

Catalonia *on the Network*

S t r a t e g i c

P l a n f o r t h e

I n f o r m a t i o n

S o c i e t y

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Catalonia on the Network : Strategic Plan for the Information Society

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"Catalonia on the Network"

Strategic Plan for the Information Society

<http://www.gencat.es/csi>

<http://www.localret.es>

Miquel Puig Raposo

Commissioner for the Information Society

Antoni Farrés Sabater

President of Localret

Director

Lluís Jofre Roca

Co-Director

Ramon García-Bragado Acín

Co-ordinator

Montserrat Meya Llopart

Technical Officers

Llorenç Coma Zamora,

Jordi de la Hoz Deví,

Jaume Teodoro Sadurní

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Catalonia on the Network

The Commissioner's Office for the Information Society (CSI), created by the Generalitat de Catalunya (Autonomous Government of Catalonia) in order to facilitate the incorporation of Catalonia into the Information Society, and LOCALRET, a local consortium formed by the great majority of municipalities throughout Catalonia, whose aim is to promote the development and use of the new networks, have decided to share their responsibilities and to jointly call upon the Catalan society to take part in a global project of reflection in this particular field.

This reflection, in the form of a Strategic Plan, seeks to analyse the present position of Catalonia and its potential with respect to the development of infrastructures and the introduction of information and communication technologies into the fields of education and culture, administration, health care and business activity as a whole, in order to establish the bases for action and to define the initiatives that will enable Catalonia to assume a leading position in this new Information Society.

Since it is aimed that this study should make a detailed analysis of the structures of economic progress, as well as of territorial equilibrium and social cohesion, we have named it "Catalonia on the Network", thereby manifesting not only the concepts of communication and exchange, but also the idea of social involvement.

In order to give greater relevance to the spirit of commitment and consensus in the proposal, the draft was presented to the Catalan Parliament on 18 November 1998, and an undertaking was made to present the final document to the Parliament, which duly took place on 14 April 1999.

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01

Introduction

01.1 View of the future

The Information Society (IS) represents the most important transformation that has occurred in western societies since the Industrial Revolution. Like then, the changes affect the way the majority of the population work and the object of production, and, at the same time, the way we relate to one another, the way we learn and what we learn, the way we gain access to culture and the nature of the culture we seek access to. In short, what is changing is our way of life.

The Industrial Revolution opened up a gulf between countries, regions and cities. On the one hand, it left unmodernised, agriculturally-based societies that became areas from which people who were untrained and without means emigrated. On the other hand, societies appeared that were dynamic in economic, cultural and political terms. Catalonia is what it is, because it responded positively and convincingly to the challenge of industrialisation and to what this industrialisation entailed: from education for all to the construction of transport infrastructures and the participation of the population in political life.

The Information Society is opening up a new gulf within our societies, and this is happening very quickly.

Catalonia on the Network is the response to the challenges that we face as a result of this new social change, and it is a response born of a will to resolutely adopt a position in favour of modernity.

The most important factor in the pursuit of our objective is not a material action, but the forming of a consensus in the Catalan society around two ideas: firstly, that Catalonia may count itself among the most advanced societies in Europe in the forthcoming decade, because there is nothing to prevent this and because the position from which we start is very favourable, and secondly, that it is worth making the effort to achieve this, because the Information Society is not a society in which technology enslaves individuals, but just the contrary: it is a society in which technology creates jobs, a society in which this same technology allows the most routine tasks to be automated, and a society that provides access to education and culture for people who live in remote areas, or who are, for whatever reason, incapable of moving around; finally, it is a society that offers improved treatment of illness and also greater participation of the citizen in political life.

Catalonia can and must become a very advanced nation, but it is also very important that the Information Society does not create underprivileged areas within Catalonia or pockets of social deprivation inside the cities. Therefore, the telecommunications infrastructures must be equally distributed across the territory and training in technology cannot exclude anyone.

Catalonia on the Network is a programme of action that seeks to build a modern Catalonia; it considers that this modernisation can bring economic prosperity, in addition to social justice, territorial equilibrium and the revitalisation of cultural and political life, and it believes that the only thing that we need is the will to achieve this.

Mr. Miquel Puig Raposo

Commissioner for the Information Society

Mr. Antoni Farrés Sabater

President of LOCALRET

01.2 Overview of the Plan

The work presented here in the form of a Plan is therefore based on the conviction that for Catalonia the Information Society can represent an opportunity for social progress and improvement of its quality of life. At the same time, there is also the belief that the Information Society constitutes a reality that is particularly well adapted, in time and form, to our characteristics and potential.

Thus the objective is to identify the possible initiatives that are necessary in order to ensure that, in the medium term, Catalonia becomes one of the leading nations in this Information Society that is taking shape, in which we wish to play a significant role. We have to be able to make this role compatible with a further enhancement of the principles and values of a society that is profoundly democratic and respectful towards its environment.

If we are to prepare for medium and long-term reflection on a field as broad as this one, the maximum participation and social consensus are required. In this respect, an attempt has been made to ensure that there is a representative presence of the different social sensibilities and expertise existing in Catalonia. This has enriched the series of contributions that the Plan has drawn on and it establishes the basis for future agreements between the various agents involved.

The study undertaken during the past six months began with the analysis of equivalent proposals that were made recently by various countries around the world, particularly by those that are closest to Catalonia in geographic, cultural or economic terms. On the basis of this analysis and, above all, the specific characteristics of Catalonia, a proposal for the organisation of a Strategic Plan was made, which included the following features:

- The Plan is structured into six specific areas (Infrastructures, Industry, Education, Administration, Health Care and Cultural Change) and a transversal area intersecting all of these, Framework for the Information Society. Together, all these areas encompass the most significant subjects with respect to our focus.
- A working party was set up around each of these seven areas of the Plan, each party consisting of between 35 and 40 people with the appropriate background for the area in question. A co-ordinator and one or two moderators were responsible for moderating the discussion and the contributions of each of the working parties. A total of 250 people have participated.
- Three work sessions were completed for each area, with an interval of six weeks between each. At each session the contributions of the different participants were

compiled, on the basis of which the combined proposals and initiatives were drawn up. At the first session, the respective areas of work were defined; at the second, some strategic lines were identified, and finally, at the third session, a group of initiatives were specified (approximately six per working party) and the corresponding actions for each of these.

- A brief set of indicators catalogued by countries were studied for the different areas, and this made it possible to formulate some initial short-term (2001) and medium-term (2003) objectives. These were respectively identified with the values of the indicators of the group of advanced countries (short-term objective) and highly advanced countries (medium and long-term objective).
- The members of the Strategic Plan Reflection Groups and the Commissioner's Office staff working on the Plan employed an interactive tool on the Internet, the BSCW, for the publication and distribution of the contributions. This tool made it possible to satisfactorily discuss all the contributions and documents produced during the process of defining the Plan. This collaborative environment was extended to 7 chat sessions, at which preliminary debate of the strategic lines took place.

The final document that follows can only present a summary of the extremely interesting discussions and contributions made during the various sessions, contributions that draw on the best of the experience and knowledge of each of the participants. In this respect, it should be said that in order to produce this report, we have not started from scratch, but from all the previous experience accumulated by individuals and institutions that have been working intensively and successfully for varying periods of time on the different areas of reflection covered by this Strategic Plan, "Catalonia on the Network".

An additional body of information compiled during the preparation of the Plan is attached in the form of an Annexe. This includes statistics and an inventory of the most significant projects currently in progress around us. Furthermore, a set of specific complementary studies co-ordinated by the team of project directors will also be published.

Finally, we would like to take this opportunity to thank everyone who, together, by dint of their contributions and expertise, have brought this work to a successful conclusion.

Mr. Lluís Jofre Roca

Director of the Strategic Plan

Mr. Ramon Garcia-Bragado Acín

Managing Director of LOCALRET

Areas of the Strategic Plan

The Information Society Framework	Areas	Indicators	Reflection Groups	Proposals	Monitoring Forum
<ul style="list-style-type: none"> • R & D • Regulating Framework • Catalan and Catalonia on the network <p><i>Co-ordinator:</i> J. Majó</p> <p><i>Moderator:</i> J. Valor</p>	Infrastructures and Basic Services	Accessibility	Co-ordinator: J. Soto Moderators: C. Flamerich A. Sampietro	Identification of Initiatives and Actions	Participation of Social Agents and Monitoring Presentation to the Parliament
	Industry, Commerce and Content	Economic Activity	Co-ordinator: J. Oliu Moderators: M. Barceló J. Masias		
	Education and Training	Learning Interactivity	Co-ordinator: G. Ferrater Moderators: F. Ruiz M. Llinés		
	Administration and Services for the Citizen	Integration of Networks and Services	Co-ordinator: E. Maragall Moderator: J. Serra		
	Health Care and Quality of Life	Quality of Care	Co-ordinator: E. Rius Moderator: C. Padula		
	Society and Cultural Change	Participation	Co-ordinator: E. Punset Moderator: A. Serra		

Commissioner's Office for the Information Society (L. Jofre, M. Meya)

LOCALRET (R. Garcia-Bragado, J. Teodoro)

02

Seven Areas



02.1 The Framework of the Information Society

- 02.1.1 Descripción de las iniciativas y acciones
- 02.1.2 Tabla resumen de las iniciativas y acciones
- 02.1.3 Coordinado, relatores y miembros



02.1.1 Description of the initiatives and actions

The Information Society and Europe have something in common: both are on the threshold of rapid growth. Access to information and knowledge constitutes the key to evolution and to the maintenance of a democratic society. It must be borne in mind that technology will continue to advance and to constantly improve the group of services offered by the infrastructures. On the other hand, an effort is being made (an effort that still has to be intensified) in order to introduce minimum, but at the same time appropriate regulation. In this respect, the liberalisation of telecommunications, the correct legislation on intellectual property and the policies to ensure that everyone has free access to the network are of fundamental importance.

The success of all the measures proposed by the Strategic Plan "Catalonia on the Network" will depend on the degree of acceptance of the Plan by the users, in short, by the Catalan society.

The policies of action with a transversal effect (i.e., those that have an impact on all the areas) that are proposed hereunder may be grouped around three strategic lines:

1. The Research and Development (R & D) policy for the Information Society.
2. The presence of Catalonia on the network.
3. The regulating framework.

R & D Policy for the Information Society

The quality of the provision for research and development is a key factor and one that is necessary for the development of Information and Communication Technologies (ICT) in Catalonia. Universities and both public and private research centres will receive an important consolidating resource in the form of the services of Internet II, the high-performance network that will be implemented as one of the actions proposed in the area INFRASTRUCTURES AND BASIC SERVICES.

Anticipation in the development of new infrastructures and new uses of information services is the essential condition for the competitiveness of Catalonia in the Information Society. The convergence of audiovisual media with telecommunications requires that R & D should take place in this area, one of crucial importance for Catalonia. Thus, it will be necessary to promote research into alternative systems and

local loop technologies, so that competition has the effect of increasing the diversity of technological solutions in response to an increasingly consolidated demand for mobility for the user.

It is important that there should be both research directed towards the creation of new products for the Information Society and research into the impact of the Information Society on our society. Moreover, the creation of a network of innovative centres, the participation of the finest groups of Catalan researchers around virtual laboratories, and the establishment of R & D that will collaborate and compete with business research constitute the best ways to achieve these ends.

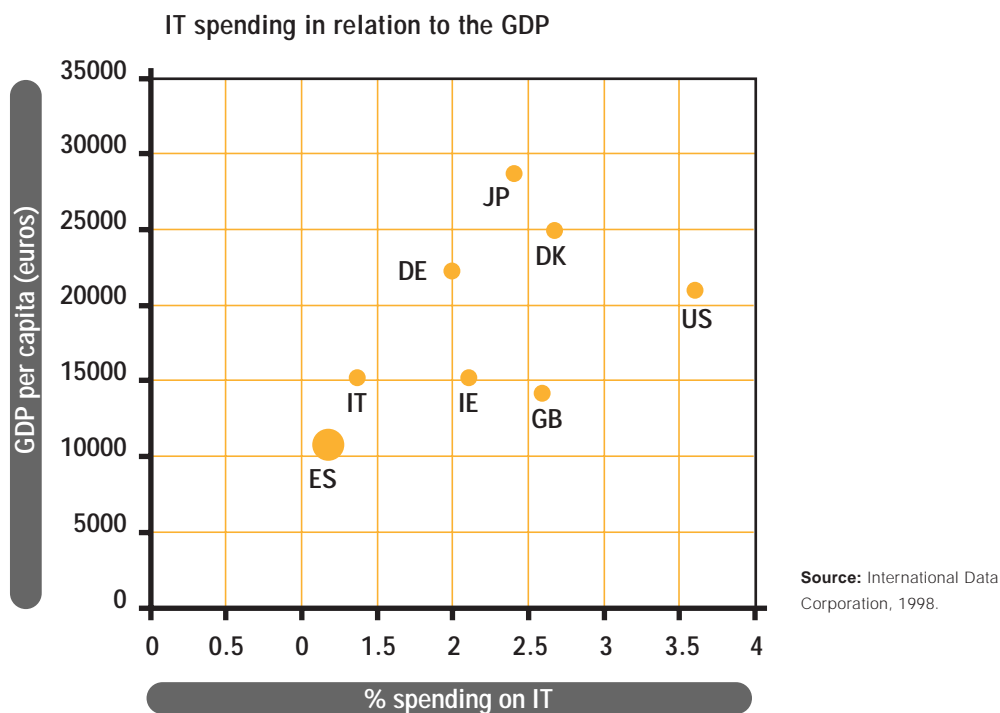


Figure 1. The graph shows one of the most important indicators that reflects the position of a particular society in the new Information Society with regard to its Information Technology consumption. The ultimate aim of the plan "Catalonia on the Network" is that Catalonia should take up a competitive position on the world map. The graph also shows the ratio between the GDP per capita and spending on Information Technologies in various countries. The United States of America and Great Britain spend relatively more on IT than other countries such as Germany, Italy or Spain.

Initiative 1**R & D Plan for the Information Society orientated towards the potential of Catalonia.**

Development of R & D that integrates public and private research within the framework of public-private sponsorship, and which serves as "a basis of confidence" for the industry of the Catalan Information Society.

It is necessary to define a R & D Plan for Information and Communication Technologies (ICT) that establishes long-term continuity in research and innovation, in order that the business community may invest with the guarantee of continuous research in Catalonia. Research in ICT will offer the technicians of the Small and Medium-sized Enterprise (SME) integrative participation and will correspond to the needs of the various sectors. This plan will include detection and support systems for private research.

The Commissioner's Office for Universities and Research will propose research on two fronts:

1. Research in ICT applied to the various sectors, basically Information Technologies applied to medicine, telecommunications, education and the development of multimedia content.
2. Research that focuses on the socio-economic impact of the implantation of ICT.

The Research and Development Plan for the Catalan Information Society will be a national undertaking in which both the Administration and the private sector will participate, and it will be orientated towards the innovation of the production sector in Catalonia.

This undertaking will include:

- The internationalisation of research through collaboration with other centres around the world and maintenance of a high profile in international research programmes.
- An increase in the volume of investment in research during the next three years (with the aim that by the end of this period current investment will have been tripled).
- A 30% increase in the number of personnel that specialise in R & D during the next three years. This measure will be accompanied by an enforced change in the profiles of researchers, who will have to be guided by the demands and needs of the present society.
- The availability of Internet II in 2001.
- The establishment of grants and loans for research and industrial innovation, and for research into the impact of the Information Society on the population.
- The creation of awards and labels for the best "public interest R & D projects".

**Agents:**

CUR (Commissioner's Office for Universities and Research), Universities, CSI (Commissioner's Office for the Information Society), Department of Industry, Trade and Tourism, EU, business sector.

Initiative 2**Network of advanced research centres.**

The network of research centres will have a mixed focus with respect to both the participation of public and private research and the type of network; a network of advanced research centres will be created in various fields of learning, in addition to a network of virtual laboratories, in order to promote the collaborative research of different research groups.

Actions:

- Positioning of the university as a laboratory of the Information Society.
- Deployment of a Network of advanced research centres in the priority areas of the Information Society.
- Promotion of the high international profile of research and research groups in Catalonia.
- Deployment of telematic communities.

