance the resources so that nearly all procedures of the Andalusian regional government can be carried out online and to progressively implement the digital development of Andalusian citizens, which will prevent citizens from having to present documents that are already available in our administration. Furthermore, it will work towards converting the maximum number of administrative procedures into immediate response services that will be resolved the same day.

31 E-government for better government report. March 2005

Objective. To structure the processes of the Andalusian regional government to provide quality services in line with the demands and potential of information society

Information and knowledge society has characteristics that make it significantly different to the organisational formulas of the previous social model. It is essential to strengthen the efforts to advance towards a method of management with quick, rationalised and efficient processes based on a powerful knowledge management system. These processes must be ready to meet the demands of users at any time, in any place and via any means of access.

According to the OECD, "...multi-channel service delivery moves away from the idea of online services as a more likely channel among many, giving rise to a new paradigm in which ICTs are the common resource for all service channels".³²

Actions will be defined to achieve this objective in order to continue the rationalisation and simplification of the administrative procedures to be able to offer all services through the channel chosen by citizens at any given moment; to specify the commitments that the different entities of the Andalusian regional government take on through digital service charters; as well as to consolidate and integrate the relevant knowledge of the Andalusian administration through an integral knowledge management model that contributes to better meeting citizens' expectations.

Measure 43

Simplification of procedures of the Andalusian regional government aimed at the "paperless administration" model

To rationalise and standardise the management model of the Andalusian regional government, with special emphasis on reviewing and improving administrative procedures, preparing them for the application and implementation of technological solutions and information systems based on the concepts of a paperless administration and continuous improvement.

The procedures carried out by the authorities of the Andalusian regional government will be simplified, standardised and rationalised and the legislative developments that remove legal obstacles relating to the administration's traditional models will be standardised.

The complete set of administrative processes will be definitively automated, especially those procedures which involve citizen interaction.

³² E-government for better government report. March 2005

Measure 44 Quality guarantee for digital service provision

To define and apply quality standards to digital public services that firstly improve the method of providing the service, and secondly, guarantee access to them by citizens and companies.

The basis for guaranteeing the quality of the services provided will be the development of digital public service charters for all entities that report to the Andalusian regional government, including the conditions, commitments and quality level agreements for the provision of public and citizen support services.

The development of mechanisms and systems for analysing and evaluating e-Government initiatives will be taken into account which measure the accessibility, usability and the perception of usefulness of online public services based on a set of appropriate indicators. These will mainly be monitored by the e-Government and public service quality observatory of the Regional Ministry of Justice and Public Administration.

Measure 45 Integration of citizen support services through multi-channel management models

To standardise and integrate the channels of the Andalusian regional government (in person, telephone, SMS, internet, mobile, etc.) in order to create a unified public service model that facilitates the provision of services to citizens and companies with efficiency, security and simplicity.

It will evolve towards a corporate and global citizen service model with the appropriate organisational, technological supports as well as the necessary qualified personnel, which will include the multi-channel service initiatives that currently exist in the different entities of the Andalusian regional government. It will also provide a single overview of the procedures and issues of interest for each citizen or company, independently of the entity that is providing the service.

An electronic single point of contact will be offered that will adapt to the needs of each user through personalised and proactive services, supported on the "digital profile" of each user in their dealings with the Andalusian regional government.

Measure 46 Integral knowledge management model of the Andalusian regional government

To develop an integral knowledge management model of the administration of the Andalusian regional government so that the knowledge acquired can be reused, assimilated, enhanced and applied to managing public services.

Knowledge maps of the administration of the Andalusian regional government will be drafted, conservation protocols will be defined, a technological platform that supports the defined global model will be created, and the knowledge transfer networks acquired from the different management areas of the Andalusian regional government will be developed, such as healthcare, education, justice, employment and social services, among others.

Objective. To prepare the I.T. systems and resources to be able to expand public services in a coordinated and efficient way

Information and knowledge society gives us a glimpse of the changes that will clearly affect the I.T. organisation of the Andalusian regional government, and which will be necessary to progress towards a new approach to the I.T. resources in terms of efficiency, interoperability and cost reduction criteria.

In order to achieve the proposed objective, measures aimed at evolving the current ICT management model at the Andalusian regional government will be developed with a view to achieving maximum flexibility, coordination and performance from the available I.T. resources. Special emphasis will be placed on establishing guidelines that guarantee interoperability between the Andalusian regional government's systems.

Measure 47 Adaptation of the ICT management model of the Andalusian regional government

To adapt the ICT management model of the Andalusian regional government to the requirements and new types of services demanded in the information and knowledge society in order to increase the flexibility in developing ICT projects; to redeploy the existing I.T. resources; and to increase coordination between the different entities of the Andalusian regional government.

A study of the current ICT situation will be carried out and a new ICT management model will be defined based on the findings, which will allow integral management, cost reductions and optimisation of labour, but which will also be quick and flexible enough to respond to new needs that may arise.

The legislative modifications required to transform the ICT management model of the Andalusian regional government will also be undertaken.

Measure 48 Promotion of open standards for interoperability within the Andalusian regional government and in citizen relations

To define and adopt open standards, which do not require the use of proprietary software, in order to carry out procedures with the administration of the Andalusian regional government, with a view to guaranteeing the rights of citizens and companies to access under equal conditions and the freedom to choose software in their electronic relations with public administrations.

The rules needed to regulate the progressive substitution of exclusive formats and protocols with open standards will be developed, guaranteeing the provision of transactional electronic services with full guarantees of quality, transparency and continuity. Special emphasis will be placed on the digital format in which documents are stored to ensure accessibility in the future.

In addition, a corporate interoperability platform will be created that will allow data and documents to be exchanged between the different I.T. systems in the Andalusian regional government. I.T. equipment will evolve towards an open environment, based on fully interoperable standards between operating systems used by the administration.

Objective. To promote digital culture at the heart of the Andalusian public administration

The intelligent administration requires public employees to be the principal drivers behind the changes that are going to occur in the transition to a new digital model. It is essential that they are trained in ICT skills, that they use the new technologies on a daily basis in their working environment and that they accept the change as an opportunity in their professional development.

Measures will be developed to encourage better ICT knowledge among public employees. Working environments will be adapted around virtual and digital models that encourage collaboration, group working and mobility and which will form the basis for establishing teleworking at the heart of the Andalusian public administration based on the prior analysis of those positions or functions that due to their nature lend themselves to distance working.

Measure 49 **ICT qualification of public employees**

To develop continuous training programs in the application and use of ICTs aimed at the group of professionals of the Andalusian regional government, as a result of the advances in I.T. use in administrative processes and the new interaction channels with citizens and companies.

The use of distance training systems will be strengthened using virtual teaching platforms and this will be supplemented with communications and promotional actions designed to reward and publicise best practices by public employees as advocates of the intelligent administration at the Andalusian regional government.

Measure 50 **Development of the virtual working environment at the Andalusian regional government**

To develop and implement the virtual working environment for the professionals of the Andalusian regional government as a single point of entry for the different services and applications used daily at work stations, as a mechanism to encourage collaborative working and as a basic element for the development of working systems that allow employee mobility or online working.

It will also take into account the increase in the digital services aimed at public employees such as employment and occupational procedures, access to commercial catalogues under special conditions, travel, etc.

It will include identity management and a centralised single identification. It will allow collaborative and group working, unified document management and a personalised desktop for every public employee.

7.2 Strategy Line for Digital Public Services

The intelligent administration in Andalusia is based on bridging the gap between public services and citizens and companies using online methods and by coordinating between the different public entities involved in providing these services. A more dynamic and efficient relationship needs to be created with the administration.

Public services should be perceived as a single offering that is totally transparent by the corresponding division of the various public administrations (national, regional and local). The implementation of cooperation and coordination mechanisms among them is especially important and it is appropriate that the different experiences and best practices in information and knowledge society are shared across all institutions.

Citizens expect the minimum amount of aggravation, ease of access and consistency. They will use these new services only if they perceive that they are receiving a genuine benefit and not abstract advantages.

Local administrations also need more encouragement to adapt themselves more rapidly to the modernisation process and to use ICTs in providing services. In order to progress this process, digital model definitions for local corporations must be progressed that bring forward the launch of online services in all Andalusian municipalities, prioritising those aimed directly at citizens and companies.

Objective. To extend digital public services in Andalusian public administrations

The creation of an intelligent public administration in Andalusian must involve the progressive enlargement of the range of services until they can all be fully accessed via online means. Citizens and companies should be presented with a comprehensive catalogue of administrative procedures, organised in a useable and intuitive way.

Technological environments will be promoted in order to achieve this objective, as well as developing information systems and adapting the necessary regulations in order to electronically enable any type of service in every public administration in Andalusia, with special emphasis placed on those services managed by local administrations.

Measure 51 Supply of electronic procedures and services aimed at citizens and companies

To increase the range of electronic public services and procedures available to citizens and companies in order to increase the availability of services, to increase the level of satisfaction of citizens and to reduce administrative costs in companies.

Demand studies and cost-benefit analyses will be carried out prior to digitalisation of the services in order to determine the priority and the economic and social benefits of the initiatives to be undertaken so that the digital services provided are linked to demand from society.