Agents:

CUR (Commissioner's Office for Universities and Research) / Universities, CSI, Department of Industry, Trade and Tourism, business sector, departments of the Administration.

The presence of Catalonia on the Network

The presence of Catalonia on the network must be articulated on two fronts: on the one hand, the Catalan language must be present on the network, and on the other hand, there must be a powerful presence of Catalan digital content of all kinds: relating to business, services for the citizen, culture, civic expression, etc.

Initiative 3**Promotion of the presence of the Catalan language in the Information Society**

The aim of this initiative is to guarantee that the presence and use of the Catalan language on the Internet exists under the same conditions as the presence and use of other world languages.

The objective behind the presence of Catalonia on the network is to convey and to provide greater communication of the cultural and economic experience and knowledge of Catalonia. All the public interest institutions and organisations should gradually become participants in a cultural electronic network that offers citizens transparent access to the services that they require.

The rapid evolution of technologies and the decentralisation of agents and information networks open new channels for the spread of products and cultural services and for the expansion of cultural diversity. The strategy to be adopted is based on the new opportunities provided by the Information Society of enhancing the international profile of Catalonia.

Actions:

- Creation of a Catalan search engine to provide access to public and private portals, which will support a multitude of initiatives and promote multilingualism and multiculturalism.
- Elaboration of on-line tools and linguistic resources in Catalan (automatic translation services into Catalan, recognition of oral and written Catalan, linguistic resources, etc.).
- Dissemination of tools and content in Catalan (templates, dictionaries, etc.) through the support of a Catalan Agency specialising in Catalan linguistic resources.

The automatic translation of European languages into Catalan and vice-versa, together with speech recognition, will be indispensable tools to ensure that the Catalan language enjoys equal conditions with respect to other languages. On the other hand, specialised templates for business sectors and various professionals will be another of the resources and tools that will have to be made available.

One of the most important tasks is the diffusion of linguistic resources that are currently dispersed and the diffusion both of the use of linguistic tools of all kinds and of good practices. (For example, the inclusion of the Catalan Webs in the Internet search engines, or the diffusion of model norms on how best to offer services via the Internet, etc.).

Agents:

Department of Culture, CIS, LOCALRET (Local Consortium for the development of telecommunications networks and new technologies), universities, IEC (Institute of Catalan Studies), private agents, other Autonomous Communities, multinationals.



Initiative 4

Support and promotion of digital content from Catalonia on the network.

The aim of this initiative is to guarantee that cultural, business or civic content from Catalonia is present on the network under the same conditions as content from other cultures and societies.

Actions:

- Digitisation and dissemination of cultural heritage: The digital library of Catalonia.
- Promotion of the production of new digital content (educational, socio-cultural, periodic publications, leisure, etc.).
- Elaboration of an inventory of digital initiatives and electronic publications in Catalonia.
- Participation of Catalonia in international network standardisation organisations.
- Action concerning domains in Catalan (initiatives with ICAAN and ES_NIC) and promotion of public debate.

Agents:

Department of Culture, Department of Industry, Trade and Tourism, private companies, Department of the Presidency, CSI, LOCALRET, universities, local entities.

The regulating framework

Initiative 5

Deployment of a regulating framework and codes of practice to support electronic interchange.

The regulating framework for Catalonia in the Information Society aims to overcome all the possible legal, fiscal, administrative and non-administrative barriers that exist, in order to promote the incorporation of a modern Catalonia into the digital era. This framework will deploy laws and codes of practice to promote electronic interchange and to safeguard citizens' rights.

The regulating framework will cover aspects related with the protection of the rights and privacy of citizens, and, at the same time, it will establish measures to facilitate the deployment of the Information Society, such as those associated with infrastructures and the reinforcement of electronic trading and transactions. In summary, the objective is to define all the possible regulations and recommendations that will endorse the rapid and

profound assimilation of change towards the Information Society, and which will also remove, in so far as is possible, the legal obstacles to the consolidation of this Society.

This framework will promote:

- Regulation adapted to the new technologies and the future Information Society, which is coherent and flexible, internally and externally.
- An effective legal structure that protects the rights of individuals (minors, marginalised groups, etc.) and companies.
- Reinforcement of the democratic and constitutional nature of the Information Society.
- Optimum social and territorial cohesion and the guarantee that in the future universal access to the Information Society will become a basic right for all.

Actions:

- Creation of a Commission to establish the Legal framework for study of the tax treatment of the Information Society and to constantly review/update this treatment.

This Commission will seek to perform the following action:

- To eliminate the legal barriers that obstruct the consolidation of the Information Society.
- To establish measures that will guarantee the privacy, security and protection of electronic data.
- To define public information and make this available.
- To promote measures to support small businesses and retail businesses.
- To guarantee the democratic right to vote on the network.
- Publication of laws and establishment of legal provisions that protect transactions on the network.
- Creation of a Catalan body (authority) to certify companies and individuals. This body shall be responsible for:
 - Establishment of electronic signature models and sole certification of corporate persons/entities for electronic procedures.
- Proposal for the review of the Administrative Procedure Law and/or the Public Procurement Law.

Agents:

Mixed Commission, Department of Justice, Department of the Presidency, Department of Economy and Finance, all departments, Consortium of Public Administrations, Data protection agency.



02.1.2 Chart summarising the initiatives and actions

INITIATIVES	ACTIONS	AGENTS
Initiative 1 R & D Plan for the Information Society orientated towards the potential of Catalonia	<ul style="list-style-type: none"> • Internationalisation of research. Collaboration with other centres. Participation in international research programs. • Tripling the volume of investment in research in three years. • 30% increase in numbers of personnel over the course of three years. Introduction of new researcher profiles. • Availability of Internet II in 2001. • Grants and loans for industrial research and innovation. • Awards and labels for the best "public interest R & D projects." 	CUR / Universities CSI Department of Industry, Trade and Tourism EU Business sector
Initiative 2 Network of advanced research centres	<ul style="list-style-type: none"> • Positioning of the university as a laboratory of the Information Society. • Deployment of a network of advanced research centres. • Promotion of the high international profile of research and research groups in Catalonia. • Deployment of telematic communities. 	CUR / Universities / CSI Department of Industry, Trade and Tourism Business sector Departments of the Administration
Initiative 3 Promotion of the presence of the Catalan language in the Information Society	<ul style="list-style-type: none"> • Creation of a Catalan search engine to provide access to public and private portals, which will support a multitude of initiatives and promote multilingualism. • On-line linguistic tools and resources in Catalan (automatic translation services using Catalan, oral and written recognition of Catalan, linguistic resources, etc.) • Dissemination of tools and content in Catalan (templates, dictionaries, etc.), through the support of a Catalan Agency specialising in Catalan linguistic resources. 	Department of Culture CSI, LOCALRET Universities IEC (Institute for Catalan Studies) Private agents Other Autonomous Communities Multinationals
Initiative 4 Support and promotion of digital content from Catalonia on the network	<ul style="list-style-type: none"> • Digitisation and dissemination of cultural heritage: The digital library of Catalonia. • Promotion of the production of new digital content (educational, socio-cultural, periodic publications, leisure, etc.). • Inventory of digital initiatives and electronic publications in Catalonia. • Participation of Catalonia in international network standardisation organisations. • Action concerning domains in Catalan (initiatives with ICAAN, public debate). 	Department of Culture Department of Industry, Trade and Tourism Private companies Department of the Presidency CSI LOCALRET Universities Local entities

<p>Initiative 5</p> <p>Deployment of a regulating framework and codes of practice to support electronic interchange</p>	<ul style="list-style-type: none"> • Creation of a Commission to establish a Legal framework for study of the tax treatment of the Information Society and to constantly review/update this treatment. • Elimination of legal barriers. • Privacy, security and protection of electronic data. • Public information. • Small/retail businesses. • Democratic rights to vote on the network. • Publication of laws and legal provisions that protect transactions on the network. • Creation of a Catalan body (authority) to certify companies and individuals. • Electronic signature and sole certification of corporate persons/entities for a variety of procedures. • Review of the Administrative Procedure Law and/or the Public Procurement Law. 	<p>Mixed commission Department of Justice Department of the Presidency Department of Economy All departments Consortium of Public Administrations Data protection agency</p>
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02.1.3 Co-ordinator, moderators and members

Co-ordinator

Mr. Joan Majó Cruzate

Catalan Institute of Technology (ICT)

Moderator

Mr. Josep Valor Sabatier

IESE – University of Navarra

Mr. Josep Ma. Álvarez Suarez	General Workers' Union (UGT)
Mr. Miquel Barceló Roca	Catalan Institute of Technology (ICT)
Mr. Daniel Bastida Obiols	Andorran National Computing Centre
Mr. Norbert Bilbeny García	Department of Philosophy (University of Barcelona)
Mr. Joaquim Bisbal Mendez	Open University of Catalonia (UOC)
Mr. Antoni Bravo Cañan	Bravo & Orozco
Mr. Isidre Canals Cabiró	Barcelona City Council
Mr. Manuel Castellet Solanas	Institute of Catalan Studies (IEC)
Mr. Josep Clotet Sopena	Municipal Computing Institute, Lleida City Council
Mr. Antoni Farrés Sabater	Sabadell Town Council
Mr. Luis Ángel Fernández Hermana	Enredando.com SL
Mr. Gabriel Ferrater Pascual	Open University of Catalonia (UOC)
Mr. Carles Flamerich Castells	Fundació UB-Media
Mr. Xavier Fornells Sala	Catalan Association of Municipalities (ACM)
Ms. Esther Franquesa Bonet	TERMCAT
Mr. Lluís Jou Mirabent	Department of Cultural Affairs. Generalitat de Catalunya
Ms. Montserrat Llinés Soler	Autonomous University of Barcelona (UAB)
Mr. Ernest Maragall Mira	Barcelona City Council
Mr. Josep Àngel Martos Martín	Web, Internet magazine
Mr. Jordi Masias Muntada	Official Chamber of Commerce, Industry and Shipping of Barcelona
Mr. Ramon Massaguer Meléndez	Department of Health and Social Security (DSSS)
Mr. Manuel Medina Llínas	Polytechnical University of Barcelona (UPC)
Mr. Jaume Miranda Canals	Cartographic Institute of Catalonia
Mr. Juan Mulet Melià	COTEC Foundation
Mr. Josep Oliu Creus	Banc Sabadell
Mr. Jordi Oliveras Prats	Catalan Institute of Statistics (IDESCAT)
Mr. Carlos Padula Modorelli	Catalan Consortium of Hospitals (CHC)
Mr. Josep A. Plana Castellví	Catalan Research Foundation (FCR)
Mr. Eduard Punset Casals	Chemical Institute of Sarrià (IQS)
Mr. Joan Rangel Tarres	Barcelona Regional Council
Mr. Xavier Ribas Alejandro	Price Waterhouse
Mr. Ferran Ruiz Tarragó	Education Department (PIE)
Ms. Verónica Sagnier	Spanish Association of Electronic Commerce
Mr. Albert Sampietro Ventosa	LOCALRET
Mr. Francesc Santacana Martorell	Association for the Strategic Plan Barcelona 2000
Mr. Artur Serra	Polytechnical University of Barcelona (UPC)
Ms. Teresa Serra Majem	Barcelona City Council
Mr. Joan Serra Roca	Commissioner's Office for the Information Society (CSI)
Mr. David Serrat Congost	Commissioner's Office for Universities and Research (CUR)
Mr. Juan Soto Serrano	Hewlett Packard



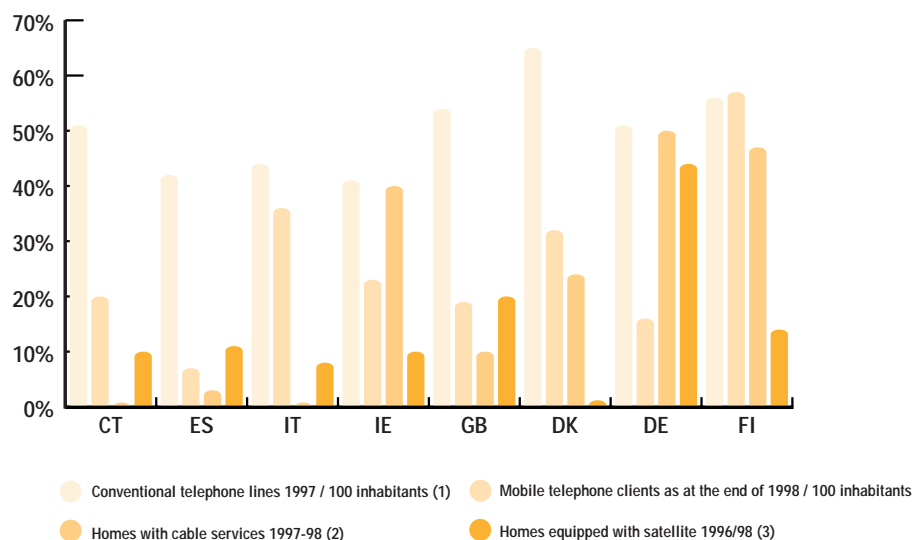
02.2 Infrastructures and Basic Services

- 02.2.1 Description of the initiatives and actions
- 02.2.2 Chart summarising initiatives and actions
- 02.2.3 Co-ordinator, moderators and member

02.2.1 Description of the initiatives and actions

The three core aspects of the development of the Internet infrastructure in Catalonia are, firstly, an increase in the capacity of each of the components of the networks: backbones and local access; secondly, an increase in the number of interconnection points between the elements of the network for optimum management of traffic; and finally, regulation that will have a dynamic effect on investments, rights of access and final access to the internal network of buildings.

The success of the deployment of infrastructures is therefore conditioned by the liberalisation of the telecommunications market, with the corresponding implications for the pricing policy and the quality of service. In this respect, the Catalan government will take steps to ensure that Catalonia - within the context of Spain - develops a tariff ratification policy with the operators. Tariffs must respect the norms of competition and the interests of the consumer. Furthermore, innovative pricing formulas based on interconnection charges should be considered, as well as the fact that these can be modulated according to use.



Sources: ESIS-ISPO 98-99, Telefónica, Airtel, DMR-CIS.

(1) Includes basic, Ibercom and ISDN lines.

(2) Homes with a cable television subscription in relation to the number of homes with TV. 1998 data except DK and FI 97.

(3) Homes equipped with satellite in relation to the number of homes with TV. 1998 data except FI 97, DE 96 and IE 96.

Figure 2. The graph shows one of the most frequently used indicators to measure the penetration of communications in a country. At present, Catalonia is in a similar position to Germany and Great Britain. This indicator, together with that of cable penetration, will be one of the indicators to be taken into account when measuring the success of the deployment of infrastructures.

Initiative 1

Deployment of the network of broadband telecommunications infrastructures throughout Catalonia.

Success in stimulating demand requires the deployment of telecommunications services that takes account of accessibility to citizens while maintaining social and territorial cohesion, acceptable prices, and the forthcoming convergence of the audiovisual sector with telecommunications.

The widespread deployment of cable and of all the alternative technologies (elements that will have to guarantee the access of citizens to broadband communications) is a key factor in the future wealth of Catalonia. This is a task that essentially lies in the hands of private enterprise, which is why the Administration must take promotional measures in this sphere, ensuring that the correct actions are instigated. This initiative gives consideration to several actions designed to make broadband telecommunications available to the residential market, which will undergo the most radical changes, precisely as a result of its necessary evolution towards broadband.

Actions:

- Deployment of cable in the backbone network that will offer local access to the business and residential market.
- Deployment of alternative broadband technologies (satellite, ADSL, etc.).
- Regulation of access to basic infrastructures.
- Modernisation of the switching centres and creation of a neutral node in Catalonia.
- Expansion of Internet server equipment in Catalonia.

Among these deployment actions, which essentially focus on areas where there is a surplus of infrastructure, it will be necessary to devote attention to the particular situation of certain neighbourhoods or areas, which will have to be specifically treated as deficient areas.

Agents:

CSI (Commissioner's Office for the Information Society), LOCALRET (Local Consortium for the development of telecommunications networks and new technologies), proprietors of infrastructures and telecommunications operators.

Initiative 2

Deployment of broadband telecommunications networks in order to achieve territorial and social equilibrium in areas where these are deficient.

The aim of this initiative is to deploy a network in areas where there is a deficiency that will provide operators with the opportunity to deploy telecommunications infrastructures at a later stage. In short, it is a bid for territorial equilibrium.

The new role played by the Administration in the free market converts it into a guarantor of equal opportunities for citizens throughout Catalonia. In accordance with this, this initiative will promote the deployment of a broadband backbone network in the capitals of each comarca (administrative division in Catalonia), by means of public investment agreed with the private sector. Likewise, studies will be made concerning deployment in towns of more than 10,000 inhabitants. The regulation of access to the infrastructures that are considered to be essential will also be studied, and these will be declared of general interest in the deployment of broadband telecommunications in areas where there is a deficiency.

Actions:

- Extension of a broadband backbone network to the capitals of each county (comarca), as well as to densely populated areas, if necessary, by means of public action and agreements with the private sector.
- Deployment of a subscriber loop with alternative technologies.
- Production of a geographic information system of the infrastructures in Catalonia (national grid, rail network, etc.), in order to provide information on access rights for the future deployment of telecommunications networks.
- Analysis of the infrastructure resources that exist in deficient areas and of the actions required to mitigate the deficiencies in more seriously deficient areas.
- Regulation of access to the basic telecommunications infrastructures and to the alternative networks.

Satellite telecommunications will have an important role to play in the deployment of broadband services throughout Catalonia.

Agents:

DPTOP (Department of Territorial Policy and Public Works), CSI, LOCALRET, cable operators and various administrations.



Initiative 3

Extension of Internet and implementation of a Catalan Internet II.

The generalised use of the communications networks (particularly of Internet) by the entire population is an objective that seeks to ensure that no social group is excluded from the Information Society. On the other hand, the availability of a high-speed network for research and technological innovation represents a clear commitment to the competitiveness of the economy and the provision of advanced services in the future.

The Catalan Internet II network will connect the advanced research centres and the universities through the creation of a group of territorial nodes (GigaPoPs) capable of very high speeds. At a later stage, Internet II will be accessible to the large research centres of private companies, thereby offering a new opportunity for research within the Information Society of the future. In addition to this, international agreements will be reached for the interconnection of broadband networks that will make it possible to connect the Catalan Internet II with other European and international networks, for uses related with education, research and advanced technologies. In accordance with national proposals, Catalonia will directly oversee its intercontinental connections.

The deployment of Internet II will take place in two phases: during a first phase, there will be access to it on an experimental scale from the Catalan universities, while the second phase will include tests for commercial uses of transfer of technology between public and private research centres.

Actions:

- Promotion and sensitisation of the entire population to the use of the Internet.
- Implementation of Internet II and subsequent expansion with other European networks, for purposes of education, research and transfer of technology projects (with the participation of the technological and social sectors). In addition to this, the "Anella Científica" broadband telecommunications network will be reinforced.
- Development of new broadband applications, respecting the freedom of action and innovation of all the operators.

Agents:

CSI, private agents, administrations, CESCO (Catalan Supercomputing Centre), universities, research centres, telecommunications operators.

Initiative 4

Definition of the Basic Public Service.

This initiative complements the physical deployment of infrastructures with a series of measures that will guarantee the minimum conditions in which the citizen will be in a position to make use of the network and the services, while at the same time a critical mass of users is attained. Moreover, the aim of this initiative covers aspects concerned with moderate tariffs and the definition of the concept of Basic Public Service.

The definition of Basic Public Service is complementary to that of Universal Service (for which the Spanish Administration has powers), and covers the basic Telecommunication services that must be equally available to citizens, independently of their social class or geographical location.

This definition requires certain minimum conditions concerning the application of the concept of "sharing of infrastructures", with respect to the establishment of access rights, given that this concept will not have the same meaning as that of "universal service" and will therefore signify a difference in the area of territorial deployment.

Actions:

- Definition of the concept of Basic Public Service and application of this concept, in order that, on the one hand, obstacles to deployment are avoided, and on the other hand, links are forged between all the administrations. In short, it includes:
 - Promotion of rates that facilitate the introduction and use of the Internet, while permitting competition.
 - The right of all citizens to an electronic address/mailbox.
- Creation of a commission that will be responsible for making recommendations for the control of the quality of service, and which will also identify and take note of users' needs with respect to Information Technologies (IT).

Agents:

CSI, LOCALRET, administrations, and private and public entities.

**Initiative 5**

Access of the telecommunications networks to public and private buildings, structures and new residential developments.

This initiative is concerned with increasing the accessibility of network telecommunications in residential developments and the interior of buildings. In order to guarantee critical mass and capillarity to users, the deployment of backbone infrastructures must be accompanied by urban development and building measures.

Suitable regulations and reinforcing measures must be defined, in order that the telecommunications infrastructures may be extended to residential developments and buildings. The correct capillarity both in new buildings and in those already built must be promoted. In this respect, it is important that the municipalities should develop norms covering the technical conditions necessary for the deployment of telecommunications. Four actions have been pinpointed:

Actions:

- Definition of an "extended certificate of fitness for habitation" for construction in the Information Society.
- Establishment of a "Renewal" Plan with tax advantages for the renovation of buildings already constructed.
- Definition of the wiring requirements for telecommunications access on residential developments, minimising the environmental impact.
- Promotion of the use of Information and Communication Technologies (ICT) in the construction sector.

Agents:

DPTOP, Recognised Professional Bodies, associations, local entities, CSI, LOCALRET.

Initiative 6

Public access points: the digital library, cultural and teleworking areas.

Financing and specific tenders will be organised in order to provide libraries and 500 multimedia sites (civic centres, recreation areas, federations, etc.) with Internet access. The Library will be the point of reference for access to information in the digital era, that is to say, it will be used to make enquiries, to present applications for the research of information and navigation support, and also to gain access to the Internet.

The Catalan digital library has two important objectives: on the one hand, the libraries are to be equipped as Internet enquiry centres/points, which entails teaching the population to become technologically literate, and on the other hand, an indexed catalogue of Catalan resources is to be created that will be available to all the libraries.

This action will include the progressive digitisation of resources, beginning with summaries of publications. The library will offer a long-distance lending service and other value-added services to provide Internet access for users who do not have Internet at home.

Actions:

- Equipping of up to 500 areas to support Internet use/access and teleworking in the next four years.
 - Internet access from all libraries and promotion of the use of these libraries as public access points.
 - Action to facilitate Internet access from underprivileged areas and those at risk of being excluded.
- Creation of a communal catalogue for the Libraries of Catalonia and digitisation of content.
- Planning of the indexing, collection, conservation and preservation of digital documents in Catalonia.

These actions aim to reinforce the cultural development of the population and to increase literacy levels in Catalonia, while creating an observational structure that will monitor the goals attained by this initiative.

Agents:

Department of Cultural Affairs, regional councils, local entities, education system.



02.2.2 Chart summarising the initiatives and actions

INITIATIVES	ACTIONS	AGENTS
Initiative 1 Deployment of the network of broadband telecommunications infrastructures throughout Catalonia	<ul style="list-style-type: none"> • Deployment of cable in the backbone network to offer local access to the business and residential market. • Deployment of alternative broadband technologies (satellite, ADSL, etc.). • Regulation of access to basic infrastructures. • Modernisation of the switching centres and creation of a neutral node in Catalonia. • Expansion of Internet server equipment in Catalonia. 	CSI LOCALRET Infrastructure proprietors Telecommunications operators
Initiative 2 Deployment of broadband telecommunications networks in order to achieve territorial and social equilibrium in areas where these are deficient	<ul style="list-style-type: none"> • Extension of a broadband backbone network to the capitals of each comarca and to densely populated areas, (if necessary) by means of public action and agreements with the private sector. • Deployment of subscriber loop with alternative technologies. • Production of a geographic information system of the infrastructures in Catalonia (national grid, rail network, etc.), in order to provide information on access rights for the future deployment of telecommunications networks. • Analysis of the infrastructure resources that exist in deficient areas and of the actions required to mitigate the deficiencies in more seriously deficient areas. • Regulation of access to the basic telecommunications infrastructures and alternative networks. 	DPTOP CSI LOCALRET Private cable companies Administrations
Initiative 3 Extension of Internet and implementation of a Catalan Internet II	<ul style="list-style-type: none"> • Promotion and sensitisation of the entire population to the use of the Internet. • Implementation of Internet II and subsequent expansion with other European networks, for purposes of education, research and transfer of technology projects (with the participation of the technological and business sectors.) • Development of new broadband applications, respecting the freedom of action and innovation of all the operators. 	CSI Private agents Administrations CESCA Universities Research centres Telecommunications operators
Initiative 4 Definition of the Basic Public Service	<ul style="list-style-type: none"> • Definition of the concept of Basic Public Service and application of this concept, in order that, on the one hand, obstacles to deployment are avoided, and on the other hand, links are forged between all the administrations. It includes: <ul style="list-style-type: none"> - Promotion of rates that facilitate the introduction and use of the Internet, while permitting competition. - The right of all citizens to an electronic address/mailbox. • Creation of a commission that will be responsible for making recommendations for the control of the quality of service, and which will also identify and take note of users' needs with respect to Information Technologies (IT). 	CSI LOCALRET Administrations Private and public entities

Initiative 5 Access of the Telecommunications networks to public and private buildings and structures and new residential developments	<ul style="list-style-type: none"> • Definition of an "extended certificate of fitness for habitation" for construction in the Information Society. • Establishment of a "Renewal" Plan with tax advantages for the renovation of buildings already constructed. • Definition of the wiring requirements for telecommunications access on residential developments, minimising the environmental impact. • Promotion of the use of Information and Communication Technologies (ICT) in the construction sector. 	DPTOP Recognised Professional Bodies Local entities CSI LOCALRET
Initiative 6 Public access points: the digital library, cultural and teleworking areas	<ul style="list-style-type: none"> • Equipping of up to 500 areas to support Internet use/access and teleworking. <ul style="list-style-type: none"> - Internet access from all libraries and promotion of the use of libraries as public access points. - Action to facilitate Internet access from underprivileged areas and those at risk of being excluded. • Creation of a communal catalogue for the Libraries of Catalonia and digitisation of content. • Planning of the indexing, collection, conservation and preservation of digital documents in Catalonia. 	Department of Cultural Affairs Regional Councils Local entities Education system



02.2.3 Co-ordinator, moderators and members

Co-ordinator

Mr. Juan Soto Serrano

Hewlett-Packard

Moderators

Mr. Carles Flamerich Castells

Fundació UB-Media

Mr. Albert Sampietro Ventosa

LOCALRET

Mr. José A. Acebillo Marín	Barcelona Regional
Mr. Ramón Agustí Comas	Polytechnical University of Barcelona (UPC)
Mr. Miquel Àngel Alloza Guillén	AIRTEL
Mr. Casimir Alonso	BT Telecomunicaciones
Mr. Lluís Anglada Ferrer	University Libraries of Catalonia
Mr. Joan Cano Bóveda	Gas Natural
Mr. Carles Casanovas Dosrius	ELTEC
Mr. Jordi Compte Bastida	JAZZTEL Telecomunicaciones
Mr. Teófilo del Pozo	BT Telecomunicaciones
Mr. Antoni Elias Fusté	ETS d'Enginyeria de Telecomunicacions de Barcelona
Mr. Antoni García Comas	Catalan Association of Civil Engineers in Barcelona
Mr. Josep Garriga Paitoví	Telefónica
Mr. Rafael González Santos	Municipal Institute of Computing
Mr. Josep Grau Soldevila	DOXA CONSULTING
Mr. Miquel Huquet Vilella	Catalan Supercomputing Centre (CESCA)
Mr. Josep Ma. Llop Torné	Lleida City Council
Mr. José López Tafalla	Retevisión
Mr. Alberto Martí Batera	Astra Marketing Ibèrica SA
Mr. Carlos Martín Badell	Catalan Association of Telecommunications Engineers
Mr. Pelayo Martínez Bauluz	Metropolitan Transport Authority
Mr. Josep Àngel Martos Martín	Web, Internet magazine
Ms. Carme Mayol Fernández	Institute of Librarians
Mr. Pere Mier Albert	MIER COMUNICACIONES
Mr. Salvador Milà Solsona	Mataró Town Council
Mr. Xavier Peiró Esteban	Telecommunications Centre of the Generalitat
Mr. Antonio Peral Villar	Valencian Office for the Information Society
Mr. Jordi Pericas Torquet	Barcelona Regional Council
Mr. Miquel Pingarrón Gardo	Astra Marketing Ibèrica SA
Mr. Ramir de Porrata-Dòria Yagüe	Nat. Assoc. of Electronics and Telecommunications Industries (ANIEL)
Mr. Ramon Puig Soler	Barcelona Institute of Quantity Surveyors and Technical Architects
Mr. Ramon Roger Casamada	Department of Territorial Policy
Mr. Ramon Sagarra	Cable i Televisió de Catalunya (CTC)
Mr. Daniel Serra de la Figuera	Pompeu Fabra University (UPF)
Mr. Xavier Solà Martí	Internet Users' Association (AUI)
Mr. Pedro Subirós Duxáns	RENFE (Spanish National Railway Network)
Mr. Xavier Tey Feliu de la Peña	Collserola Telecommunications Tower
Mr. Pere Vila Fumàs	Televisió de Catalunya (TVC)



02.3	Industry, commerce and contents	02.3.1	Description of the initiatives and actions
		02.3.2	Chart summarising initiatives and actions
		02.3.3	Co-ordinador, moderators and member

02.3.1 Description of the initiatives and actions

The initiatives in the business and commercial sector (including the creation of content) have a twofold objective: firstly, to ensure that information and communication technologies are fully assimilated and used by the business sector, and secondly, to ensure that the local industries of the Information Society Technologies sector and the content creation industry (multimedia and audiovisual media) attain a strong position of leadership. In parallel with this, the achievement of these aims will imply that changes have occurred in the business culture, the way of working and the profile of professional workers.

The actions in this area are supported by regulating measures that favour a competitive environment and generational change. The regulating measures will be implemented as part of the actions within the transversal area.

The CONDRINET¹ survey identifies four priorities for European business:

- Implantation of the extensive use of telecommunications in order to transform the business process.
- Creation of "flexible" organisations that are quick to "learn", with motivated workers who are familiar with Information Technologies.
- Collaboration with all types of organisations in order to establish appropriate regulations and standards.
- Attracting the attention of clients and maintaining it through the offer of products and services orientated towards the interests of the community.

Those technologically powerful SMEs will have to play an essential role in the design of new products and services. Indeed, it is the figure of the SME that, as it introduces innovation and stimulates demand, will ensure that the scientific and technological potential of Catalonia is converted into economic success. The three strategic lines here are:

- A policy of support for companies that offer Information Technology products and services, considering the development of e-commerce as another ICT industry.
- Promotion of the creative sector of multimedia and audiovisual content and content produced by new entrepreneurs.
- Adaptation of the business sector to change: businesses as the hope for the future.

This policy provides support for actions designed to strengthen the corporate production sector of the industries of the Information Society. This sector not only encompasses the Information and Communication Technologies (ICT) sector, but also includes companies

1. Content and Commerce-driven Strategies in Global Networks. European Commission. DGIII/E www.echo.lu/info2000

that produce electronics, computers and all kinds of hardware for telecommunications, computing and the audiovisual industry, in addition to companies from the new emerging sector of electronic commerce and the Information Society sector as a whole.

The following graphs show comparisons of one of the most relevant indicators of a country's production potential in the future Information Society.