In addition to this, the measure will take into account actions to publicise and incentivize the use of electronic administration services in order to increase their use.

Measure 52 Definition and development of the digital town council model

To define, extend and gradually implement the digital town council model in order to guarantee the automation of the principal internal processes and the online provision of an initial set of services in 100% of Andalusian town councils.

The ICT model for the digital town council will be based on the principles of modular and scaleable solutions, standardised services, reuse of components, economic and technical sustainability, and non-intrusiveness, allowing:

- A complete digital electronic administration platform to be defined based on component architectures.
- A gradual implementation without impacting current management systems.
- To construct a single solution that can be reused in all town councils, taking advantage of the synergies and encouraging the spread of good practices related to the electronic administration development programs in town councils, achieving better coordination, interoperability and efficiency.
- To overcome the financial barrier in developing ICTs in town councils thanks to the low cost of implementing the model once it has been created.
- To address every type of town council based on the initial level of information technology use and resource availability.

A roll out plan for the model will be defined characterised by non-interference with existing systems, which allows the implementation method to be evaluated from the starting point in any given town council, through to the implementation of its chosen digital model.

Measure 53**Development of digital markets for public contracts for goods and services of the Andalusian regional government**

To implement electronic purchasing systems for public contracts and managing purchases within the framework of developing an integrated planning, management and expense control system in order to optimise the process with significant savings in time and costs, as well as the most efficient use of public resources, increasing the level of responsibility, providing even greater transparency and management control.

The incorporation of developments in online processing in administrative contract files is considered a priority. It receives special consideration compared to other procedures because from a practical point of view, it is an area in which the correct implementation of electronic resources could lead to special benefits, both for the administration and for business.

The implementation of the measure will require the appropriate regulatory bases to be established in advance that will allow the development of the electronic purchasing procedure within the framework of the Public Administrations Contracts Act.

Objective. To increase ICT cooperation and coordination between the different public administrations

A fundamental principle of horizontal cooperation will be taken into account for all strategies and actions that are implemented as part of the intelligent administration between all the different public administrations that offer their services in Andalusia.

Any measure to modernise or progress towards information and knowledge society that is sponsored and undertaken at a regional level will have an equivalent action and will be supplemented with collaboration actions that require coordination with the Spanish central administration, guaranteeing that the modernisation also filters down to local administrations.

Cooperation will be specified through measures that guarantee the interoperability of the I.T. solutions of the various public administrations, the transfer of experiences and good practices in the use of ICTs among administrations, with special relevance on freeware based solutions, and promoting technological modernisation and innovation projects at the local level.

Measure 54**Guarantee of interoperability between systems of the Andalusian public administrations**

To guarantee interoperability of the I.T. systems of the Andalusian regional government with the Spanish central administration and local administrations in Andalusia in order to cover the information and exchange needs of documents, data and processes as a basis for providing new services to citizens and companies.

Standards will be defined for data exchange and connectivity for business processes that connect with the public administration and cooperation agreements will be established with other external agents, such as trade associations.

The progressive implementation of the integrated citizen support offices (060) for all the public administrations in Andalusia will be undertaken.

Measure 55**Transfer of experiences and good practices in ICT use in Andalusian public administrations**

To develop cooperation strategies for transferring the proprietary technology of the Andalusian regional government or of local administrations to other institutions or towns, promoting the concept of reusability and standardisation of software and digital services.

The principal action is to create and maintain a repository of freeware that allows the exchange and transfer of these I.T. programs between different public administrations, as well as among these and companies.

Cooperation channels will be created using permanent working groups between the different public administrations in Andalusia with the primary objective of encouraging ICTs in local government.

Measure 56**Incentives for technological innovation and modernisation projects in Andalusian local administrations**

To incentivize technological innovation and modernisation projects in local town councils with a view to improving the provision of services under their responsibility to citizens and companies through the intensive use of new technologies.

The projects that receive incentives must follow one or various actions from these strategy lines:

- Innovation in public service provision
- Modernisation in public service provision
- Research, development and innovation at a local level

7.3 Education Strategy Line for Digital Society.

The advent of information and knowledge society produces a series of transformations in the educational context that fundamentally lead to the widespread introduction of new technologies in all educational centres, including schools, universities and vocational training.

Teaching and learning methods change and the ways of accessing information and knowledge multiply. Multi-lingualism and interculturality are real needs in today's Andalusia that must be reflected in our educational system.

Higher education must also evolve towards a teaching style that explores the possibilities of virtual education.

Following the provision of modernising infrastructures and elements which are used to create "ICT classrooms", educators must apply innovation to the education process and progress towards the concept of "ICTs in the classroom".

For many Andalusian families, educational centres are the main meeting point with their fellow citizens. Schools can become the leading advocates for introducing new technologies into homes, for encouraging social integration and that contribute to computer literacy. This has to be developed further by creating digital services for parents which are flexible and adaptable to this new era, constantly searching for excellence to increase the involvement of tutors in educational centres.

Professional educators are the cornerstone on which the development and application of educational innovation are based. Andalusia still has a relatively low number of teachers that consider themselves as skilled in the use of ICTs. This reality makes it difficult for pupils to use ICTs as a daily tool during the educational process in order to access information and knowledge. The digital culture must be implemented without delay among professional educators in Andalusia.

Objective. To develop ICT based academic training

Teaching and learning processes as well as organisation models in classrooms are being redefined due to changes being driven by ICTs and their widespread use among citizens.

Educators will become the principal drivers behind projects for educational innovation, and the creation and application of digital educational materials.

The hectic pace of today's society means that it is often difficult to harmonise the interests of educators and parents in order to monitor pupils' training. Similarly, access to training in some rural areas is harder than in metropolitan areas.

The appearance of new communication and relational elements between members of the educational community, and the availability of electronic learning platforms that transcend the environment of the educational centre, creates an excellent opportunity to innovate teaching models that use ICTs.

Actions designed to provide classrooms with ICT infrastructures and educational materials and resources on technology supports will be included, which encourage education to move towards these new media, in which oral explanations, blackboards and paper notes are gradually substituted for images, electronic blackboards and information accessible via the internet. The use of these new types of supports for acquiring knowledge at all levels of education with the direct involvement of teachers will be promoted. Furthermore, the current range of digital educational services will be increased.

Measure 57 Incorporation of ICTs in the classroom as a daily tool in the learning process

To increase the network of centres that incorporate ICTs into education in order to become an essential element in the development of academic training and a daily tool in the learning process.

The whole network of ICT centres will be used, with special emphasis on geographical areas with a low ICT presence and centres with groups at risk of social exclusion. They will be provided with the educational platform of the Regional Ministry of Education to use as a teaching and learning environment that is accessible via the internet and that integrates educational content and resources.

Measure 58 Encouragement to create digital educational material by teachers

To define projects that integrate new teaching technologies and to obtain digital educational materials so that the whole educational system applies them in their teaching processes through draws for incentives for educators and teaching teams.

The measure will also develop actions to promote the benefits of the freeware philosophy in education through draws for materials and digital educational resources.

An educational digital content bank will be developed to make an inventory of ICT resources available to all educational sectors.

Measure 59 **Expansion and promotion of educational digital services**

To expand, develop and standardise the supply of educational digital services designed for the educational community in order to consolidate electronic relations among all members of the community.

The expansion of the current information systems will be considered in order to strengthen the administrative online procedures, the information services, support and service through virtual secretariats at educational centres and digital public services in the field of education.

Furthermore, actions to publicise the possibilities of the new channels in academic, administrative and educational interaction will be defined so that they incorporate digital communications among members of the educational community on a daily basis.

In addition, digital learning training programs will be developed aimed at families and parent associations in order to avoid distancing them from their children's learning in educational centres, to create an essential initial channel for ICTs in Andalusian families and an element that encourages social integration and contribute to computer literacy in Andalusia.

To develop online training, especially through virtual learning platforms, as an element that lowers barriers associated with the acquisition of training, especially in remote rural areas and among the adult population.

Objective. To promote the application of ICTs in higher education

Andalusia is immersed in the process to adapt to the European Space for Higher Education which is based on principles of quality, mobility and free access to inter-university spaces. The application of ICTs play an essential role in this context as facilitating elements in the exchange of knowledge, good educational practices and accessibility to education through diverse channels that are not necessarily based on physical presence.

Measures to increase the range of internet based higher education will be developed. In addition, measures for providing and adapting university infrastructures will be applied, supplying them with wireless technologies that facilitate the development of virtual working environments adapted to the concept of the digital university.

Measure 60 Development of programs for virtual access to higher education

To develop higher education virtual teaching programs as a supplement to traditional education in which learning can occur without teachers and pupils coinciding in either space or time. The pupil will become a knowledge receiver and will play an active role in the learning process (self-training) and the teacher becomes a facilitator for learning.

Distance training programs will be designed and developed for vocational training and university courses supported with cooperative virtual learning platforms.

Measure 61 Support and promotion of virtual campus and digital university models

To adapt Andalusian interuniversity and university equipment and infrastructures to the digital university concept, providing them with wireless solutions to improve accessibility to the network of the university community (students, educational and research staff, and administration and service staff) and to promote the use of ICTs.