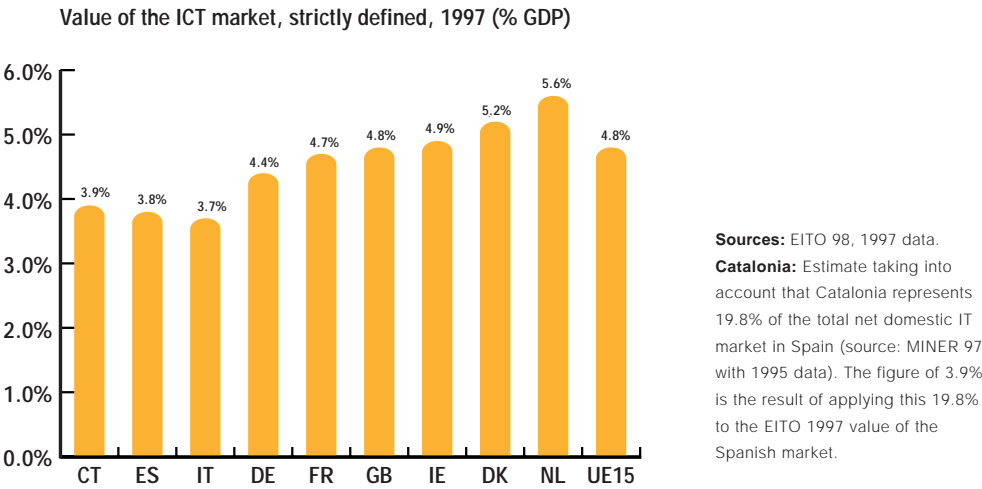


Figure 3. This graph shows the good position of Catalonia in the context of the IT market in Europe. ICT, as defined in a strict sense, echoing the definition of EITO, include the Information Technologies (computing) sector and the Telecommunications sector (operators). Therefore, all consumer and professional electronics, a very important sector in Catalonia, are excluded.

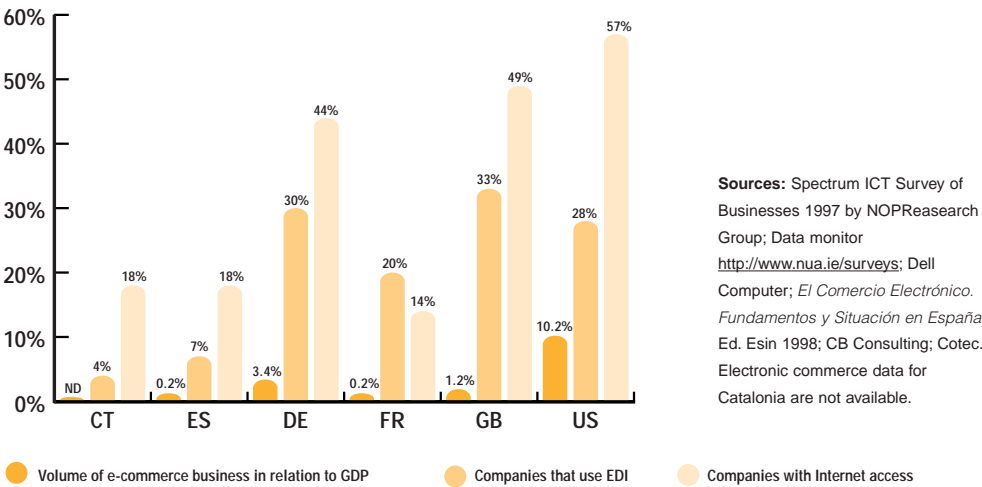


Figure 4. Volume of e-commerce and penetration of Internet and EDI in companies.

Initiative 1

Stimulation of demand.

The aim of this initiative is to stimulate the demand for products and services related to Information and Communication Technologies (ICT) by means of two types of actions. The first group of actions aims to create an environment that stimulates demand by generating new customs and suitable economic conditions, while the second group seeks to promote new products that will encourage consumption and users' needs for attractive and competitively priced ICT products.

Among the first group of actions are a series of initiatives to be undertaken by the Administration, which would consist in the Administration itself publicising its procurement plans for equipment and services related with Information and Communication Technologies. It would even reward the selection of suppliers according to their access and use of telematic tools. Finally, it would be necessary to reach a stage where public procurement via Internet was mandatory.

Actions:

- Creation of the cultural, infrastructure, economic and regulatory conditions that will increase demand for ICT products.
- Publication on the Internet of the procurement foreseen by the Administration in the short and long term, so that public sector ICT investments are made known to the ICT business sector, and the Administration may have a dynamic and stimulating effect on demand. Moreover, it will also be necessary to reinforce the fact that the administrations can in some way reward those suppliers who offer electronic procurement.
- Fostering the development of new products and attractive and innovative services for the consumer.

Agents:

Department of Industry, Trade and Tourism, public and private sector, CSI (Commissioner's Office for the Information Society), LOCALRET (Local Consortium for the development of telecommunications networks and new technologies), operators.



Initiative 2

Promotion of the Technology industries of the Information Society in Catalonia.

The aim of this initiative is to deploy a series of measures to strengthen the creation and production of companies that specialise in Information and Communication Technologies (ICT).

There are essentially two elements that promote change in this field: on the one hand, easier access to capital and the development of nurseries for ICT companies, and on the other hand, the promotion of a new model of company. To these elements we may also add tax incentives.

It is essential for Catalonia to become a leading force in the production of ICT, and this objective can only be attained if capital is made more available. It is necessary to establish suitable conditions for financing with Venture Capital for ICT companies and to promote start-ups led by graduates who are experts in Information and Communication Technologies. The objective is to double venture capital investments every year to the year 2003, when levels would reach those of countries such as Holland. At the same time, ways of creating suitable conditions whereby "Catalan ICT capital funds" can be made available will be studied. Therefore, it is necessary to complement financing initiatives with stock market actions, in as far as it is possible.

Within the package of tax incentives for companies that have invested in ICT (or in re-engineering processes and ICT-oriented training), it is necessary to define tax regulations that allow the capital gains obtained by creators of new businesses to be deferred, when these gains are reinvested in companies that have been created in the last six years. This is a good system, similar to the "Business Angel" system in the U.S.A., because businessmen that have successfully created a business in the past can help other entrepreneurs who are inexperienced. This system has been employed within the framework of the Strategic Plan for the Information Society in France.

Furthermore, within the group of actions designed to promote an environment of growth, it would be advantageous to promote the fact that the business sector is equipped with infrastructures with broadband services (cable or alternative technologies) in certain locations and suitably equipped industrial parks. In this respect, it is recommended that the land should be reclassified in planning terms and redefined for service companies, in order that they may compete for residential land. This would promote a concentration of multimedia companies on urban land, while it would also provide incentives for other

sites. In short, it should redound to the achievement of territorial cohesion.

Actions:

- Availability of capital: capital investment will be promoted by activating the possibilities of the venture capital management companies for their investment in Catalonia in the form of "seed capital", thereby instilling investors with natural confidence in order to promote private investment (business angel). Thus the following factors are also needed:
 - Institutional participation in IT Forums for European investors as co-organisers.
 - Encouragement and support of entrepreneurs with respect to the means and place of access to capital.
- Establishment of European consortiums in Catalonia. In this respect, it would be beneficial to create an Investment Forum for European business projects with its headquarters in Catalonia. This Forum may coexist as an internal development within the existing Catalan management companies.
- Specific tax treatment for the creation of ICT companies and for investments by companies in ICT.
- Establishment of an advanced research Network in the design and production of ICT products, with the joint participation of public and private researchers. This network will be available to the business sector as an additional infrastructure, and will be the result of the R & D initiatives of the Strategic Plan.
- Sharing of existing technological platforms, which can act as catalysts or promoters of new technologies. For example, BCN Activa, Infopime, ESA, etc.
- Provision of advisory services and a policy of support for new ICT entrepreneurs.
- Award of prizes for the best business initiatives relating to Information Society technologies.
- Review of the land in planning terms: adjustment of land classification to the new reality of ICT business, a context in which residential land can offer new potential for technological services companies.

Agents:

Department of the Economy and Finance, financial sector, Department of Industry, Trade and Tourism, private sector, television corporations, CSI, LOCALRET, local entities, multimedia sector, chambers of commerce.



Initiative 3

Promotion of the content creation business sector.

In order that the emergent sector of businesses that specialise in the creation of content may prosper in Catalonia, appropriate measures must be established for the microcompanies of which this sector is composed, as well as for the large companies in the audiovisual sector. It is a question of finding the best way to bring together the agents who will be players in the very near future in what is effectively the most important sector, due to the number of people that it will employ. According to a survey by CONDRINET of the EC, the audiovisual sector will grow 75% in the next 4 years, creating 300,000 new jobs in Europe.

On the other hand, there will be prolific growth in the creation of multimedia content, as a result of electronic publishing of the digital press, the leisure sector (interactive games) and content for training and education.

In order to be successful, this initiative requires a series of measures that will serve to strengthen the sector.

Actions:

- Definition of tax incentives for ICT investments and for adapting R & D to the multimedia sector.
- Creation of technological innovation centres of broadband multimedia services to act as catalysts with respect to the regional content sector. These centres of excellence (which will have a highly dynamic effect on the sector) will be responsible for the creation, supply and export of content in the Information Society as centres that integrate and support the Catalan SMEs in the content sector. The ultimate success of this objective lies in a reconsideration of the academic training of the professionals of the future, who for practical purposes will be free-lance workers that create their own jobs. In this context, attention must be focussed on the problem of cultural change at both business and academic levels.
- Co-ordination of the private and public sectors for the digitisation and creation of cultural, educational and tourism-related resources, whose availability will be essential. Every year, concerted action will be taken in each of these areas (tourism, education, culture/leisure).
- Creation of stable links between the educational projects of the Administration and companies in the content and ICT sector with a view to the future "interactive school". These agreements will represent a volume of business to be defined by both parties every two years.
- One of the large business areas for content will be the Latin American market. In this respect, promotional endeavours will focus on the creation and export of content produced in Catalonia and conceived from the outset as material for export. Awards will be given to the best initiatives in this field.

Agents:

Department of Culture, Department of Industry, Trade and Tourism, chambers of commerce, private publishing sector, various administrations, CUR (Commissioner's Office for Universities and Research), Universities, CSI, LOCALRET.

Initiative 4**Convergence of the audiovisual and multimedia sectors.**

Fostering of the convergence between the traditional audiovisual sector and the telecommunications sector on the one hand, and the audiovisual and multimedia sectors on the other hand. This initiative implies a reconsideration of business and the types of services and final products that the interactive audiovisual market will produce in a local market, but employing global strategies.

In order to attain this objective, agreements must be established between the cable and satellite operators, the suppliers of video servers, local television broadcasters, the suppliers of multimedia and audiovisual content and the administrations.

Actions:

- Promotion of the structure of audiovisual corporations that are influential in Catalonia, as a future commitment to the audiovisual and communication sector. On the other hand, support of the convergence between the present structure of television broadcasters in Catalonia and the applications derived from new technologies, in particular, Internet. An example would be to encourage the new operators to incorporate the content generated by local television broadcasters into the programming of certain channels. Advantage must be taken of the generation of local content by television broadcasters with a limited territorial range to complete the information available on the Internet.
- Establishment of an emblematic project (audiovisual and interactive) with a high profile, which will serve as a model.

It should also be noted that the local television broadcasters play a key role in the training and professionalisation of the future experts required by the sector.

Agents:

Department of Cultural Affairs, Catalan Radio and Television Corporation, television broadcasters, local entities, cable operators, CSI, LOCALRET, chambers of commerce.



Initiative 5

Promotion of electronic commerce.

The aim of this initiative is to boost the volume of electronic business of companies in Catalonia, in order to attain a 200% increase in turnover during the first year, and in this way reach the European average in 2003. The attainment of this goal will involve a series of promotional tasks, in addition to the application of tax and legal measures, which will be deployed in the area entitled THE FRAMEWORK OF THE INFORMATION SOCIETY as part of the group of initiatives that form the regulating framework of the Information Society.

The success of this objective essentially lies in the competitiveness of the business world, insofar as companies consolidate both business-to-business (B2B) transactions and a competitive presence in sales to the end consumer via the Internet. It will be necessary to have an appropriate business model for the new millennium, with the support of a package of tax and legal measures that promote electronic commerce and the presence of Catalan companies on the Internet.

Actions:

- Circulation of information to companies concerning the advantages of e-commerce and electronic transactions: it is necessary to inform and train companies in sales techniques, marketing and client support, concepts that are very different from those of traditional commerce, since these techniques must be adapted to many languages and other markets.
- Creation of (new) laws and customs, electronic cards and cash, and a legal framework that protects network transactions.
- Promotion by the Administration of electronic interchange procedures with its suppliers.
- Co-ordination with the corresponding associations and employers' associations in order to promote the introduction of standards for electronic data interchange in a Web environment into business-to-business (B2B) transactions.
- Support of clusters of combined initiatives in order to elaborate complex projects, in which only the synergies of the different players make it possible to create a sustainable trading centre. In such projects it will be necessary to introduce virtual trading centres supported by the participation of banks, television broadcasters and the corresponding sectors, as well as the content suppliers.
- Promotion of multicultural webs and on-line product and commercial services search engines, helping companies in two ways: they will gain a global presence on the Internet and businessmen can find the "Virtual Trade Fair" needed for their sector.
- Implementation of a series of actions and agreements that provide Catalan e-com-

merce with the logistics companies needed by the sector, at both a local and a global level. The success of electronic sales will lie not so much in price considerations as in the integral quality of the service, that is to say, in the fact that it is easier to gain access to a Catalan product or service than to its counterpart from another country.

- Promotion of virtual platforms that make it easy for the user to purchase and gain access to tourism and cultural resources of Catalonia, given the importance of the tourism and content sectors. Action here will involve agreements between cartography, tourism and hotel companies, tour operators, air, land and sea transport, municipal councils, etc.

With regard to the legal Framework that will encourage e-commerce and remove legal obstacles, these actions are defined in the area of the Strategic Plan entitled THE FRAMEWORK OF THE INFORMATION SOCIETY.

Agents:

Business Associations, Chambers of Commerce, Mixed commission for the establishment of the Legal framework of the Information Society, business sector, financial sector, television broadcasters, **CSI, LOCALRET**, local entities, etc.

Initiative 6

Adaptation measures for the business world.

Action on this front is essentially based on the continuous training of both management and non-management personnel, in order that change may be assimilated and the company and its workers adapt to the new model of business: part-time work, flexible tasks, team work, teleworking and a global market.

The implementation of training programmes for special groups in order to improve their knowledge or to impart knowledge should take the form of a permanent training programme that motivates the proactive participation of employees with respect to such continuous training. Specific training in technologies must be established for each individual sector.

It is also necessary to create confidence and "catalytic" plans around the large business associations and federations, in order to define, reach an agreement on and stimulate the



use of e-mail and electronic data interchange, using standardised sector-oriented web environments, through agreements and initiatives between companies and the leading employers' associations. The essential idea is to extend simple electronic transaction tools with WEB technology that have an immediate impact at a sectoral level (as a promotional platform for business-to-business [B2B]), an example being telematic procedures through unions and associations (electrical fitters, car repair shops, industrial unions, etc.).

In general, the objective is to introduce programmes that will boost the skills and capacity of employees within the new Information Society, and to implement pilot projects to publicise and exemplify the use of ICT in the business environment.

Actions:

- Prioritisation of public funds for continuous ICT training of professionals.
- Promotion of training in Information and Communication Technologies in companies:
 - Training for Catalan executives through agreements with business schools.
 - Training for professionals from different sectors.
 - Retraining of employees in ICT.
 - Grants for SMEs for training personnel in ICT.
- Sensitisation of the business sector to the new business model: e-commerce, teleworking, customer service, new management, etc.
 - Circulation of excellent public and private management experiences.
 - Creation of a forum to spread information concerning public and private experiences (best practices) with feedback to companies in the sector.
 - Spread of information and implantation of e-mail and WEB-EDI into Catalan companies, and publicisation of model pilot projects.
 - Agreements with business organisations to promote and co-ordinate projects.
 - Provision of tax incentives for ICT investments.

Agents:

Chambers of Commerce, FORCEM (Foundation for Continuous Training), Department of Industry, Trade and Tourism, CIDEM (Business Information and Development Centre), Department of Labour, employers' associations (Foment del Treball, PIMEC-SEFES, etc.) and trade unions.

02.3.2 Chart summarising the initiatives and actions

INITIATIVES	ACTIONS	AGENTS
Initiative 1 Stimulation of demand	<ul style="list-style-type: none"> • Creation of the cultural, infrastructure, economic and regulatory conditions that will increase demand for ICT products. • Publication of public planning and procurement via Internet. • Spread of marketing strategies to strengthen demand for ICT products. • Fostering the development of new and innovative products and services. 	Department of Industry, Trade and Tourism Public and private sector CSI LOCALRET Operators
Initiative 2 Promotion of the Technology Industries of the Information Society in Catalonia	<ul style="list-style-type: none"> • Promotion in Catalonia of venture capital and particularly "seed capital" promoted by private investment and business angels. <ul style="list-style-type: none"> - Institutional participation in IT Forums for European investors as co-organisers. - Encouragement and support of entrepreneurs with respect to the means and place of access to capital. • Promotion of the establishment of European consortiums in Catalonia. • Specific tax treatment for the creation of ICT companies and for investments by companies in ICT. • Establishment of an advanced research Network, of innovation and transfer of technology in ICT products: university-business sector. • Reinforcement of the present instruments of industrial promotion and services (ESA, Infopyme, Barcelona Activa, etc.), including promotion of physical and virtual nurseries of ICT companies. • Provision of advisory services and a policy of support for new ICT entrepreneurs. • Award of prizes funds for the best business initiatives relating to Information Society technologies. • Review of the land in planning terms: adjustment of land classification to the new reality of ICT business. 	Department of Economy Financial sector Department of Industry, Trade and Tourism Private sector Television corporations CSI LOCALRET Local entities Multimedia sector Chambers of commerce
Initiative 3 Promotion of the content creation business sector	<ul style="list-style-type: none"> • Definition of tax incentives for ICT investments and for adapting R & D to the multimedia sector. • Offer of business opportunities to new entrepreneurs. • Creation of broadband multimedia service centres to act as catalysts of creation, supply and export of content and services in ICT. • Co-ordination of the public and private sectors for the digitisation and creation of cultural, educational and tourism-related resources, and for the availability of these resources. • Creation of stable links between the educational projects of the Administration and the companies in the content and ICT sector, with a view to the future "interactive school". • Annual awards for the best initiatives in the export of content. 	Department of Cultural Affairs Department of Industry, Trade and Tourism Chambers of commerce Private publishing sector Various administrations CUR University CSI LOCALRET



Initiative 4 Convergence of the audiovisual and multimedia sectors	<ul style="list-style-type: none"> • Promotion of the local TV broadcasters and the production of local content. • Definition and implementation of an emblematic project in the interactive audiovisual field. 	Department of Cultural Affairs Catalan Radio and Television Corporation Local entities Cable operators CSI, LOCALRET Chambers of commerce
Initiative 5 Promotion of e-commerce	<ul style="list-style-type: none"> • Support in Catalonia for the creation of advanced learning centres in e-commerce. <ul style="list-style-type: none"> - Training, information and spread of e-commerce; promotion of tools, a protective framework for electronic payment transactions, sales and marketing techniques, virtual trading centres, etc. - Promotion of multilingual and multicultural Webs and on-line product and commercial services search engines, helping companies to gain a global presence. • Promotion by the Administration of electronic interchange procedures. • Co-ordination with the associations of different sectors to promote the introduction of WEB-EDI into business-to-business (B2B). • Support of clusters of combined initiatives in order to elaborate complex projects: television + banks + content companies. • Motivation of the restructuring of the logistics operators sector in a manner that is consistent with the requirements of e-commerce. • Promotion of e-commerce for the content and tourism sector. 	Business Associations Chambers of commerce Mixed commission for the establishment of the legal framework of the Information Society Business sector Financial sector Television broadcasters CSI LOCALRET Local entities
Initiative 6 Adaptation measures for the business world	<ul style="list-style-type: none"> • Prioritisation of public funds for continuous ICT training of professionals. • Promotion of training in ITC in companies: <ul style="list-style-type: none"> - Training for Catalan executives through agreements with business schools. - Training for professionals from different sectors. - Retraining of employees in ICT. - Grants for SMEs for training personnel in ICT. • Sensitisation of the business sector to the new business model: e-commerce, teleworking, customer service, new management, etc. • Circulation of excellent public and private management experiences. • Creation of a forum to spread information concerning public and private experiences (best practices), with feedback to companies in the sector. • Spread of information and implantation of e-mail and WEB-EDI into Catalan companies and publicisation of model pilot projects. • Agreements with business organisations to promote and co-ordinate projects. • Provision of tax incentives for ICT investments. 	Chambers of commerce FORCEM CIDEM Department of Labour Employers' associations (Foment del Treball, PIMEC-SEFES, etc.) and unions

02.3.3 Co-ordinator, moderators and members

Co-ordinator

Mr. Josep Oliu Creus

Banc Sabadell

Moderators

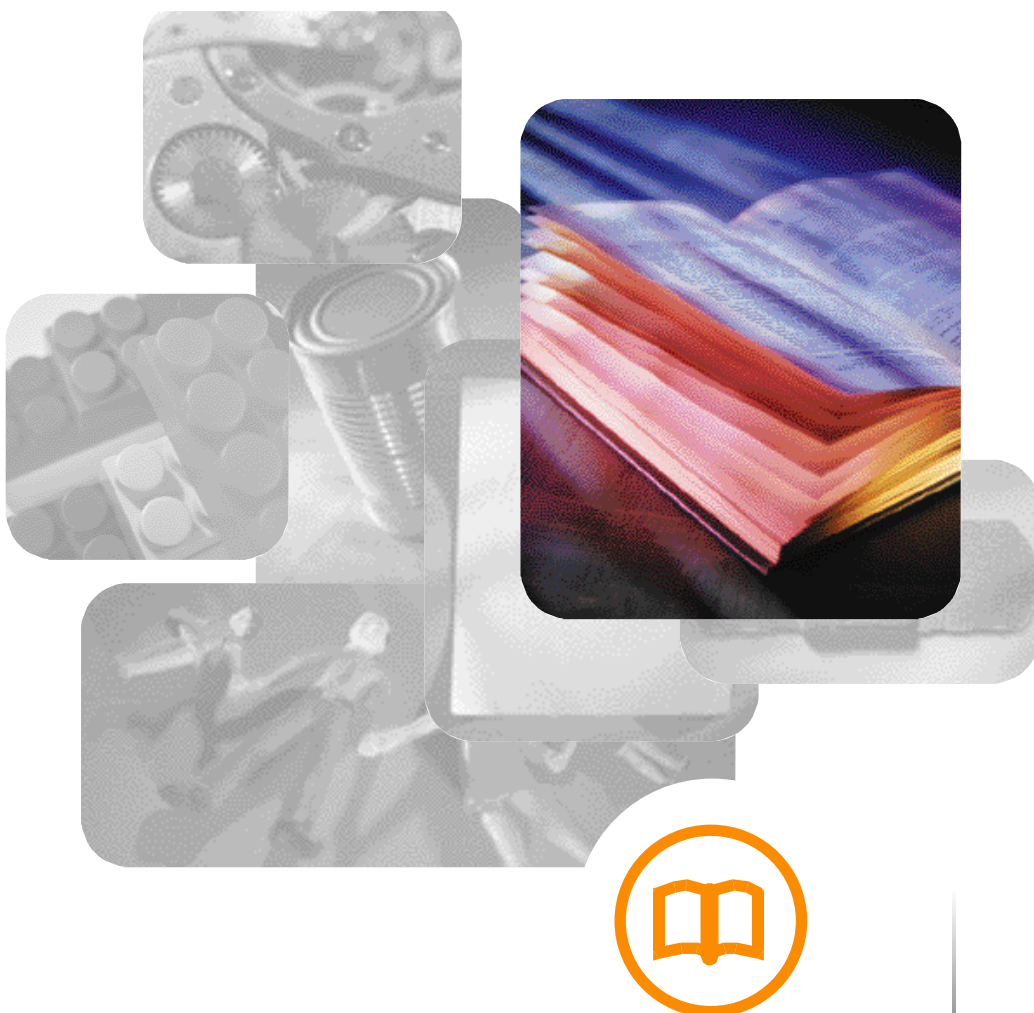
Mr. Miquel Barceló Roca

Catalan Institute of Technology (ICT)

Mr. Jordi Masias Muntada

Official Chamber of Commerce, Industry and Shipping of Barcelona

Mr. Pere Acebillo Marín	GEC
Mr. Joan Alsina Jiménez	Catalana d'Iniciatives CR, SA
Mr. Josep Ma. Antúnez Xaus	Borsa de Barcelona (Barcelona Stock Exchange)
Mr. Joan Basacoma Lletjos	Spanish Assocn. of Importers of Electronics Products (ASIMELEC)
Mr. Xavier Berenguer Vilaseca	University Audiovisual Institute (UPF)
Mr. Joaquim Bisbal Méndez	Open University of Catalonia (UOC)
Mr. Esteve Borell Marco	CIRSA
Mr. Armando Calvo Florenza	Editorial Planeta (Publishing house)
Mr. Joan Canal	Centre de Càlcul Sabadell (CCS)
Mr. Josep Casanovas Garcia	Computer Science Faculty of Barcelona (FIB)
Mr. Jordi Casas Cadevall	CECOT
Mr. Agustí Chicón Altet	ALCATEL
Mr. Ramón Coll Sandiumenge	Banc de Sabadell
Mr. Jordi Damià	Fira de Barcelona (Barcelona Trade Fair)
Mr. Eudal Domènech	IP-MULTIMEDIA
Mr. Jorge Edelman González	ORACLE
Mr. Antoni Esteve Avilés	LAVÍNIA TV
Mr. David Giménez	Telematics Department of PIMEC-SEFES
Mr. Rafael Gomis Bosch	Computer Systems Department - Port of Barcelona
Mr. Carles Grau Lara	Sun Microsystems Computer Company
Mr. Domingo Jaumeandreu Ros	SONY ESPAÑA, SA
Mr. Benet Llebaria Casañé	ENCICLOPÈDIA CATALANA, SA
Mr. Antoni Massanell Lavilla	Caixa d'Estalvis i Pensions de Barcelona (Savings bank)
Mr. Santiago Miralles Colomina	Televisió de Catalunya (TVC)
Mr. Carlos Nàcher Mateu	Banco Bilbao Vizcaya (BBV)
Mr. Joaquim Oliveras Grau	Spanish Assocn. of Information Technology Companies (SEDISI)
Mr. Ramir de Porrata-Dòria Yagüé	National Assocn. of Electronics and Telecommunications Industries (ANIEL)
Mr. Josep Puig Mestres	Proeditors
Mr. Francesc Raventós y Torras	Catalana d'Iniciatives CR, SA
Mr. Miquel Roca Junyent	Roca Junyent Association of Lawyers
Ms. Maravillas Rojo Torrecillas	Barcelona City Council
Mr. Àngel Ros Domingo	COBEGA
Ms. Blanca Rosa Roca	Zeta Group (Publishing group)
Mr. Tomás Sobrequés Callicó	Girona City Council
Mr. Eugeni Terré Ohme	Business Information and Development Centre (CIDEM)
Mr. Josep Torra Vilanova	Barcelona Virtual
Mr. Joan Torrella Reñé	Barcelona City Council
Mr. Josep Ma. Ureta	El Periódico de Catalunya (Newspaper)
Mr. Francesc Valera	Family Business Institute



02.4	Education and Training	02.4.1	Description of the initiatives and actions
		02.4.2	Chart summarising initiatives and actions
		02.4.3	Co-ordinator, moderators and members

02.4.1 Description of the initiatives and actions

More than ever before, education and training represent a future challenge to be faced. A knowledge of information and communication technologies (ICT) is vital both for teachers and pupils, considering the whole of society as pupils. Rather than simply learn technology, it is much more important to learn with technology, learning to be able to use the information and to work in the new environment of the Information Society. Therefore, in this new context, the challenge to be faced is teaching to learn.

Interactivity with the environment and the possibilities offered by both the new content and the network mean that the pupil-teacher relationship is basically "interactive" within a process of mutual enrichment. The traditional role of the teacher as the exclusive transformer of knowledge has become a role of "guide".

There is an urgent need for a training plan for trainers that takes account of the present change, and it is also vital that training should no longer be seen as an activity performed during a specific period of our lives. We should begin to view it as part of day-to-day life.

The essential initiatives that Catalonia on the Network will deploy in the EDUCATION AND TRAINING area focus, on the one hand, on the new role of the trainer, and on the other hand, on the structural change that the education community is undergoing, with respect to its organisation and management, and also to the change/adjustment of curricula to continuous education and training, and to the deployment of infrastructures.

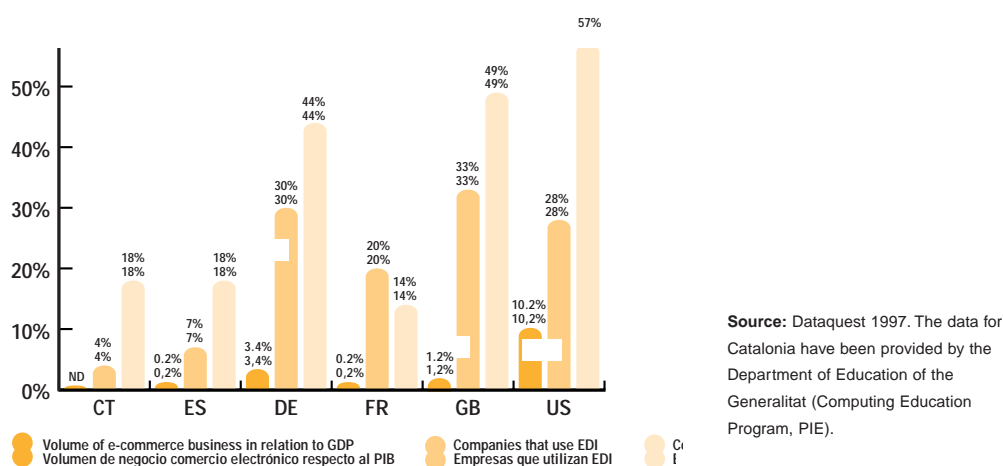


Figure 5. By September 1999, the Argo project will have equipped Catalan state schools with a further 10,000 computers (to add to the 20,000 already installed). The ratio of 30 pupils/PC will drop to 20 pupils/PC in autumn 1999.

Initiative 1

Introduction of curricula adapted to the needs of the Information Society.

It is necessary to adapt the curriculum in all fields of teaching, reviewing it in the light of the new types of knowledge required by the Information Society, incorporating Information Technologies into the curriculum and highlighting the contributions of these technologies, especially with relation to information procedures. Furthermore, it should be made obligatory for the curricular projects of non-university learning centres to adopt strategies that will guarantee the systematic and progressive incorporation of Information Technologies, as well as equal opportunities for pupils.

Actions:

- Adaptation of state education curricula, phasing in ICT.
- Promotion of the exchange of experiences with the incorporation of "virtual" elements.
- Definition of new educational curricula for both compulsory schooling and higher education.
- New study plans orientated towards the new professional profiles required by the Information Society.
- Training in the creation of multimedia content.

Agents:

Department of Education, CUR (Commissioner's Office for Universities and Research)
/ Universities, INCANOP (Catalan Institute of New Professions), networks of schools, local bodies.

Initiative 2

Initial and continuous training of teaching staff.

The key to the success of the change will lie in the extent to which teachers are conscious of the need to "master" the new technologies, in order that the infrastructure available - network and digital content - is really used and forms a structured part of teaching tasks. This initiative includes new study plans, promotion of interdisciplinary research and a continuous training plan.

The initial training of the present teaching staff and their personal experiences are characteristic of an environment in which the presence of Information and Communication Technologies is limited. This is also applicable to the management teams. In general terms, teaching staff are conscious of the present or potential effect of Information Technologies on their professional activity and struggle against computer illiteracy by participating intensely in permanent training. However, this fact does not automatically lead to the use of technology with the pupils, nor does it guarantee the reconsideration of certain issues relating to the manner in which they perform their work and how their job is to evolve. Nor does training alone guarantee that the changes in the collective mentality of teachers required by continuous educational innovation take place.

In summary, the following actions must create the "change", and they should also serve as encouragement to use Information Technologies on a day-to-day basis.