Lines of incentives will be established aimed at institutions in order to finance projects to supply, install and implement local area networks through the installation of wireless infrastructures. Financing measures will also be established aimed at the university community in order to facilitate the acquisition of laptop computers with wireless technology.

Furthermore, the construction of virtual campus will be encouraged at universities as an alternative meeting place for teachers and students and as a mechanism for developing digital services through multiple intra and inter-university channels.

Objective. To increase the ICT knowledge of the educational community

The teaching staff must become the principal driver leading the change in teaching and learning processes in educational centres. Educators are becoming the principal asset in the process of applying ICTs to education.

ICT training measures will be developed that accelerate the change towards the digital culture among the educational community and that allow it to progress towards an education based on knowledge.

Furthermore, models for interrelation, collaboration and common working spaces will be promoted, applying the potential of ICTs leading to a closer relationship between teachers.

These measures will be extended to the educational areas of higher education for both universities and vocational training, allowing the spread of knowledge and good educational practices.

Measure 62**Increase in ICT training, collaboration and educational research among the educational community**

To develop training measures related to the use of ICTs aimed at educational professionals and administrative personnel at educational centres, with a view to accelerating the change to a digital culture and encouraging the incorporation of new technologies in educational tasks.

Activities will be carried out in various training formats, although always strengthening the role of teacher centres as points of reference for the integration of ICTs in educational practices.

In the application of ICTs to educational research and collaboration, the creation of networks and groups of education professionals will be considered which communicate and share their experiences, good educational practices, knowledge and educational resources by making use of virtual platforms and collaborative environments.

Measure 63**Bridging the gap between universities and vocational training through ICTs**

To promote models for interrelation and common working spaces that help to bridge the gap between higher education and vocational training professionals in order to create single access spaces for higher education and to strengthen mobility between vocational training and university courses.

Furthermore, the reuse of experiences, the spread of best educational practices, the exchange of knowledge between both areas and the increased use of ICTs between these groups will all be strengthened.

7.4 Strategy Line for Healthcare in the Digital Society

New technologies are creating a society which is increasingly better informed, which participates more closely in the development of the services it receives, and is more demanding of the quality with which these services are provided. It has therefore become necessary to create a framework to enable better use of the information and communication technologies in the health sector, in order to improve the access, quality and efficiency of healthcare services.

One of the principles of the information and knowledge society is to improve the quality of life in a society which must provide healthcare related services and information in an integrated manner so that they can be consulted 24 hours a day, every day of the year. The public expects an integral healthcare system regardless of their geographic, social or cultural circumstances, and they want this healthcare to be participation based using the new methods of relating to the Andalusian Public Health Service (Servicio Sanitario Público de Andalucía, SSPA).

The modernisation of the public health system in Andalusia through ICTs will result in an increase in the quality of service, improved accessibility and the personalisation of healthcare information and services, and consequently in better levels of health and the spread of healthy lifestyle habits among the population. Greater efforts must be made to apply current technological innovations to the healthcare sector, such as virtual reality or artificial intelligence.

A key healthcare development in the information and knowledge society is the participation and involvement of medical professionals; these professionals will now be a driving force in digital healthcare, and must rise to the challenges posed by the new technologies so they can add to their skills and incorporate them into their daily routines.

Priority must be given to the ability to transfer, share and create knowledge, thereby ensuring the spread of good healthcare habits through collaborative and virtual work environments. It is also vital to apply state-of-the-art simulation and teaching technologies in the creation of new methods of training healthcare professionals.

In order to provide an integral healthcare system regardless of geographic, social or cultural obstacles, a new model for interacting with the public will be created which combines the services of information, interaction and participation: ANDALUSIA HEALTH 24 H (SALUD ANDALUCÍA 24 H), which will improve the quality of service and the accessibility of healthcare services, and will enable the system to provide immediate and personalised responses, tailored to citizens' specific characteristics and needs.

Objective. To extend the use of ICTs in healthcare management and improve service quality

The progressive implementation of new technologies in the Andalusian healthcare sector have contributed to an improvement both in the quality of the service and the work environments of healthcare professionals. The rapid evolution of ICTs offers new potential and opportunities which must be seized in order to continue progressing the modernisation of the healthcare system.

Measures will be designed to improve healthcare management by extending the DIRAYA corporate information system, and to establish a new integrated framework for relations with the public. In addition, new technological tools will be implemented to enable collaborative work between professionals in the SSPA which allow them to share experiences and good medical practices, thereby increasing service quality.

Measure 64 Developing strategies for medical attention in digital healthcare

To develop digital healthcare strategies via the corporate support information system, DIRAYA, in order to ensure easy access to healthcare services and benefits by citizens; to guarantee the continuity of service at all levels (primary, specialist, emergency services and home visits); to provide healthcare professionals with support systems for clinical decisions and to facilitate strategic decision taking procedures on healthcare management and service.

The Digital Healthcare Strategy will include extending DIRAYA to all levels of service and integrating all the data on patients' medical treatments into a digital health record, making it possible to access a patient's medical information from any health centre in Andalusia.

Corporate tele-medicine and tele-service strategies will be designed so that the system can make use of the new technological solutions to enable it to respond to the needs identified by the organisation and its professionals, thereby adding to the value of the SSPA and improving service quality.

Measure 65 Integrating information, interaction and participation services in the healthcare sector: SALUD ANDALUCÍA 24 H

To define, develop and implement the new integrated framework for relations with the public in order to take a qualitative leap towards multi-service and multi-channelling, in order to be able to provide information, services and health advice 24x7. The Healthcare Information Management Centre will be responsible for both integrating and releasing healthcare information, with the maximum quality and according to citizens' needs.

In addition to extending the range of information and administrative services available and the diversity of communication channels, citizens will be encouraged to participate in healthcare issues through the creation of organisations such as the Electronic Citizens' Forum and the Citizens' Expectations Bank in the areas corresponding to healthcare services.

Measure 66**Developing modernising and innovative elements in training and the work environment of SSPA professionals**

To modernise and introduce innovations into the training methods, work environments and methods of SSPA professionals in order to promote the spread and application of optimum healthcare practices and to encourage collaboration between professionals.

Development and training courses will be provided for professional and healthcare managers in technical matters, as well as in relationship and social skills. This will be done with state-of-the-art training methodologies and using the latest technologies for simulation and advanced training of professionals.

Activities will also be designed for new work environments which will use new technologies for transmitting information and knowledge.

Measure 67**Healthcare innovation through ICTs**

To apply ICTs as innovating elements in order to obtain a healthcare model in 2010 that uses the latest technologies in the healthcare sector. The aim is to obtain a significant increase in the quality of medical consultations, and the clinical and therapeutic treatments available to citizens and healthcare professionals.

The projects for innovation in healthcare include the application of virtual reality to the fields of surgery and diagnosis, the development of knowledge management systems and artificial intelligence to assist in decision making processes and administrative management, and finally the application of I.T. mechanisms and devices which give mobility to the DIRAYA and the optimisation of home visit procedures.

7.5 Strategy Line for Justice in the Digital Society

As mentioned earlier, the incorporation of new technologies into the area of relations between the public administration and citizens represents a new model that transforms everyday working processes. The legal sphere is no exception.

The Ministry of Justice's Plan for Judicial Transparency of November 2005 establishes that progress must be made towards ensuring an intelligible, transparent, comprehensible legal system whose hallmarks are respect for the citizen, speed and advanced technology.

Citizens and their legal representatives are demanding increasing faster legal procedures, and the option of using the legal system outside the traditional legal centres and opening hours. The public perception of a modern and transparent legal system is unequivocally based on the application of new technologies and the incorporation of innovative elements in relations between citizens and the various legal agents involved.

The technologies available today, for example, make it possible to submit documents over the internet, notify the relevant parties of the dates of hearings using online communications, and to increase the use of video-conferencing in the case of people living in remote areas or who have some kind of dependency and/or physical disability.

Objective. To use new technologies as enabling elements in the creation of a fast and comprehensible legal system for citizens

Information and knowledge society offers numerous opportunities both for increasing transparency and access to legal information, making the legal system easier to use by

citizens and for updating the organisation and interaction systems between judges, lawyers, solicitors and other elements in the legal system.

In order to achieve these goals, the actions taken will focus on installing I.T. infrastructures and systems designed to speed up legal procedures, and to encourage cooperation between the different representatives in the legal system so as to progress towards a “paperless justice”.

Measure 68**Increasing the technological and telecommunications infrastructure in Andalusian judicial entities**

To increase the presence of I.T. and telecommunications in all judicial entities so that they are fully prepared to meet the challenge of providing legal services in the information society. Particular attention will be given to the I.T. systems used to modernise magistrates' courts, in collaboration with the local authorities.

The new infrastructures must allow the possibility of a centralised structure based on telecommunications and I.T. systems, which will allow interaction with agents in the legal system via the new online channels.