Actions:

- Introduction into the teacher training study plans of an awareness of the impact of Information and Communication Technologies on specific methodology and the various subjects that are studied.
- Development of a continuous training plan based on the framework of knowledge and skills required, which will first be defined for each educational profile.
- Promotion of interdisciplinary research on Information and Communication Technologies that will integrate people and groups at different levels of the education system.
- Support and encouragement of the participation of groups and centres in joint projects at both national and international levels.
- Creation of a space on the Web for access to materials, information and training tools and self-learning.

The portal or space for access to information materials will make the following available: firstly, didactic units; secondly, particularly relevant world educational resources; thirdly, databases of Catalan educational resources; fourthly, raw material for the creation of other materials, and fifthly, an excellent tool for self-learning.

**Agents:**

ICEs (Institutes of Educational Sciences), Department of Education, CUR (Commissioner's Office for Universities and Research), networks of schools, local entities.

Initiative 3
Programme for adult education and continuous training.

The key to attaining a high level of employment in Catalonia is linked with the skills and expertise of the population. Other countries such as the U.S.A., for example, have placed considerable emphasis on the training of three groups: women, those people who are beginning their professional careers and the group of people who are likely to take early retirement. Continuous training of adults can greatly improve their possibilities of finding a job. This potential for employment is associated with the capacity of the population to understand and use the new Information Technologies. Continuous training in Information Society-related subjects, in accordance with professional specialities, is the best approach to take in order to anticipate the skills that the Information Society will require.

Actions:

- Advantage will be taken of the educational infrastructure, in order to train adults in Information and Communication Technologies with a view to incorporating them into the Information Society.
- Promotion of continuous training in business and employment environments by means of the new technologies.
- Creation of new professional profiles and retraining of existing profiles for conventional professions.
- Specific training for groups with special needs and for the elderly.

Elderly people as a group will have an important part to play in the new society, and therefore this initiative will consolidate the commitment already made to educating the elderly in the new technologies.

Agents:

Department of Social Welfare, Department of Labour, universities, private entities, CSI, local entities.

Initiative 4

Creation and exchange of educational materials: a virtual market.

The policy of deployment of infrastructures must be accompanied by the development of pedagogic content. Part of the strategy consists in paving the way for the emergence of an educational multimedia and audiovisual industry that will motivate and at the same time provide support for educational practices. There is a shortage of multimedia products that are well-adapted to the cognitive process of pupils, the organisation of the class and curricular subjects. Within education in Catalonia, the task must therefore be undertaken of developing a multimedia (or audiovisual) product concept that has been adapted to these new needs. In this respect, a variety of actions will be necessary, whereby teachers may participate temporarily or definitively in the private structures of the publishing world. The virtual market is an area for the exchange of didactic material to which teachers and businesses have access and where they may deposit material (content broker).

It is necessary to promote the use of digital resources for collective communication and information in all teaching centres, and it is also important to establish and maintain logical infrastructures of access to and creation of digital content. In particular, there is a need to foster internal and external management of information that is "as paper-free as possible".

In general, this initiative will boost the creation and exchange of didactic materials. Therefore, as well as being a consolidating tool and an important one for all, most importantly it will provide a point of access for rural areas.

Actions:

- Establishment of a content digitisation programme.
- Creation of new multimedia materials.
- Incorporation into educational broker (llojja) of all the organisations and groups involved in the creation of telelearning, "edutainment", "documentalism" and digital press.
- Association of foundations, publishing companies in the educational sector, companies from the audiovisual sector and platforms of operators for the joint creation of didactic materials.
- Organisation and presentation of the educational offer to be found on the virtual market.
- Integration of content from libraries as an important part of the virtual market.
- Interaction between the multimedia learning material research centres and the educational network on the one hand, and the virtual market on the other.

**Agents:**

Department of Education, CUR (Commissioner's Office for Universities and Research), audiovisual/multimedia sector, private publishing sector.

Initiative 5

Promotion of organisational and structural change in education centres and deployment of the virtual community formed by these centres.

Information Technologies inevitably bring about changes in the structure of organisations, operational regulations and methods of production. Likewise, they modify the role of people and make it necessary to redefine relations with clients and with the environment in general. If these considerations are applied to the area of education, it may be said that in order to integrate Information Technologies into the education system, leaving the infrastructures aside, it is not sufficient to organise the training of the teaching staff and to increase the availability of new content, factors that have been given priority to date. In order to integrate Information Technologies into education, it is essential that considerable emphasis is also placed on the organisation and management of teaching centres.

Therefore, it is necessary to establish suitable measures, so that the incorporation of Information Technologies into the curriculum and the curricular planning of each teaching centre may take place by means of flexible organisational formulas. In order to ensure that the change is successful, it is necessary to include the management of the technology among the series of tasks that fall to the responsibility of the management teams of the teaching centres, while plans must also be made with respect to the economic allocation required and the personnel needed to operate the physical and logical infrastructures of these centres. Furthermore, it is necessary to establish a framework for specific competence in Information Technology for the entire active teaching staff, obligatorily extending this to the students of the education faculties and the teaching profession entrance exams.

Another factor that affects the attitudes of the teaching staff is determined by the valuation in economic and career terms (transfer exams, study leave, public entrance examinations, etc.) of the activities that the teaching staff perform or can claim they perform in the area of Information Technologies (co-ordination of computing in teaching centres, permanent training in information technology, development of computing applications,

co-ordination of experiences, etc.).

Moreover, there is a need to establish measures concerning school architecture that guarantee the physical presence of broadband wiring in the majority of teaching centre buildings and the safe electrical connection of a large number of computers. Further guarantees must be given that the future construction and refurbishment of buildings will provide areas or facilities where Information Technologies can be intensively used for work in projects and in groups.

It is necessary to make budgetary and organisational forecasts for a continuous deployment of technological infrastructure in the teaching centres, covering both new investments and maintenance. In this way, while guaranteeing the minimum equipment that is essential, each centre can have the financial and human resources in accordance with its projects and the corresponding accreditation of results.

The use of virtual spaces (virtual campuses or schools) will be one of the future changes that will reinforce the interaction of pupils with remote resources and multicultural communities.

Actions:

- Incorporation of ICT into the educational project of the centres, in such a way that systematic and progressive globalisation is guaranteed as an institutional objective at the different levels of conception, management and execution.
- Integration of ICT (equipment, connectivity, networks) into the design and construction projects of the education centres (connectivity in the classroom).
- Inclusion among the criteria by which teaching staff are recognised and promoted of endeavours in innovation and institutional development through the promotion and application of ICT to educational activities.
- Fostering at various educational levels of the potential to be derived from the use of virtual spaces and campuses.
- Creation of basic multidisciplinary teams and technical and pedagogic support for (regional) areas of education.
- Reinforcement of the capacity of ICT for integrating various special needs groups, with a view to facilitating their access to the education system.

Agents:

Department of Education, CUR (Commissioner's Office for Universities and Research) / Universities, networks of schools, private entities, local entities.

**Initiative 6****Plan to provide Infrastructures.**

Within a very short period of time, computers will form part of the standard school furnishings and they will become integrated into the classroom, serving as a multimedia blackboard; the classroom will therefore have both a magisterial and an interactive ingredient. The pupil/computer ratio in schools will have to decrease, and the aim will be to reach a ratio of 10 pupils per computer within the next four years. Other important aspects of this change relate to the architectural infrastructure of the school and access to Internet. The architectural, technical and communications infrastructure of the teaching centres will have to evolve considerably, in order to make new working and organisational dynamics possible.

Actions:

- Provision of an equipment and connectivity plan for public centres that will give all education centres access to virtual, documentary and training services, progressively increasing their connection speed until certain broadband standards are reached.
- Allocation of an electronic mail address and, possibly, a presence on the Web (Web pages) for the entire community of education centres.

Agents:

Department of Education, CUR (Commissioner's Office for Universities and Research) / Universities, networks of schools, private entities.

02.4.2 Chart summarising the initiatives and actions

INITIATIVES	ACTIONS	AGENTS
Initiative 1 Introduction of curricula adapted to the needs of the Information Society	<ul style="list-style-type: none"> • Adaptation of state educational curricula, phasing in ICT. • Promotion of the exchange of experiences with the incorporation of "virtual" elements. • Definition of new educational curricula for both compulsory schooling and higher education. • New study plans orientated towards the new professional profiles required by the Information Society. • Training in the creation of multimedia content. 	Department of Education CUR / Universitat INCANOP Networks of schools Local entities
Initiative 2 Initial and continuous training of teaching staff	<ul style="list-style-type: none"> • Introduction into the teacher training study plans of an awareness of the impact of ICT on specific methodology and the various subjects that are studied. • Development of a continuous training plan based on the framework of knowledge and skills required, which will first be defined for each educational profile. • Promotion of interdisciplinary research that will integrate groups at different levels of the educational system. • Support and encouragement of the participation of groups and centres in joint projects at both national and international levels. • Creation of a space on the Web for access to materials, information and training tools and self-learning. 	Department of Education ICEs CUR / Universities Networks of schools Local entities
Initiative 3 Programme for adult education and continuous training	<ul style="list-style-type: none"> • Advantage will be taken of the educational infrastructure, in order to train adults in ICT with a view to incorporating them into the Information Society. • Promotion of continuous training in business and employment environments by means of the new technologies. • Creation of new professional profiles and retraining of existing profiles for conventional professions. • Training of groups with special needs. 	Department of Social Welfare Department of Labour Universities Private entities CSI Local entities



Initiative 4 Creation and exchange of educational materials: a virtual market	<ul style="list-style-type: none"> • Establishment of a content digitisation programme. • Creation of new multimedia materials. • Incorporation into educational broker of all the organisations and groups involved in the creation of telelearning, "edutainment", "documentalism" and digital press. • Association of foundations, publishing companies in the educational sector, companies from the audiovisual sector and platforms of operators for the joint creation of didactic materials. • Organisation and presentation of the educational offer to be found on the virtual market. • Integration of content from libraries as an important part of the virtual market. • Interaction between the multimedia learning material research centres and the educational network on the one hand, and the virtual market on the other. 	Department of Education CUR / Universities Audiovisual/multimedia sector Private publishing sector
Initiative 5 Promotion of organisational and structural change in education centres and deployment of the virtual community formed by these centres	<ul style="list-style-type: none"> • Incorporation of ICT into the educational project of the centres, in such a way that systematic and progressive globalisation is guaranteed as an institutional objective at the different levels of conception, management and execution. • Integration of ICT (equipment, connectivity, networks) into the design and construction projects of education centres (connectivity in the classroom). • Inclusion among the criteria by which teaching staff are recognised and promoted of endeavours in innovation and institutional development, through the promotion and application of ICT to educational activities. • Fostering at various educational levels of the potential to be derived from the use of virtual spaces and campuses. • Creation of basic multidisciplinary teams and technical and pedagogic support for (regional) areas of education. • Reinforcement of the capacity of ICT for integrating various special needs groups, with a view to facilitating their access to the education system. 	Department of Education CUR/Universities Networks of schools Private entities Local entities
Initiative 6 Plan to provide Infrastructures	<ul style="list-style-type: none"> • Provision of an equipment and connectivity plan for public centres that will give all education centres access to virtual, documentary and training services, progressively increasing their connection speed until certain broadband standards are reached. • Allocation of an electronic mail address and, possibly, a presence on the Web (Web pages) for the entire community of education centres. 	Department of Education CUR/Universities Networks of schools Private entities

02.4.3 Co-ordinator, moderators and members

Co-ordinator

Mr. Gabriel Ferrater Pascual

Open University of Catalonia (UOC)

Moderators

Mr. Ferran Ruiz Tarragó

Education Department (PIE)

Ms. Montserrat Llinés Soler

Autonomous University of Barcelona (UAB)

Ms. Iva Alguera	ABC (Newspaper)
Mr. Virgilio Aranda Rodrigo	University of Lleida (UdL)
Mr. Ramon Barlam	IES Llobregat
Mr. Manuel Blascoi Legaz	Municipal Institute of Education
Mr. Ramon Cemeli	ACTE (Rosa Sensat Organisation)
Mr. Josep Antoni Delgado Rivera	Catalan Institute of New Professions (INCANOP)
Mr. Joan Domènech	Federation of Pedagogic Renovation Movements
Mr. Jordi Fernández	CEAC
Mr. Juan Carlos Gallego Herrera	Comisiones Obreras (CCOO) (Spanish workers' union)
Mr. Manuel Hurtado Barrero	OffCampus
Mr. Francesc Labastida Azemar	Institute of Architects
Mr. Antoni Manyé Martínez	Education Services
Mr. Enric Marco Batlle	Catalan Federation of Parents
Ms. Imma Marín Santiago	Federation of Children's Play-centres
Mr. Miquel Martí Solé	UNESCO
Mr. Josep Martí Roca	La Salle Bonanova
Ms. Maria Mirabet Vallhonestà	Catalan Institute of Technology (ICT)
Mr. Josep Ma. Monguet	Polytechnical University of Catalonia (UPC)
Mr. Juli Palou Sangrà	Department of Language and Literature Education
Mr. Martí Parellada Sabata	Palau de les Heures Vall d'Hebron (Univ. of Barcelona)
Mr. Xavier Ritort Ferran	DOXA Consulting
Mr. José Luis Rodríguez Illera	Institute of Educational Sciences (ICE, UB)
Ms. Blanca Rosa Roca	Zeta Group (Publishing group)
Mr. Jaume Sarramona López	Catalan School Council
Mr. Jaume Teodoro Sadurní	Polytechnical University School of Mataró
Ms. Roser Torres	ACAE
Mr. Antoni Tort Bardolet	University of Vic
Mr. Joan Triadú Carré	ROSA SENSAT
Mr. Miquel Trilla de Bruguera	Catalan Association of Municipalities (ACM)
Mr. Jordi Vivancos Martí	Department of Education (PIE – Educational Computing Programme)



- ## 02.5 Administration and Services to the Citizen
- 02.5.1 Description of the initiatives and actions
 - 02.5.2 Chart summarising initiatives and actions
 - 02.5.3 Co-ordinador, moderators and member



02.5.1. Description of the initiatives and actions

Information technologies will lead to the conception of new ways of making services and useful information available to the citizen in digital form, and therefore at minimum cost, with immediate access, 24 hours a day, making administrative procedures easier to complete and saving citizens and businesses time. In short, the quality of the service provided by the administrations will be improved. It must also be said that the use of information and communication technologies will facilitate and foster the exchange of information in ways unknown until now. These transformations mean that deep reflection is called for concerning the modernisation of working methods and their organisation. In order to achieve this change, a policy of sensitisation and training of personnel is necessary, in addition to a commitment to change on the part of the administrations.

The area ADMINISTRATION AND SERVICES FOR THE CITIZEN includes all kinds of telematic services provided by public and private entities that are important, on the one hand, for society (citizens and companies), and, on the other hand, for the exchange of data and services between the various administrations.

Catalonia on the Network will include the services of all the departments of the Generalitat (Autonomous Government of Catalonia), the services of local and supralocal entities, and all those private services that are considered to be of interest to citizens (for example, the RACC [Royal Catalan Automobile Club], electricity companies and/or other organisations).

To have easy access to public information, in addition to private information of relevance to citizens, constitutes an essential prerequisite for the exercise of civic rights, as well as for the competitiveness of Catalan industry. Therefore, the Administration must act as a dynamo of change towards a balanced Information Society, in which public sector information and services are "fundamental to the efficient operation of the domestic market and the free circulation of goods, services and people".²

2. Public sector information: a key resource for Europe. Green Book on public sector information in the Information Society COM (1998) 585, p. 1.

Initiative 1

Public information on the network: Access to European, national, regional and local public information and information of social interest.

The use of the new technologies, in particular the Internet, facilitates communication between the Administration and both citizens and companies. The type of information requested by citizens is information provided by various public and private entities, and it is currently dispersed. The organisation and classification of this information with a specialised search engine will make it easier for citizens to gain access to information and will offer them a value-added service.

The information available on the network will basically be all the information of a public nature that the citizen is entitled to request or gain access to, or information in the form of advisory services, consultation of records, etc. The value and success of this search engine, which will include information about the array of initiatives undertaken by the Administration, will depend on whether it is able to compile at least 80% of the information (information that will continue to grow gradually) that 80% of citizens need (80/80 information³). Obviously, this concept includes access to fundamental databases (records, land registry, cartography, etc.), but also information that is essential for day-to-day life (such as transport, emergencies, disasters, leisure, culture, etc.). In order to achieve this dynamic provision of information and to ensure the optimum organisation of civic life, while also keeping the cost low, it will be essential that the information from the public and private entities is correctly interrelated.

Access to non-administrative information can also be extremely important to company decision-making processes. An example here is statistical, financial or geographic information, which is crucial when deciding upon business strategies or undertaking certain investments. A lack of information may considerably delay decisions concerning international operations.⁴

A greater transparency of public sector information can reinforce the rights conferred within the European Union by improving the practical conditions in which these are exercised.⁵

3. 80/80 information is defined as the information that 80% of users seek on 80% of occasions on which they access the service.

4. Green Book. Public sector information: a key resource for Europe, p. 5

5. Green Book on Public sector information COM (1998) 585, p. 3

Actions:

- Creation of a search engine through which local and remote users may gain easy access to public interest information. The search engine should have 80% of the content that citizens require in 80% of cases, and access will be available to:
 - The agreements, acts, bye-laws and bulletin boards of the administrations.
 - The databases of the Administration. With respect to these, the different registers will be catalogued as "public domain" or "value-added", according to their type; such classification will determine whether access to the information is free or there is an obligation to pay. (For example, land registry, cartography, property register, etc.)
 - The specific portals of the various administrations.
- Constitution of a mixed committee that will monitor and maintain the search engine, overseeing the quality of the service provided.
- Organisation and presentation of information for companies with:
 - Electronic publication of investment planning and electronic procurement (tenders, purchases).
 - Integrated electronic publication of key information for businesses: procedure for creating a business, financial and geographical statistics, etc.
 - Establishment of an electronic directory of businesses in Catalonia, along the lines of the standardised European registers (European Business Register, EBR).

Agents:

Generalitat (Autonomous Government of Catalonia), local entities, public and private collaboration throughout Catalonia, Spain and Europe.

Initiative 2

The intranets of the Administration: interchange of data between the administrations and progressive implantation of standards concerning inter-administrative interchange.

A key objective when seeking to improve the quality of service provided by the Administration to citizens and businesses is the improvement of the Administration's interaction with these citizens and businesses. The latter should be offered electronic access,



from any place and at any time, to public information and services, and given the opportunity to complete, by means of electronic transactions, all the possible administrative procedures in the exercise of their rights or in compliance with their obligations.

The requirements for this objective to be attained are, firstly, the gradual automation of processes, beginning with the most frequent procedures and those that affect the greatest number of citizens; secondly, a progressive agreement with regard to the use of agreed formats/standards, and thirdly, standard use of telematics within the administrations. The entire group of telematic services for the citizen constitutes the framework that will consolidate the Open Administration of Catalonia of the future.

Actions:

- Creation of an office for the standardisation of electronic procedures in the public sector, and definition of the standards and minimum conditions of access to be offered to citizens.
- The permanent mixed committee constituted in Initiative 1 will oversee the proposals for the future and the continuous modernisation of the Administration.
- Use of e-mail for circulars and introduction of a standard notification service.
- Prioritisation of electronic procedures (census and residence, payment of contributions and taxes, etc.) and progressive implementation of these procedures.
- Co-ordination of the use of databases belonging to different administrations. The commission created in Initiative 1 will ensure that their interoperability is accepted as a key directive by the various administrations. This action includes the interrelation of data involved in emergency plans.
- Electronic public procurement: Electronic interaction with suppliers.
- Electronic procedures for the creation of businesses to be available at all the administrations.
- Progressive automation of processes (advanced procedures) between administrations (progressive computerisation of administrative forms (30% 1st phase, 70% 2nd phase).

Agents:

Generalitat (Autonomous Government of Catalonia), regional councils, local entities, private public interest organisations (RACC [Royal Automobile Club of Catalonia], electricity companies and other public utilities), EC / Catalan Pro-Europe Organisation (*Patronat Català ProEuropa*), Ministry of Public Administrations.

Initiative 3

Access for citizens to electronic procedures: authentication of the citizen's electronic signature.

The possibility of using the communication networks, and especially Internet, to complete on-line procedures on the one hand, and the plans to validate communications and transactions by electronic mail, consultation of registers, etc., on the other hand, determine the basic needs of legal entities with respect to having electronic identification mechanisms at their disposal.

An electronic identification system has been proposed that will include the progressive implementation of an electronic card for possible multifunctional use (to gain access to procedures with the Administration, the Health Service, etc.) and the creation of bodies that will certify or authorise individuals or entities. Electronic identification and authorisation is the legal framework that the future Open Administration of Catalonia will have to provide, and this is planned as one of the initiatives in the area entitled THE FRAMEWORK OF THE INFORMATION SOCIETY.

This initiative must also include the legal definition for administrative purposes of what information the citizen is entitled to find on the network, information that the Administration must therefore provide. It is important to use the considerable resources held in the databases to which only the Administration has access, and a progressive policy of opening up these databases must be fostered. "The Charter of Citizens' Rights in the Information Society" must outline the rights of the citizen concerning access to information.

Identification via Internet - electronic signature - and the authentication procedure will adhere to the corresponding European standards.

Actions:

- Creation of a Commission responsible for defining and extending the "The Charter of Citizens' Rights in the Information Society".
- Launch of a project that will facilitate the establishment of the Open Administration of Catalonia (authentication and legal framework), integrate authentication, encryption and, in short, safe procedures, guaranteeing the privacy of communication between the citizen or the company and the Administration.
- The electronic signature will be supported by electronic card technologies. Vertical and horizontal pilot tests will be scheduled.



The electronic card will be phased in for use by the citizen in stages: the first stage will take the form of a pilot phase in circles within the Administration; the second stage will extend to larger groups; finally, during a third stage, the card will be distributed to the entire population.

Agentes:

CSI, LOCALRET, administrations.

Initiative 4

Inclusion of legal procedures in the group of electronic services provided by the Administration.

The new information and communication technologies not only make it possible to automatically complete routine tasks and reports, but also to phase out the paper medium in favour of the digital medium, leading to quick and efficient enquiries and searches. The general implantation of these tools and applications for use with legal procedures will result in the improved efficiency of the service.

Actions:

- Improvement of the infrastructures in operation.
- Interaction with standards in order to progress towards a flexible interchange of data in a Web environment.
- Automation of all the legal services.
- Study of the possible introduction of electronic authentication of legal documents and practices, and proposal of a standard notification service for the purpose of "notification" and "summons" to trial. The ultimate aim is to reach the point where the Internet is used as an additional tool of communication between the judicial system and the citizen. Telematic communication between the judicial system and both citizens and the judiciary would save considerable time in procedures and would optimise judicial procedures and internal tasks.

Agents:

Department of Justice, Courts, Police, administrations.

Initiative 5

Mobility issues and management of thematic, territorial and emergency information.

The Corfu report drawn up by the Bangeman Commission identified traffic information systems and the applications derived from these as one of the areas of application for the construction of the Information Society. The generation of efficient information relating to the dynamic conditions of mobility within a territorial area and the spread of this information by means of all kinds of multimedia technologies can help to improve the conditions in which the transport networks are used, with the resultant saving of time and social costs. This information will make it possible to introduce more efficient management of various economic activities (such as those associated with fleet management, the handling of emergencies, environmental co-ordination, the property market, public and private transport, etc). It will also generate new business opportunities associated with transport information and instigate changes in the behaviour of users, since use of the road network may be rationalised, as a result of changes in travelling habits and modes of transport.

Geographic information systems represent a strategic resource that must be further developed. Their application to mobility systems, co-ordination of emergencies, territorial management and co-ordination and many other areas make them extremely powerful tools. Data normally held by the various agents (concerning traffic, accidents, emergency points, etc.) will be accumulated in a virtual location that is accessible to all. All the agents that provide information will have equal access to the use of any part of it.

Actions:

- Access of citizens to an integrated mobility and civil defence service.
- Progressive implantation of intelligent management of the information provided by the various private agents and the administrations, which will include the following:
 - Establishment of institutional agreements for the integration of databases.
 - Organisation of an integrated management system among the various agents.
 - Creation, on the one hand, of an integrated cartographic system of Catalonia for the use of the administrations, and, on the other hand, of geographic information systems for the citizen by means of GIS (Geographic Information System), GSM (digital cellular telephony), SMS (message system). This action also includes cartography relating to operational plans in the event of emergency.

In addition to this, there is a need to employ Intranets to co-ordinate the joint use of the data



held by public and private entities concerned with emergency action, an aspect that is considered in Initiative 2.

Agents:

Department of Territorial Policy, Catalan Institute of Cartography, Department of Industry, Trade and Tourism, infrastructure and transport services supply companies, local entities.

Initiative 6

Training and refresher courses for Administration personnel and citizen support services.

The use of Information Technologies not only improves the internal operations of an administration, but also boosts communication between the various agents within administrations and their interaction with citizens and businesses. This initiative basically entails the modernisation of the various Catalan administrations. It should be noted that the restructuring of public services may require sizeable investments from administrative bodies at all levels, in addition to a cultural change.

The transformation that the Information Society will bring about in the field of public services demands protracted reflection on the modernisation of working methods and on the organisation of these. In order to instigate this change, a policy of sensitisation and training of personnel is required, in addition to a commitment to change on the part of political leaders.

The active participation and involvement of the civil servants will be secured by means of a plan for continuous training in ICT for all those working in public and private entities who offer a service to the citizen. Besides the actions conceived to promote the widespread internal use of Information Technologies specified in Initiative 2 (mandatory use of e-mail, electronic procurement, etc.), the essential actions that seek a commitment to change on the part of the Administration are as follows:

Actions:

- Training and refresher courses in ICT for Administration staff.
- Information and direct support for users concerning the use of the Administration's public information and services terminals/kiosks.

This direct support will offer an array of possibilities, ranging from an extensive, high-quality telephone information service for citizens (such as the 010 or 012 services, in order to reach all those groups of people who are still without access to Internet) to a direct support service that will perform the tasks of individual guidance in the use of the electronic information points.

Agents:

Each administrative body or department, and private entities that offer the citizen services.



02.5.2. Chart summarising the initiatives and actions

INITIATIVES	ACTIONS	AGENTS
Initiative 1 Public information on the network: Access to European, national, regional and local public information and information of social interest	<ul style="list-style-type: none"> • Creation of a search engine through which local and remote users may gain easy access to public interest information. The search engine should have 80% of the content that citizens require in 80% of cases, and access will be available to: <ul style="list-style-type: none"> - The agreements, acts, bye-laws and bulletin boards of the administrations. - The databases of the Administration. With respect to these, the different registers will be catalogued as "public domain" or "value-added", according to their type; such classification will determine whether the information is free or there is an obligation to pay (for example, land registry, cartography, property register, etc.). - The specific portals of the various administrations. • Constitution of a mixed committee that will monitor and maintain the search engine. • Organisation and presentation of information for companies with: <ul style="list-style-type: none"> - Electronic publication of investment planning and electronic procurement (tenders, purchases). - Integrated electronic publication of key information for businesses: procedure for creating a business, financial and geographical statistics, etc. - Establishment of an electronic directory of businesses in Catalonia, along the lines of the standardised European registers (European Business Register, EBR). 	Generalitat Local entities Public and private collaboration throughout Catalonia, Spain and Europe
Initiative 2 The intranets of the Administration: interchange of data between the administrations and progressive implantation of standards concerning inter-administrative interchange	<ul style="list-style-type: none"> • Creation of an office for the standardisation of electronic procedures in the public sector, and definition of the standards and minimum conditions of access to be offered to citizens. • Constitution of a permanent mixed committee to monitor proposals for the future and to oversee the continuous modernisation of the Administration. • Use of e-mail for circulars and introduction of a standard notification service. • Prioritisation of electronic procedures (census and residence, payment of contributions and taxes, etc.) and their progressive implantation. • Co-ordination of the use of databases belonging to different administrations. • Electronic public procurement: Electronic interaction with suppliers. • Electronic procedures for the creation of businesses to be available at all the administrations. • Progressive automation of processes (advanced procedures) between administrations (progressive computerisation of administrative forms (30% 1st phase, 70% 2nd phase). 	Generalitat Regional Councils Local entities Private public interest organisations (RACC, electricity companies and other public utilities) EC/Catalan Pro-Europe Organisation Ministry of Public Administrations

Initiative 3 Access for citizens to electronic transactions: authentication of the citizen's electronic signature	<ul style="list-style-type: none"> • The Charter of Citizens' Rights in the Information Society. • Project to facilitate the establishment of the Open Administration of Catalonia. • Scheduling of vertical and horizontal pilot tests to gradually introduce the electronic signature and electronic card to the citizen in stages: the first stage will take the form of a pilot phase in circles within the Administration; the second stage will extend to larger groups; finally, during a third stage, the card will be distributed to the entire population. 	CSI LOCALRET Administrations
Initiative 4 Inclusion of legal procedures in the group of electronic services provided by the Administration	<ul style="list-style-type: none"> • Improvement of the infrastructures in operation. • Interaction with electronic data interchange standards. • Automation of all the legal services. • Study of the possible telematic recognition of legal documents and practices, in order to create a standard service for the notification of citizens and agents in judicial procedures. 	Department of Justice Courts Police Administrations
Initiative 5 Mobility and management of thematic and territorial information and information relating to emergencies	<ul style="list-style-type: none"> • Access of citizens to an integrated mobility service. • Progressive implantation of intelligent management of the information provided by the various private agents and the administrations, which will include the following: <ul style="list-style-type: none"> - Institutional agreements for the integration of databases. - An integrated management system among the various agents. - An integrated cartographic system of Catalonia for the use of the administrations, and geographic information systems for the citizen by means of GIS-GSM-SMS. 	Department of Territorial Policy Catalan Institute of Cartography Department of Industry, Trade and Tourism Infrastructure and transport services supply companies Local entities
Initiative 6 Training and refresher courses for Administration personnel and citizen support services	<ul style="list-style-type: none"> • Training and refresher courses in ICT for civil servants and Administration staff. • Information and direct support for users concerning the use of the Administration's public information and services terminals/kiosks. 	Each administrative body or department, and private entities that offer the citizen services.



02.5.3. Co-ordinator, moderators and members

Co-ordinator

Mr. Ernest Maragall Mira

Barcelona City Council

Moderator

Mr. Joan Serra Roca

Commissioner's Office for the Information Society (CSI)

Mr. Amador Álvarez González	Royal Automobile Club of Catalonia (RACC)
Mr. Jaume Barceló Bugada	Dept. of Statistics and Operational Research (UPC)
Mr. Josep Bosch	Girona Regional Council
Mr. Isidre Canals Cabiró	Barcelona City Council
Mr. Martí Cebollero Horna	Department of Social Welfare
Mr. Jesús Eugenio Corbal Fernández	Judicial School
Mr. Manel del Forn Soxa	GFE Associats
Mr. Rafael Escudero Royo	Administration of Justice Relations Office
Mr. Ramon Fons Vilardell	Callús Municipal Council
Mr. Ignasi Genovés Avellana	Citizens' Services Office
Mr. Francesc Xavier Giménez Jordà	Tarragona Regional Council
Mr. Albert Guilana Foix	Law Courts of Lleida
Ms. Elisenda Malaret García	University of Barcelona (UB)
Mr. Fernando Méndez González	Association of Property Registrars
Mr. Oriol Miralbell Izard	Department of Industry, Consumption and Tourism (DICT)
Ms. Ana M ^a Miró Sabater	Barcelona Regional Council
Mr. Josep Molas Bertrán	Computer Services Office (DGSI)
Mr. Albert Muratet Casadevall	Sant Cugat Municipal Council
Mr. José Juan Novás Alemany	Autonomous Government of the Balearic Islands
Mr. Joan Olivares Obis	Local Administration Office
Mr. Lluís Olivella Cunill	Municipal Institute of Computing
Mr. Américo Ologaray Orti	Municipal Government of Terrassa
Mr. Ramon Oro Badia	Computer Services Office (DGSI)
Mr. Josep Pont Sans	Municipal Government of Bell-puig
Mr. Jaime Rodríguez Blanco	Office of the Public Prosecutor in Barcelona
Mr. Miquel Salazar Canalda	Barcelona Regional Council
Mr. Jordi Sans Pinyol	Emergency and Civil Protection Office
Ms. Teresa Serra Majem	Barcelona City Council
Mr. Ramon Siuraneta Alba	Lleida Regional Council
Mr. Ignasi Soto Valle	Association of Secretaries
Mr. Juan Antonio Tamayo Fernández	Sant Boi Municipal Council
Mr. Julio Vázquez Magan	Regional Computing Office of the Catalan Fiscal Agency



- 02.6 Health and Quality of Life a**
- 02.6.1** Description of the initiatives and actions
 - 02.6.2** Chart summarising initiatives and actions
 - 02.6.3** Co-ordinador, moderators and member



02.6.1 Description of the initiatives and actions

Health care and all its associated services represent an area that has a considerable impact on the quality of life of a country. Health is a very important factor in Catalonia, first and foremost due to its relevance as a service for citizens, but also because of the strong tradition of health care and research, the economic weight of the pharmaceutical and chemical industry, and the importance of the health care sector in general (laboratories and technological centres for health research).