Measure 69**I.T. models that use the new digital channels to speed up procedures between agents in the legal system**

To develop the ADRIANO I.T. system in order to take maximum advantage of the potential of the internet and communications channels, in order to increase the transparency and availability of legal information, speeding up legal procedures and advancing towards a “paperless justice”.

Steps will also be taken to set up modern collaboration systems between the different agents in the legal system so that information can be exchanged securely by online means.

Continued emphasis will be placed on increasing the use of digital recording and storage systems for hearings, and on the generalised use of videoconferencing to avoid unnecessary travel by parties required to appear in court.

Measure 70**Digitalisation and electronic management of legal documents**

Digitalisation and electronic management of the documents generated by judicial entities in order to progress towards paperless systems for the management of legal procedures. The electronic documents and online processes used as transmission channels must be fully guaranteed and legally valid.

New information systems will be designed which permit the digitalisation and storage on electronic support of legal documents and records, as well as the development and implementation of information systems for managing this data by online means, and the electronic exchange of legal information between the different judicial entities to make use of the resulting statistical information.

7.6 Summary of Objectives and Measures in the Area of Intelligent Administration

Strategy line	Objective	Measure
Intelligent administration management model for the Andalusian regional government	To structure the processes of the Andalusian regional government to provide quality services according to the demands and possibilities of the information society.	Measure 43. Simplification of procedures of the Andalusian regional government aimed at the “paperless administration” model. Measure 44. Quality guarantee for digital service provision. Measure 45. Integration of citizen support services through multi-channel management models. Measure 46. Integral knowledge management model of the Andalusian regional government.
	To prepare the I.T. systems and resources required to deal with the increase in public services in a coordinated and efficient manner.	Measure 47. Adaptation of the ICT management model of the Andalusian regional government. Measure 48. Promotion of open standards for interoperability within the Andalusian regional government and in citizen relations.
	To promote digital culture within the Andalusian public administration.	Measure 49. ICT qualification of public employees. Measure 50. Development of the virtual working environment at the Andalusian regional government.
Digital public services	To encourage the use of digital public services in Andalusian public administrations.	Measure 51. Supply of electronic procedures and services aimed at citizens and companies. Measure 52. Definition and development of the digital town council model. Measure 53. Development of digital markets for public contracts for goods and services of the Andalusian regional government.
	To increase cooperation and coordination via ICTs between the different public administrations.	Measure 54. Guarantee of interoperability between systems of the Andalusian public administrations. Measure 55. Transfer of experiences and good practices in ICT use in Andalusian public administrations. Measure 56. Incentives for technological innovation and modernisation projects in Andalusian local administrations.

Strategy line	Objective	Measure
Education in the digital society	To develop ICT-supported education.	Measure 57. Incorporation of ICTs in the classroom as a daily tool in the learning process. Measure 58. Encouragement to create digital educational material by teachers. Measure 59. Expansion and promotion of educational digital services.
	To encourage the application of ICTs in higher education.	Measure 60. Development of programs for virtual access to higher education. Measure 61. Support and promotion of virtual campus and digital university models.
	To increase ICT skills among the teaching community.	Measure 62. Increase in ICT training, collaboration and educational research among the educational community. Measure 63. Bridging the gap between universities and vocational training through ICTs.
Healthcare in the digital society	To extend ICT use to healthcare management and service quality.	Measure 64. Developing strategies for medical attention in digital healthcare. Measure 65. Integrating information, interaction and participation services in the healthcare sector: SALUD ANDALUCÍA 24 H. Measure 66. Developing modernising and innovative elements in training and the work environment of SSPA professionals. Measure 67. Healthcare innovation through ICTs.
Justice in the digital society	To promote the general use of new technologies as enabling elements in the creation of a quick and comprehensible legal system for the benefit of citizens.	Measure 68. Increasing the technological and telecommunications infrastructure in Andalusian judicial entities. Measure 69. I.T. models that use the new digital channels to speed up procedures between agents in the legal system. Measure 70. Digitalisation and electronic management of legal documents.

7.7 Summary of Indicators in the Area of Intelligent Administration

Indicator	Description	Current value	Target value
1. Percentage of people who have conducted some procedure electronically with the Andalusian regional government.	Percentage of people over 14 who have conducted some procedure electronically with the Andalusian gov.	N/A (Indicator Analysis Project)	Indicator Analysis Project
2. Percentage of initiated procedures which are channelled electronically compared to total initiated procedures.	Percentage of initiated procedures which are channelled electronically compared to total initiated procedures.	N/A (Indicator Analysis Project)	Indicator Analysis Project
3. Public employees who have received online training courses.	Public employees who have received online training courses.	N/A (Indicator Analysis Project)	50.0%
4. Andalusian regional government employees with virtual work environment (VWE).	Andalusian regional government employees with virtual work environment (VWE).	N/A (Indicator Analysis Project)	80.0%
5. Percentage of procedures fully available online.	Percentage of procedures fully available online.	N/A (Indicator Analysis Project)	80.0%
6. Percentage of internet users who deal electronically with public authorities.	Percentage of internet users (people who have logged on to the internet in the last three months) who use internet for dealing with public authorities.	48.2%	90.0%
7. Percentage of companies and organisations who use the internet for dealing with public authorities.	Percentage of companies and organisations with internet connection that use this method of dealing with public authorities.	57.7 %	95.0%
8. Percentage of education centres with broadband internet connection and ICT equipment in the classrooms.	Percentage of schools with broadband internet connection and ICT equipment in classrooms.	20.0%	100.0%
9. Percentage of the official non-university curriculum based on digital education content.	Percentage of the official non-university curriculum based on digital education contents.	N/A (Indicator Analysis Project)	100.0%
10. Amount of time using ICT equipment in teaching hours.	Amount of time using ICT equipment in teaching hours.	N/A (Indicator Analysis Project)	50.0%
11. Percentage of families who use internet to communicate with the education centre.	Percentage of families with children in full-time schooling who use the internet to communicate with the school.	N/A (Indicator Analysis Project)	50.0%
12. Percentage of private individuals who have used the internet for learning and teaching purposes.	Percentage of individuals who have used the internet for learning and teaching purposes within official educational programmes.	7.9%	30.0%

Indicator	Description	Current value	Target value
13. Percentage of subjects in university degree courses which may be taken online.	Percentage of subjects in university degree courses which may be taken online.	N/A (Indicator Analysis Project)	25.0%
14. Percentage of teachers with technological and methodological training in the use of ICTs.	Percentage of university and non-university teachers with technological and methodological training in the use of ICTs.	N/A (Indicator Analysis Project)	100.0%
15. Percentage of internet users who use the internet for making medical appointments.	Percentage of Internet users (people who have logged onto the internet in the last three months) who use the internet for making medical appointments.	1.1%	Indicator Analysis Project
16. Percentage of courts with broadband internet connection.	Percentage of courts with broadband internet connection.	N/A (Indicator Analysis Project)	Indicator Analysis Project

8 INFRASTRUCTURE AND DIGITAL CONTEXT

The existence of appropriate infrastructures which provide both quality and security, and the availability of attractive and user-friendly content and services are essential elements for the consolidation of the new context of information and knowledge society.

The citizens of Andalusia have a right to have access to a quality broadband connection from anywhere in Andalusia. In reality, however, people who live in urban areas can choose from an enormous range of access options offered by a variety of providers, while the rest of the population has trouble obtaining any, or at best depends on a single operator for their area. Efforts must be continued to achieve digital cohesion in Andalusia and to ensure the provision of general access to broadband services.

According to the European Commission, “... *The advantages of broadband are such that the impossibility of access to it is a problem which requires an urgent solution*”.³³

The last decade has seen the emergence of mobile communications as the technology which has had the greatest impact on the way people and businesses communicate and exchange information. The arrival of wireless access technologies and an improvement in the coverage of current mobile telephony networks will be the basis for the development of new broadband mobile services.

Infrastructures alone are not enough without the services and contents which motivate the public to use the new technologies and allow them to exercise their basic right to information, education and culture. The inclusion of material showcasing Andalusia's vast heritage on the net will lead to increased benefits for the culture, environment, tourism and economy of the Andalusian region.

In the words of the secretary-general of the International Telecommunication Union, “... *the value of the Internet resides in the value of the information created and consumed by the users rather than in the infrastructure itself*”.³⁴

This area of action is divided into three strategy lines with objectives and measures which have an impact on the infrastructures themselves: the strategy line for **Broadband Telecommunications Infrastructures**; the strategy line for **Digital Security** relating to the security of networks and their use; and the strategy line for **Digital Content** regarding the network content itself and the use of digital technologies as a new channel for content diffusion.

³³ Communication from the Commission to the Council, the European parliament, the European Economic and Social Committee and the Committee of the Regions report. March 2006

³⁴ Address by Yoshio Utsumi at the World Summit on Information Society. Tunis 2005

Horizon 2010

The internet is far-reaching, capable, flexible and secure

Although avoiding the digital divide is still a constant matter of concern, great steps forward have been made in Andalusia in recent years. Now all our towns provide access to broadband services in equal conditions of quality and affordability. Plans for finalising coverage in some smaller population centres by means of collaboration between the public and private sectors are already in an advanced state. Whatever the technology (fibre optic, cable, wireless,...), you can be connected at all times wherever you are in Andalusia.

Service convergence has become the norm in the world of telecommunications. Any Andalusian family can have a multi-use device which enables them to enjoy fixed and mobile telephony services, internet navigation, e-mail, high-definition television reception both inside and outside the home, in the same package and all on the same bill.

Everybody, both individuals and businesses, is now aware of the importance of preventive security measures and these have now been incorporated into computer equipment. Navigating the net today is more secure.

The “analogue blackout” has occurred as predicted. Digital terrestrial television is now within reach of all Andalusian residents, and provides a wide range of content and services, many of these generated at a regional or local level. Work is well underway on the revolutionary new high-definition television.

Spanish has taken its rightful position as a language on the net, and this has contributed substantially to the remarkable boom in sites and content which originate in Andalusia.

8.1 Strategy Line for Broadband Telecommunications Infrastructures

Developing the full potential of the information and knowledge society is only possible with communications infrastructures which guarantee universal access for the whole of the Andalusian population. To be able to use the services offered on the net, it is absolutely essential that these be high speed and of sufficient quality; that is to say, they must be "broadband networks". It is therefore important to establish a broadband telecommunications strategy for Andalusia which will guarantee the availability and scalability of these infrastructures throughout the whole region.

Guaranteeing the quality of the networks and the provision of adequate protection mechanisms for their users is a matter of ongoing concern which must be resolved promptly so that Andalusian society can take its place in the information and knowledge society.

The arrival of wireless networks and the latest generations of mobile telephony have brought very specific advantages (flexibility, freedom and economy) which make them especially interesting for extending the access infrastructures to those areas where it is impossible to deploy fixed networks or which do not reach profitability thresholds. There is no doubt that the concept of universal service will evolve in the coming years to include aspects of mobility and ubiquity.

The corporate network of the Andalusian regional government is the largest communications network in Andalusia, and its availability in all public centres has had a considerable knock-on effect in bringing quality communications to most of the towns in the Andalusian region. New services now need to be rolled out.

There is awareness in Andalusia of the technological trends taking place on the internet, and particular attention will be given to developing standards to be adopted for the new NGN (next generation network). This will make it possible to implement a policy which ensures both a quality service, and security at the network and user levels.

Objective. To extend the availability of fixed broadband access to all homes and businesses

Internet access via high-speed lines is now no longer merely an option but a necessity. It is vital to stimulate the market and create the conditions for the development of broadband networks based on the principles of fairness and territorial cohesion, the pre-eminence of private initiative in free competition, coordination on several levels between the different public administrations, and technological neutrality.

Measures will be taken to encourage and coordinate with the operators in the extension of their infrastructures for broadband access and the regulations will be changed

to facilitate their deployment. Access will be provided under equal conditions via the Andalusian telecommunications network's guarantee of neutrality.

Measure 71 **Expansion of the infrastructure for broadband access**

To encourage the expansion of the infrastructures necessary for broadband access throughout the whole of Andalusia, using strategies which may vary according to the territory, in order to increase the availability of these services to Andalusian citizens and companies who do not currently have access. Priority will be given to private intervention.

This will be done by creating initiatives to encourage and coordinate with the operators in the expansion of their infrastructures throughout Andalusia, by collaborating with the Spanish central administration in its programmes on a national level and by furthering local projects which open up new access networks in the remoter towns and villages, using existing or future transport networks.

Measure 72 **Neutrality of the Andalusian telecommunications network**

To guarantee the neutrality of the telecommunications network which provides service to the different access operators, with a sufficient bandwidth to cover Andalusia's current and future requirements for information transmission, and which ensures territorial equality and universal access to advanced online services. This will contribute to the creation of a telecommunications system which connects the region internally, and serves to maintain territorial, economic and social cohesion.

Efforts will be made to reuse any already existing telecommunications transport infrastructures in its design and deployment as far as possible. A system of regional centres, the networks of medium-sized cities and rural centres will be used as the basic elements on which to base the topology of this transport network, which must be linked with the main interconnecting points on the national and international high-capacity networks.

Measure 73 **Regulatory changes to facilitate the deployment and expansion of telecommunications networks**

To modify the current regulations governing the installation of telecommunications infrastructures in Andalusia in order to facilitate their deployment, and to establish the necessary control measures to ensure compliance with these regulations.

These regulations will affect the areas of urban planning, occupation of the public domain and shared use and location of telecommunications facilities, and will be developed under the current town planning legislation in Andalusia, taking into account any new functions which may be transferred in this area as a result of the reform of the Andalusian Autonomy Statute. Special emphasis will be placed on aspects relating to the problems of telecommunications infrastructures using the radio electric spectrum.

The regulation will be changed as necessary in order to define the basic infrastructure for the digital household and to guarantee compliance with the current legislation on common telecommunications infrastructure in buildings.

Objective. To progress towards ubiquitous access to broadband networks

Despite all the efforts being made to extend fixed broadband networks, there are situations in which it is impossible to provide a satisfactory solution to existing demand. It is therefore essential to enable the adequate deployment of networks based on wireless technologies in order to reach places where fixed networks either cannot be deployed or are unprofitable.

The use of mobile telephony is widespread throughout the population of Andalusia, and the new technological advances in the latest generation of mobiles represent new opportunities for using this channel to provide services to a large number of Andalusian residents.

Actions will be put in place to encourage the creation of public and private projects deploying wireless systems for general use, and to stimulate the supply of new mobile telephony services.

Measure 74 Encouraging deployment of wireless systems for general use

To encourage wireless access systems for general use for public-service systems, which will follow the recommendations of the CMT, and systems for private or community use. The objective is to increase the supply of available accesses and to encourage the creation of services which make full use of these technologies.

Other actions that will receive support include the creation of private and public projects at the local level which deploy wireless accesses, the publication of a register of the points of wireless access for general use available in Andalusia, raising awareness of the advantages of wireless networks and their applications in communities and businesses, and developing new solutions and services on current wireless or new-generation technologies (Wifi, Wimax, 3G).

Measure 75 Encouraging the expansion of mobile telephony infrastructures and services

To encourage the expansion of mobile telephony infrastructures with particular emphasis on technologies which permit access to data using comparable speeds to those provided by broadband networks. The aim is to make mobile telephony services available to all Andalusian citizens, to move towards better-quality voice communications and greater speeds of data access, and to be able to use the new services based on the use of mobile telephony.

A study will be made into the possibility of creating a roaming agreement between the different operators in areas of low population density. This will enable any existing coverage, with at least one operator in service, to be shared by all operators.

Also studied will be the means of encouraging the availability of other quality services which make use of the technological possibilities offered by mobile telephony, including access to data services, instant messaging, geographic positioning, online payment, etc.

Objective. To improve the quality of the telecommunications networks

Andalusian society has an ongoing requirement for new high-performance digital services with the appropriate levels of quality and security. It is essential to develop communications networks which address these needs, and to establish mechanisms for the protection of users' rights.

The planned measures are intended to encourage technological innovations and projects designed to improve the capacity and availability of current telecommunications networks. Measures will also be taken to guarantee security and limited environmental impact in the deployment of wireless and mobile networks.

Measure 76 Increase the capacities of telecommunications networks

To carry out actions designed to increase the capacities of the telecommunications networks by ensuring that the infrastructures have the right dimensions to guarantee the broadband requirements, response time and quality of internet connections demanded by the public and the business community in Andalusia so that our region can take its place in the knowledge society.

Actions will be taken which favour neutral exchange nodes for Andalusian traffic, and a map will be created to show the infrastructures and coverage of the telecommunications networks.

An advisory office will also be made available to local organisations in order to offer advice on the correct deployment and regulation of the telecommunications infrastructures under their responsibility.

Measure 77 Mechanisms for control and complaints by users of the telecommunications networks

To provide adequate control and complaint mechanisms for users of the telecommunications networks to ensure compliance with the regulations governing the services in the information and knowledge society, and the rights of individuals and companies.

Among other measures, a mediating agency for the telecommunications sector will be set up as a delegate instrument of the Andalusian Consumer Council as a forum for participation and consensus between the telecommunications sector, consumers and the public administration.

Measure 78 Guaranteeing security and limited environmental impact of wireless and mobile networks

To guarantee the security and limited environmental impact of wireless and mobile networks in the deployment of public communications infrastructures which make use of radio electric space.

The main actions planned include the development of regulatory actions which enable the deployment and extension of these networks, also addressing quality and security requirements and establishing control and inspection mechanisms to ensure compliance with the current legislation on radio electric emissions.

Measure 79 Encouraging technological innovation to improve telecommunications networks

To encourage technological innovations designed to improve the transport and access networks of the telecommunications services, with particular emphasis on broadband technologies and technologies which use radio electric space, in order to identify in advance the best options and to develop new and better infrastructures.

Agreements and arrangements will be signed between operators and the Andalusian Technological Corporation (Corporación Tecnológica Andaluza) for the creation of pilot projects in different locations in Andalusia and for developing R&D+i initiatives which stimulate the growth of new infrastructures with broadband, wireless or mobile access. Special attention will be given to those technologies which optimise the use of the capacities of the existing broadband (e.g. ADSL 2+, BDSL), wireless (e.g. WIMAX, UWB) or mobile networks (e.g. HSDPA, 4G) as well as to technologies which give access to new services through alternative devices (e.g. DVB-H). Special emphasis will also be placed on developing standards for the new network (NGN).

Local administrations will also be encouraged to participate in the development and implementation of technical innovation projects.

Objective. To make the Andalusian regional government's corporate networks a leading reference for the region's telecommunications infrastructure

The creation of the Andalusian regional government's corporate network has made it possible to interconnect most of the centres and agencies which depend on the Andalusian regional government, and to evolve programmes such as the computerisation of the legal system, telemedicine, or the implementation of knowledge society technologies in education centres throughout the region.

It is now necessary to provide new features, such as services for localisation and mobility, remote access etc., and to set up interoperability solutions with other administrations, making it possible to offer services which are coordinated between the various public administrations in Andalusia.

Measure 80 New services in the Andalusian regional government's corporate network (Red Corporativa de la Junta de Andalucía, RCJA)

New facilities which enable the provision of better services to users of the RCJA.

In the coming years, advances will be made in the following lines of action, including:

- Improvement in localisation and mobility services.
- Direct management of certain functions by users.
- Remote and transparent accessibility to the corporate network, by any method.
- Private mobile telephone services (digital trunking) for use by the Andalusian public emergency services.
- Design of the plan for migration to IPV6.

Measure 81**Encouraging the creation of interoperability solutions with the services of other public administrations**

To encourage the creation of interoperability solutions with the services of other public administrations in order to establish connections between the different technological infrastructures of the different public administrations in Andalusia which allow and safeguard the communication of information between them, the interoperability of services and the exchange of applications, in the interests of providing an integrated offer of public services to individuals and businesses.

The extended interconnection node of the administrative extranet (Nodo Extendido de interconexión de la Extranet Administrativa, NEREA) will be established as a point of interconnection between the Andalusian regional government and the Andalusian local authorities with the National Administrative Intercommunication Network (Red Estatal de Intercomunicación Administrativa, SARA), and agreements will be signed with the Spanish central administration and the local authorities to further the design of provincial communications networks.

8.2 Strategy Line for Digital Security

The full incorporation of Andalusian citizens and businesses into the information and knowledge society must involve a guarantee of privacy in their access to public communications networks. An urgent priority is to achieve a secure network which warrants the trust in the use of online services and electronic payments.

The general availability of secure digital identification systems today represents an opportunity to increase the confidence of Andalusian companies in electronic business channels. Similarly, the arrival of the electronic ID card will also mean that the Andalusian public will become familiar with the mechanisms of digital security and privacy, which will lead to an increased use of a whole range of online services.

Objective. To improve business and public confidence in electronic communications

The perception, training and awareness of the public and businesses in the importance of security in electronic communications fall far short of the actual possibilities offered by currently available technological mechanisms.

Steps will be taken to increase I.T. security practices in companies, and the use of e-ID and digital certificates will be encouraged as a secure, unique, efficient and practical means of identification in electronic communications. Special emphasis will be placed on encouraging citizens to adopt security practices and responsible use of the net, with particular attention on the use of the new technologies by young people.

Measure 82 Increasing the use of digital identification

To increase the use of digital ID and digital certificates by citizens and businesses in order to encourage confidence in online media and the responsible use of new technologies.

This will involve collaborating with the Spanish central administration to increase the use of e-IDs, and the continuing establishment of agreements with the various public and private certification agencies, as well as arrangements with other organisations (local administrations, universities, trade associations, etc) to collaborate in extending the use of certificates.

Other measures will include reinforcing digital identification with the necessary infrastructures for issuing certificates of attributes and of legal entity, and extending a system of third-party representation.

The use of e-ID as an enabling element will be incorporated into both the Andalusian digital public services for citizens and businesses, and also into the Andalusian regional government's corporate information systems, and public employees will be provided with the necessary infrastructure for its use.

Experiments will be set up to test electronic identification of citizens using the e-ID in electoral processes.

Measure 83 Encouraging security practices and responsible use of the net among citizens

To increase the use of security mechanisms and practices on the net by citizens in order to guarantee the privacy and integrity of information and to avoid impersonation. This will also have the effect of improving the degree of trust in the use of ICTs by Andalusian citizens.

Online service providers will be encouraged to adopt a "public badge of trust in the services of information and e-commerce society" whereby they agree to follow specific codes of good conduct.

Furthermore, actions will be designed to prevent risk and increase security in the internet habits of young people, including awareness campaigns to promote sensible use of the medium, the creation of specific spaces and encouraging the use of security and protection systems which are able to detect unsuitable contents.

The advantages and methods of accessing the internet securely and privately will be highlighted in specific information campaigns.

Measure 84 Disseminating the use of I.T. security practices in businesses

To enhance the use of I.T. security mechanisms by disseminating good practices, so that Andalusian businesses increase their trust in ICTs and incorporate these technologies into their business processes.

Information will be provided on basic risk management and on compliance with the legal requirements contained in Organic Law 15/1999 on personal data protection.

Emphasis will also be placed on the options available for protecting companies' internal networks and equipment, and on methods for avoiding infection or access by unauthorised parties.

8.3 Strategy Line for Digital Content

In this digital society, the availability of all the information on Andalusia, its values, customs, and its natural, tourist and cultural resources is absolutely crucial. Anything which is not present on the internet may go completely unnoticed.

The current presence of Andalusian-themed content on the internet is relatively modest, and a special effort must be made to encourage the development of new content both by the public administrations and by providing incentives for the creation of local content by private individuals, associations and businesses in Andalusia.


Andalusia's resources and heritage are not yet present and generally accessible in an integrated manner on the internet. Making Andalusia's rich environmental, cultural and social heritage available via virtual access is a matter of vital importance.

The appearance of digital terrestrial television (DTT) represents a new channel of access to the new digital services. The main contents and services must be created and adapted to this new format to make maximum use of its advantages of maximum coverage, user-friendliness and free access.

Objective. To extend digital terrestrial television (DTT)

2010 marks the end of analogue television. On this date, not only must the infrastructures be in place to allow access to DTT from all homes, but the audiovisual sector must also be capable of offering quality services and contents.

Steps will be taken to extend DTT coverage for public channels throughout Andalusian territory and to publicise the advantages of this new medium. The Andalusian audiovisual sector will also be encouraged to develop specific content for this new medium.

Measure 85	Encouraging acceptance of digital terrestrial television as a new channel in information society	
	<p>To encourage the acceptance of digital terrestrial television by citizens as a new mass communication channel enabling access to the whole range of services available in the information and knowledge society.</p> <p>Specific actions will be taken to increase the infrastructures for the diffusion of public DTT channels with a regional bias in those geographic areas of Andalusia where reception is difficult and where there is significant demand.</p> <p>An advisory system will be maintained to provide information on reception levels and coverage of public regional and local channels, authorised installers, any changes necessary in the infrastructure of buildings and homes for the reception of digital terrestrial television, etc.</p>	

Measure 86 Encouraging the creation of content and services for digital terrestrial television

To encourage the creation of new content and services for digital terrestrial television designed to increase the appeal of this communications medium among citizens.

This measure will support the creation of interactive content and services which are specifically designed for digital terrestrial television by companies in the Andalusian audiovisual sector. Experiments will be conducted so that the content and services of the Andalusian public administrations can be provided through this new channel.

Objective. To integrate, maintain and publicise Andalusia's cultural, environmental and social resources

Andalusia's wide range of resources and assets are not yet accessible to the wider public by online means. Digitalised content is available to the public administrations in Andalusia, but more effort must be made to organise and integrate this content so it can be presented in a structured and easily accessible way to enable its dissemination over the internet.

Measures to be taken include the creation of a digital bank which integrates all the different elements of our Andalusian heritage, support for local administrations in the digitalisation of their heritage, and encouraging a more widespread knowledge of Andalusia's environmental and primary sector resources and information.

Measure 87 Creating the content bank for Andalusia's heritage and culture

To create an integrated bank of digital contents so that Andalusia's vast range of heritage and resources can be made available to the public. This measure will encourage dissemination and awareness of Andalusia's heritage and will make it extremely easy to locate and access content which was either previously unavailable in a digital format, or had restricted access or were dispersed.

The contents to be digitalised and catalogued come from different sources, and solutions must therefore be provided to make all the information relating to Andalusia available in an integrated and uniform way. The different spheres of action include: Andalusian monuments, archives and museums, audiovisual bank for social history, historic, archaeological and tourist resources, etc.

Measure 88 Encouraging digitalisation of the heritage controlled by Andalusian local administrations

To encourage the digitalisation of the heritage under the control of Andalusian local administrations and to establish specific actions to provide incentives for projects for cataloguing and publicising these assets, as well as for integrating them into the content bank of Andalusia's heritage and culture and for granting specific I.T. utilities for the management of the assets themselves, their documentation and their publication.

The different spheres of action include: monuments, archives and museums, historic, archaeological and tourist assets, routes and itineraries, etc.

Measure 89 Consolidating and disseminating environmental content and information

To consolidate and make the information on Andalusia's environment available to the public in order to develop citizens' awareness and commitment in matters relating to their environmental heritage. The information must be offered in a homogeneous and integrated manner and with sufficient guarantees of quality.

Widespread knowledge of Andalusia's environmental resources and information will be advanced by the consolidation, expansion and improvement of the Andalusian Environmental Information Network (Red de Información Ambiental de Andalucía, REDIAM), which will join forces with the centres in the Andalusian region which issue this environmental information (research institutions, technicians and managers of public resources) to coordinate the interconnection with environmental networks from other responsible areas.

The networks for measuring and monitoring environmental parameters will be implemented or improved, and the online network providing environmental information will be expanded. Improvements will also be made in the ICT infrastructures in all the peripheral public centres with responsibilities in the sector.

Measure 90 Consolidating and disseminating knowledge and information on agriculture, farming, fishing and the rural sector in Andalusia

To integrate and make information on the current situation of the agriculture, farming, fishing and the rural sectors publicly available in order to provide, increase and consolidate any knowledge which may lead to improvements in the sustainability and competitiveness of Andalusia's primary sector.

To achieve this, solutions will be developed which combine information on this sector in a uniform and integrated manner and with guaranteed quality (updates, accuracy, compatibility with other sources, etc.), in accordance with EU requirements regarding the management and control of agricultural aid, among other aspects.

Objective. To increase the presence of content by Andalusian authors or on Andalusian themes on the internet

The participation of citizens in the creation of web pages will serve as an enabling element to encourage their incorporation into the digital world, and will have a direct effect on social well-being and equal opportunities. Public content, generally available to businesses and private individuals in formats which are easy to integrate, represent an excellent starting point for developing a new business model based on the creation and commercialisation of new services.

The steps to be taken are designed to encourage the creation of content by citizens themselves and to support initiatives by companies which create their own digital content or through public-private sector collaboration.

Measure 91 Encouraging the public to create internet content

To encourage the creation of internet content by the public in order to significantly increase the amount of content developed by Andalusian citizens and which are of interest and use to them.

Support will be given to the creation of educational content and content on local heritage relating to culture, gastronomy, crafts, tourism, etc., and the necessary information and tools for designing these contents will be distributed among citizens through the public internet access centres.

Support will also be given to the creation of an encyclopaedia specifically on Andalusian contents ("Andalupedia") which can be freely accessed and edited, and which will be maintained by citizens; as well as a "Citizens' Library" for the publication of thorough studies and research projects.

Measure 92 Encouraging Andalusian companies to market quality digital content

To encourage the marketing of quality digital content by Andalusian companies and to stimulate the creation of added-value services based on existing contents through public-private sector collaboration. This will serve as a basis for the development of new business sectors in the area of content, which may have a positive impact on the creation of wealth and employment in Andalusia.

Support will be given to the creation and marketing of audiovisual work in digital format, and Andalusian companies will be encouraged to participate in national and European innovation programmes designed to create value based on digital content (such as eContentPlus).

8.4 Summary of Objectives and Measures in the Area of Infrastructure and Digital Context

Strategy line	Objective	Measures
Broadband telecommunications infrastructures	To extend the availability of fixed broadband access to all homes and businesses.	Measure 71. Expansion of the infrastructure for broadband access. Measure 72. Neutrality of the Andalusian telecommunications network. Measure 73. Regulatory changes to facilitate the deployment and expansion of telecommunications networks.
	To progress towards ubiquitous access to broadband networks.	Measure 74. Encouraging deployment of wireless systems for general use. Measure 75. Encouraging the expansion of mobile telephony infrastructures and services.
	To improve the quality of the telecommunications networks.	Measure 76. Increase the capacities of telecommunications networks. Measure 77. Mechanisms for control and complaints by users of the telecommunications networks. Measure 78. Guaranteeing security and limited environmental impact of wireless and mobile networks. Measure 79. Encouraging technological innovation to improve telecommunications networks.
	To make the Andalusian regional government's corporate networks a leading reference for the region's telecommunications infrastructure.	Measure 80. New services in the Andalusian regional government's corporate network (Red Corporativa de la Junta de Andalucía, RCJA). Measure 81. Encouraging the creation of interoperability solutions with the services of other public administrations.
Digital trust	To improve trust by businesses and the public in electronic communications.	Measure 82. Increasing the use of digital identification. Measure 83. Encouraging security practices and responsible use of the net among citizens. Measure 84. Disseminating the use of I.T. security practices in businesses.
Digital contents	To expand digital terrestrial television (DTT).	Measure 85. Encouraging acceptance of digital terrestrial television as a new channel in information society. Measure 86. Encouraging the creation of content and services for digital terrestrial television.

Strategy line	Objective	Measures
Digital content	To integrate, maintain and disseminate Andalusia's cultural, environmental and social resources.	Measure 87. Creating the content bank for Andalusia's heritage and culture. Measure 88. Encouraging digitalisation of the heritage controlled by Andalusian local administrations. Measure 89. Consolidating and disseminating environmental content and information. Measure 90. Consolidating and disseminating knowledge and information on agriculture, farming, fishing and the rural sector in Andalusia.
	To increase the presence of contents on the internet by Andalusian authors or on Andalusian themes.	Measure 91. Encouraging the public to create internet content. Measure 92. Encouraging Andalusian companies to market quality digital content.

8.5 Summary of Indicators in the Area of Infrastructure and Digital Context

Indicator	Description	Current value	Target value
1. Population with access available via broadband networks.	Percentage of people between 16 and 74 who live in a household which is able to subscribe to an internet connection with broadband technologies.	N/A (Indicator Analysis Project)	100%
2. Broadband lines subscribed per 100 inhabitants.	Broadband lines subscribed per 100 inhabitants resident in Andalusia.	10.0	20.0
3. Wireless internet access points available to the public per 10,000 internet users.	Wireless internet access points available to the public per 10,000 internet users. Internet users are understood to be people who have logged on to the internet in the last three months.	0.6	1.2
4. Population with access to internet speeds of over 20 Mbps.	Percentage of people between 16 and 74 who live in a home which is able to subscribe to an internet connection with broadband technologies with a speed equal to or greater than 20 Mbps.	N/A (Indicator Analysis Project)	40.0%
5. Companies with over ten employees with digital certification.	Percentage of companies with over ten employees with digital certification.	16.6%	60.0%
6. Companies with over ten employees which have taken security measures.	Percentage of companies with over ten employees which have taken I.T. security measures.	80.5% ³⁵	95.0%
7. Households with access to DTT (out of the total homes with television).	Percentage of households with access to digital terrestrial television out of the total households with television.	11.8 ³⁶	50.0%-2008 100.0%-2010
8. Number of hits per year per 10,000 internet users to Andalusian regional government web sites that preserve and disseminate Andalusian heritage and resources.	Number of hits per year to Andalusian regional government web sites that preserve and disseminate Andalusian heritage and resources per 10,000 internet users who have logged on to the internet in the last three months.	N/A (Indicator Analysis Project)	Indicator Analysis Project
9. Number of Andalusian-owned domains [.es] per 10,000 inhabitants.	Number of domains subscribed with the [.es] suffix owned by a private individual or an Andalusian company per every 10,000 inhabitants.	40.3 ³⁷	77.0

(**) Data from the Spanish Royal Mint (FNMT-CERES) only

³⁵ Survey on the use of ICTs and e-commerce in companies 2005/2006, Spanish Statistics Institute

³⁶ Survey on equipment and use of ICTs in homes 2006, Spanish Statistics Institute (1st half 2006)

³⁷ ESNIC (Network Information Center) www.nic.es

9 BUDGET

To ensure effective fulfilment of the actions included in the Information Society Plan for Andalusia 2007-2010 throughout its operational period, real financing is required within the financial framework of the budget for the autonomous region of Andalusia.

Below are details of the actual public funds which the Andalusian government will allocate for these purposes during this period, without excluding the possibility of additional funds provided by other administrations and private companies.

In addition to the funds relating to the information society included in the budget for the PIMA, the Andalusian government is allocating an additional part of its budget to the various entities of the Andalusian regional government.

According to the financial classification of the current public expenditure, the plan will involve the following main expenditure sections:

- Section II** - Includes everyday expenditure on equipment and assets which would need to be made in order to achieve specific measures in the plan.
- Section IV** - Includes contributions and transfers to be made to entities for financing everyday operations which help to achieve the objectives proposed in the strategy line for education in the digital society.
- Section VI** - This is the main axis of self-financing on which the plan is based. It includes expenses carried out directly by the Andalusian government which are intended for the creation of infrastructures and the acquisition of goods and services, which can be inventoried and depreciated, and which contribute to the development of the information society.
- Section VII** - Includes capital contributions and transfers for financing operations and measures for the development and creation of infrastructures, services and equipment in external agencies that will be responsible for carrying out these actions.

BUDGET		Period 2007 – 2010	
Digital community		10.02 %	138,790,191
	Digital citizenship	98,947,127	
	Digital inclusion	16,996,704	
	Digital participation	22,846,360	
Companies for the new economy		14.58 %	202,107,679
	Digital company	160,751,123	
	ICT sector	41,356,556	
Intelligent administration		65.28 %	904,690,964
	Intelligent administration management model for the Andalusian regional government	60,102,128	
	Digital public services	187,505,296	
	Education in the digital society	311,523,201	
	Health in the digital society	304,487,417	
	Justice in the digital society	41,072,922	
Infrastructure and digital context		10.12 %	140,301,493
	Broadband telecommunications infrastructures	66,753,091	
	Digital trust	5,202,270	
	Digital content	68,346,132	
TOTAL BUDGET FOR THE PLAN		1,385,890,327	

10 INSTRUMENTS FOR MONITORING AND CONTROLLING THE PLAN

This section describes the entities which will be created to support the Information Society Plan for Andalusia, in order to establish the conditions and structures which enable the plan to be carried out and its objectives to be fulfilled, taking into consideration its importance and transversality, and the corporate and social impact of most of the actions in the plan. These instruments are essential to enable the following:

- ✓ All the regional ministries of the Andalusian regional government are fully committed to the Information Society Plan for Andalusia and to its objectives; these regional ministries, via the proposed mechanisms, therefore undertake to promote and support them as this is an official project sponsored by the Andalusian regional government.
- ✓ Mechanisms will be established so that all regional ministries in the Andalusian regional government can participate in carrying out the plan.
- ✓ The appropriate mechanisms will be established for managing and monitoring the development of the plan, the degree of completion of the planned objectives and its evolving maintenance.
- ✓ Information on the plan itself, its objectives, the proposed actions and its anticipated impact, as well as its corresponding degree of completion will be communicated to the organisation as a whole and to Andalusian society.
- ✓ A system of information society indicators will be established, with the corresponding methodology and instruments for collecting information, and a research system will be set up to study the evolution of the information society.
- ✓ There will be collaboration and cooperation with other agencies in Andalusian society, both in the conception and in the development, implementation, monitoring and evaluation of the plan, with special emphasis on the participation of the business sector under the leadership and strategic direction of the Andalusian government.

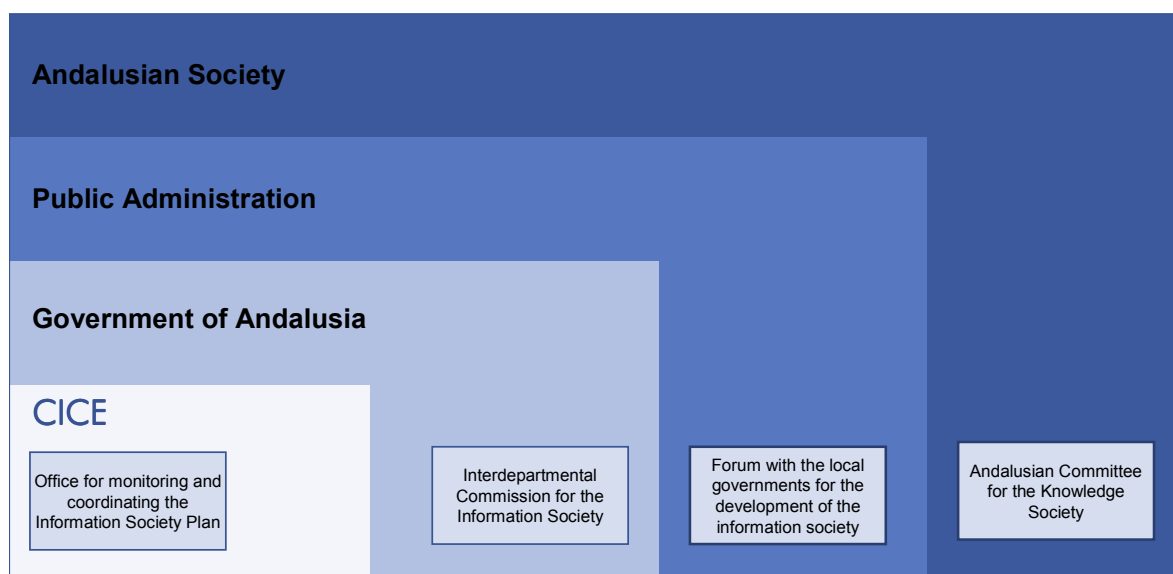
10.1 The Organic and Functional Structure for Monitoring and Control of the Information Society Plan for Andalusia

All the instruments defined will be part of the corporate structure of the Andalusian regional government. This will also include currently existing entities that are responsible for information and knowledge society policies, such as the Interdepartmental Commission for the Information Society and the Andalusian Committee for the Knowledge Society.

The monitoring and control instruments will be classified into three areas according to their functions and spheres of action:

- ✓ Entities for control and internal management
 - Office for monitoring and coordinating the Information Society Plan for Andalusia
- ✓ Entities for coordination between administrations
 - Interdepartmental Commission for the Information Society.
- ✓ Entities for active participation in the community of Andalusia
 - Forum with the local administrations for the development of the information society
 - Andalusian Committee for the Knowledge Society.

The following diagram shows the proposed instruments, according to their spheres of action:



10.2 Functions of Each of the Entities Listed

Office for monitoring and coordinating the Information Society Plan for Andalusia

To enable the execution of the proposed actions in the Information Society Plan for Andalusia an office will be set up for monitoring and coordinating these actions, with the following functions:

- ✓ To establish the mechanisms which enable the plan to be efficiently monitored and coordinated.
- ✓ To establish mechanisms and information systems which enable the creation of a "bank of actions or projects" and to measure the degree of progress of the actions as well as their budget.
- ✓ To establish mechanisms which make it possible to evaluate the degree of completion of the objectives proposed in the plan.
- ✓ To carry out a permanent and evolving maintenance of the plan regarding its objectives, and indicators linked to the completion of objectives, projects and budgets.
- ✓ To establish group working systems which encourage collaboration and coordination between regional ministries; the storing and publication of all available information on the plans (present and future), projects and their monitoring; etc.
- ✓ To study the possibilities of linking the financial data obtained from monitoring the actions in the plan with the expenditure management tools, in order to integrate the information of both systems consistently.

- ✓ To facilitate communication to Andalusian society of the plan's objectives, proposed actions and its anticipated impact, as well as its corresponding degrees of completion.

Interdepartmental Commission for the Information Society

Collegiate entity attached to the Regional Ministry of Innovation, Science and Enterprise (CICE), created in Decree 166/2001 of 10 July 2001, and responsible for the preparation and enactment of the Information Society Plan for Andalusia 2007-2010. The Interdepartmental Commission for the Information Society comprises representatives from all regional ministries of the Andalusian regional government.

Its main functions as the entity for participation, definition, promotion and control of the Andalusian regional government's policy on telecommunications and the information society are:

- ✓ To identify common initiatives and multi-sector or general projects which contribute to the implementation and development of the information society in Andalusia, and to the use and extension of these technologies in the administrative sphere to benefit citizens and companies.
- ✓ To understand and communicate the plans and strategic initiatives for the development of the information society in Andalusia, which will be submitted for approval by the council of ministers.
- ✓ To manage the implementation of an annual plan and to evaluate and monitor its development.
- ✓ To propose the creation of studies and development programmes on the information society, and to delegate the execution of these projects to the appropriate regional ministry as necessary.
- ✓ To propose to the appropriate regional ministry the participation of the regional administration in the most relevant national and international forums and organisations on the information society and ICTs.
- ✓ To understand and report on the regulations related with these functions.

In carrying out its functions, it must ensure the adequate transmission, communication and coordination through the representatives of the regional ministries in this commission and with the rest of the participants in the plan, and will be responsible for promoting and managing its execution.

Forum with local administrations for the development of the information society

This forum is proposed as a meeting point for collaboration and cooperation between the regional public administration and local administrations in subjects of common interest which favour the development of the information society, with the following commitments:

- ✓ To design the future strategy of the public internet access centre network.
- ✓ To increase digital public services in local administrations.
- ✓ To facilitate the implementation of the target model for the digital town council.
- ✓ To facilitate the spread of telecommunications infrastructures.

Andalusian Committee for the Knowledge Society

Entity attached to the Regional Ministry of Innovation, Science and Enterprise (CICE), created in Act 8/2005 of 9 May, 2005. The Andalusian Committee for the Knowledge Society comprises the chairman and ten members selected from respected people from the world of research and business, and who have recognised experience in activities relating to knowledge society.

The main functions assigned to the committee in order to enable the incorporation of Andalusia's citizens into the knowledge society, as well as to ensure universal access to new technologies, are:

- ✓ To propose guidelines for actions in this field and to carry out specific proposals to further this goal.
- ✓ To evaluate the evolution of the knowledge society in Andalusia.
- ✓ To report on the instruments of horizontal and sector based planning and the planning documents which may be submitted to it by the various regional ministries of the Andalusian regional government, via their regional ministers.
- ✓ To evaluate and monitor public policies developed by the different branches of the Andalusian public administrations relating to the knowledge society.
- ✓ To order annual studies on the progress and evolution of the knowledge society in Andalusia.