Catalonia on the Network seeks to improve the quality of care received by patients through the use of the Information Society Technologies and the incorporation into routine health care of the digitisation of various procedures, such as case histories, hospital quality associated with quality of management (digital repositories) and global management systems.

The new Health model is grounded on Medicine based on evidence, self-information on the part of the user, sustainability, efficiency, and training of professionals in the new technologies and changes.

The following may be defined as health care agents:

- Public health authority: Department of Health.
- Public insurance companies: Catalan Health Service (SCS).
- Private insurance companies: all
- Agents that supply all the products and services (hospitals, professional associations, private supply companies, etc.)

The aim behind the application of the proposed initiatives is to succeed in changing the role of the various agents and the knowledge of these agents. Up until now, information about the patient has been dispersed and compartmentalised, whereas medical knowledge about the patient in the future will be global and transparent, and will allow all the agents to share diagnostics based on the various records of the patient, resulting in improved diagnosis and treatment, and a better quality of service for the patient.

Initiative 1

Availability of a health care portal providing transparent access to all the public and private health organisations in Catalonia.

This initiative deploys a series of actions orientated towards making it easier for patients to gain access to information about health and health care. In short, a bridge will be developed to link the various information services concerned with health and the Catalan health system. The information to be made available to citizens will include specific information for training of both citizens and professionals.

Actions:

- Creation of a Catalan health care portal that provides access to a multitude of initiatives:
 - Information about the health care services and health system in Catalonia, which will be accessible to citizens and foreigners visiting Catalonia.
 - Access to health education material of two types: for citizens and for professionals.
- Parallel access to the information at the portal by means of the 012 public telephone service and other telephone services.

This series of actions will foster the availability on the network of databases of all kinds: pharmaceutical information, waiting lists, etc., public and private databases.

Agents:

Department of Health, Catalan Health Service, organisations of suppliers, users' associations, professional associations, Catalan Institute of Health, insurance companies, pharmacies, all the health care agents.

Reinforcement of electronic communication between all the health care agents

Telematic communication between the various health care agents demands a change in the type of communication to a form of communication between citizen and service that differs from the existing one. This will be based on the health card, which will no longer be a card that simply contains administrative data, but one that provides access to the holder's case history. This strategic line will essentially succeed in creating a global public health Intranet for Catalonia.

This line of action will include the following initiatives:

1. The Health Care Intranet.
2. The creation of a Health Care Information Agency.
3. The electronic health card and digital case history.
4. The digital case history.
5. Training and refresher courses in ICT for health care agents.

Initiative 2

Implementation of the Catalan health care Intranet, which will facilitate the exchange of case histories between the different organisations and professionals, and inclusion in the Intranet of the various public and private health care agents.

The undertaking of this initiative requires a consensus on the data interchange format (this may initially be similar to the hand-written medical reports), before finally reaching a consensus on a data interchange format with Web protocols (Web-EDI).

Action will be taken to ensure that future case histories are compiled through the contributions of all the public and private agents that have played a part in a patient's case history (the various insurance companies shall also participate). Furthermore, the Intranet and the data interchange procedures will have to offer guarantees with respect to security and confidentiality, while certifying who is to use specific information about the patient.

Broadband communications and the computerisation of both public and private health care agents are essential to this initiative.



Actions:

- Improvement of the quality of communications between the health care agents. The availability of broadband services is the only means of ensuring the interchange of health care data, images, results, etc.
- Boosting, updating and extension of the health care Intranet. This must involve:
 - Computerisation of the CAPs (Primary Health Care Centres), so that case histories may be transmitted/exchanged.
 - Inclusion of the public and private health agents in the health care Intranet, so that the entire chain of health services needed by the patient may be covered, ranging from the connection of the CAPs with the hospitals and the Social Security Department to the capture of data relating to pharmaceutical expenses with a medical prescription, or the insurance company charges.
 - Data interchange without a set format, advancing towards WEB-EDI.
- Implementation of a digital case history that can be personalised (relevant medical records). Objective: the case history of the patient is on the network and is shared and added to by all the agents.
- Global applications to "health care centres" as pilot tests that can be evaluated.
- Deployment of infrastructures that ensure the circulation of data with complete security, confidentiality, reliability and speed.

The case history model will be expandable and modular; initially it will contain a minimum of information that can be configured at each centre. The aim is to use open interconnection systems and not to insist on rigid standards, but ones that are similar to the present procedures on paper. There will be a need to gradually advance towards the interconnection and interchange of data via WEB-EDI.

Agents:

Department of Health, Catalan Health Service (SCS), organisations of suppliers, professional associations, Catalan Institute of Health (ICS), insurance companies, pharmacies, in short, all the health care agents.

Initiative 3

Creation of a Health Care Information Agency.

The objective behind the creation of a Health Care Information Agency is to reach a consensus on the initiatives of the health care information network, including the actions of the health care agents (pharmacies and suppliers). Furthermore, this agency will have to support and guide the implantation of information technologies into the Public Health Service.

On the one hand, this agency will increase know-how, and on the other hand, it will be the entity that draws together all the information about this important sector. It will be a public agency, through which the quality of the specific services in progress will be evaluated, and it will help to undertake the following actions:

- To validate the information of all the agents without seeking to be interventionist.
- To define the quality of service criteria.
- To promote "a seal of service quality".

Actions:

- Creation of the Health Care Information Agency to support and guide the implantation of ICT services into the Public Health Service.
- Evaluation of the quality of the information on the network and of the services.

Agents:

Department of Health and Social Security as the creator of the Agency; the remainder of the agents will take part.

**Initiative 4****Introduction of the electronic health care card.**

The aim of this initiative is to create an infrastructure and to systematise access to information, in order to support the future smart card for health care identification. The health care smart card will be able to identify patients in the case of emergencies and to authorise the access of health care third parties to this information. The card will not hold detailed information about the patient, but it will serve as an element of identification if access to the patient's case history is required.

This action will be co-ordinated with the progressive computerisation of the Primary Health Care Centres (CAPs), where access will also be available to the case history.

Actions:

- Establishment of an electronic health care card, which, by identifying the patients, grants them access to the service and access to the personal data of their case history.

Both the implementation of the digital case history and the use of the health care card will guarantee the confidentiality of the data relating to the patient and the issuer of the prescription.

Agents:

Department of Health and Social Security for regulation, and all the health care agents for deployment.

Initiative 5

ICT training and refresher courses for health care agents.

Continuous training of all the health agents will be the key to the success of phasing in digital procedures in the area of health. Various measures will be introduced here, including a seal certifying continuous training for health care professionals. Standardised curricula will also be established, which will be open to public consultation. The ultimate objective is to foster changes in the study plans of the new professionals, in order that they include telematics and new technologies in medical studies, and to promote the continuous training of active professionals.

It will be necessary to rely on the collaboration of the users' associations, and in short, of all the organisations, when seeking to provide support and assistance for the weakest groups with respect to telematic access. This can be achieved by offering direct support at public points of access to the Internet (libraries, civic centres, interactive points in the hospitals themselves, Primary Health Care Centres, etc.). In this respect, it is also important to educate patients in preventive health care, encouraging them to show a new attitude towards the services offered by the health care service.

Actions:

- ICT training and refresher courses for agents within the Administration and professional health care agents and groups.
- Fostering of a change in habits regarding the use of ICT tools among professionals, through agreements with NGOs, the Red Cross and Recognised Professional Bodies.
- A commitment to electronic communication with healthcare suppliers.
- Guidance in new technologies, organisation of seminars, dissemination of model practices and the award of prizes for the "best practices".

Agents:

Recognised Professional Bodies, universities, insurance companies, NGOs, Red Cross, official associations.



02.6.2 Chart summarising the initiatives and actions

INITIATIVES	ACTIONS	AGENTS
Initiative 1 Availability of a health care portal providing transparent access to all the public and private health organisations in Catalonia	<ul style="list-style-type: none"> • Creation of a Catalan health care portal that provides access to a multitude of initiatives: <ul style="list-style-type: none"> - Information about health care services and the health system. - Access to health education material for citizens and professionals. • Incorporation of emergency telephones. 	Department of Health Catalan Health Service Organisations of suppliers Users' Associations Professional associations ICS (Catalan Institute of Health) Insurance companies Pharmacies All the health care agents
Initiative 2 Implementation of the Catalan health care Intranet, which will facilitate the exchange of case histories between the different organisations and professionals, and inclusion in the Intranet of the various public and private health care agents	<ul style="list-style-type: none"> • Improvement of the quality of communications between the health care agents. • Bolstering, updating and extension of the health care Intranet. This must involve: <ul style="list-style-type: none"> - Computerisation of the CAPs with the global case history in mind. - Inclusion of the public and private health agents (covering the entire chain of health services): doctors, hospitals/CAPs, insurance companies, pharmacies. - Data interchange without a set format, advancing towards WEB-EDI. • Implementation of a digital case history that can be personalised (relevant medical records). Objective: the case history of the patient is on the network and is shared and added to by all the agents. • Global applications to "health care centres" as pilot tests that can be evaluated. • Deployment of infrastructures that ensure the circulation of data with complete security, confidentiality, reliability and speed. 	Department of Health Catalan Health Service (SCS) Organisations of suppliers Professional associations ICS (Catalan Institute of Health) Insurance companies Pharmacies All the health care agents
Initiative 3 Creation of a Health Care Information Agency	<ul style="list-style-type: none"> • Creation of the Health Care Information Agency to support and guide the implantation of ICT services into the Public Health Service. • Evaluation of both the quality of the information on the network and of the services. 	Department of Health and Social Security as the creator of the Agency; the remainder of the agents will take part
Initiative 4 Introduction of the electronic health care card	<ul style="list-style-type: none"> • Introduction of the electronic health card, which, by identifying the patients, grants them access to the service and access to the personal data of their case history. 	Department of Health and Social Security for regulation, and all the health care agents for deployment.

Initiative 5		
ICT training and refresher courses for health care agents	<ul style="list-style-type: none">• ICT training and refresher courses for agents within the Administration and health care agents/professionals.• Fostering of a change in habits regarding the use of ICT tools among professionals, through agreements with the various organisations in the sector.• Electronic communication with healthcare suppliers, etc.• Guidance in new technologies, organisation of seminars, dissemination of model practices, etc.	Recognised Professional Bodies Universities Insurance companies NGOs Red Cross



02.6.3 Co-ordinator, moderators and members

Co-ordinator

Rt. Hon. Mr. Eduard Rius Pey

Department of Health and Social Security (DSSS)

Moderator

Mr. Carlos Padula Modorelli

Catalan Consortium of Hospitals (CHC)

Mr. Luis Alejandro Sorolla	Barcelona Regional Council
Ms. Roser Artal Rocafort	Catalan Health Service (SCS)
Mr. Josep Ma. Ayra Pascual	Assistència Sanitària Col·legial (Private medical insurance company)
Mr. Eudald Ballesta Carbonell	Catalan Union of Hospitals
Ms. Carmen Ceinos Kohn	ECOMIT
Mr. Xavier Companys Berges	Terrassa General Hospital
Ms. Mercè Cruells Salla	Co-ordinating Committee of Health Care Users (CUS)
Mr. Joan Duran Pou	Barcelona Association of Pharmacists
Mr. Isidre Fàbregues Aladren	Vall d'Hebron Hospitals
Mr. Pau Ferrer Salvans	Bellvitge Hospital
Mr. Josep Manuel Gil Meneses	Red Cross
Mr. Josep Gómez	Catalan Institute of Health (ICS)
Ms. Alicia Granados Navarrete	Medical Technology Evaluation Agency (AATM)
Mr. Antoni Gratacòs Bau	Technical Area. Department of Health and Social Security
Mr. Joan Grau Sociats	Corporació Sanitària Clínic (Clinical Health Corporation)
Mr. Santiago Marimón Suñol	Consortium of Hospitals of Catalonia (CHC)
Mr. Ramon Massaguer Meléndez	Department of Health and Social Security (DSSS)
Ms. Carmen Nuín Orrío	University School of Nursing (UdL)
Mr. Ignacio Orce Satrustegui	Collegial Health Care
Mr. Antonio Paredes Puigrodón	ADESLAS (private medical insurance company)
Mr. Josep Prat Domènech	Catalan Health Service (SCS)
Mr. Josep Roca Torrent	Hospital Clínic i Provincial
Mr. Ricardo Ruiz de Querol	Telefónica – Sector Solutions
Mr. Francesc Sánchez Montero	Corporació Sanitària Parc Taulí (Health corporation)
Mr. Ferran Sanz Carreras	Municipal Institute of Medical Research (IMIM)
Mr. Ramón Sarrias Ramis	Medical Association
Mr. Pere Torredadella Reinoso	Catalan Assocn. of Health Care Establishments
Mr. Jaume Tort Bardolet	Catalan Association of Municipalities (ACM)
Mr. Andreu Vidal	Department of Health and Social Security (DSSS)
Mr. Juanjo Villanueva Tipaon	Vision by Computer Centre (CVC, UAB)



02.7 Sociedad y Cambio Cultural

- 02.7.1 Description of the initiatives and actions
- 02.7.2 Chart summarising initiatives and actions
- 02.7.3 Co-ordinador, moderators and member



02.7.1 Description of the initiatives and actions

As we begin to experience the change from an Industrial Society to an Information Society, it could be argued that the correct use of Information Technologies is potentially a source of economic development and a factor that will increase employment and improve the quality of life in a more sustainable and unified environment. However, given that the Information Society offers the perspective of an unprecedented opening-up process, it should also be said that it may entail an uncontrolled access to information, communication and debate.

The initiatives orientated towards socio-cultural change imply a series of basic strategies, among which we might highlight the development of citizens' socio-economic and cultural networks. These may have a dual function: to promote local exchanges framed within the global society, and to bring the commitment to change on the part of the Government and institutions closer to society.

The objective behind the presence of Catalonia on the network is to provide and enhance the communication of Catalonia's experience and cultural and economic expertise. All the public interest institutions and organisations should gradually become participants in a cultural electronic network that offers citizens access to the services they require.

Another important strategy involves the adaptation and creation of a legal and economic framework, in order to encourage the change and the innovation that will stem from a new way of living, coexisting and working.

All this entails taking specific measures in co-ordination with other legislation, promoting wide respect for individual rights, and applying measures that will ensure the greatest possible fairness and sufficient flexibility with respect to the change in citizens' habits and behaviour.

In short, there are two basic initiatives to orientate the change: the bid to give Catalonia a solid presence on the network and promotion of a change in habits.

The presence of Catalonia on the network is a goal to be attained by working on two fronts: on the one hand, the presence of the Catalan language on the network must be guaranteed, and on the other hand, there is a need to ensure the high profile on the network of Catalan digital content of all kinds: business, services for the citizen, culture, civic expression, etc.

These two initiatives are transversal in character and are therefore included among the initiatives established in the area entitled THE FRAMEWORK OF THE INFORMATION SOCIETY.

The use of Internet and the computer is already a new habit for many people in Catalonia. The following graph shows a comparison with other countries.

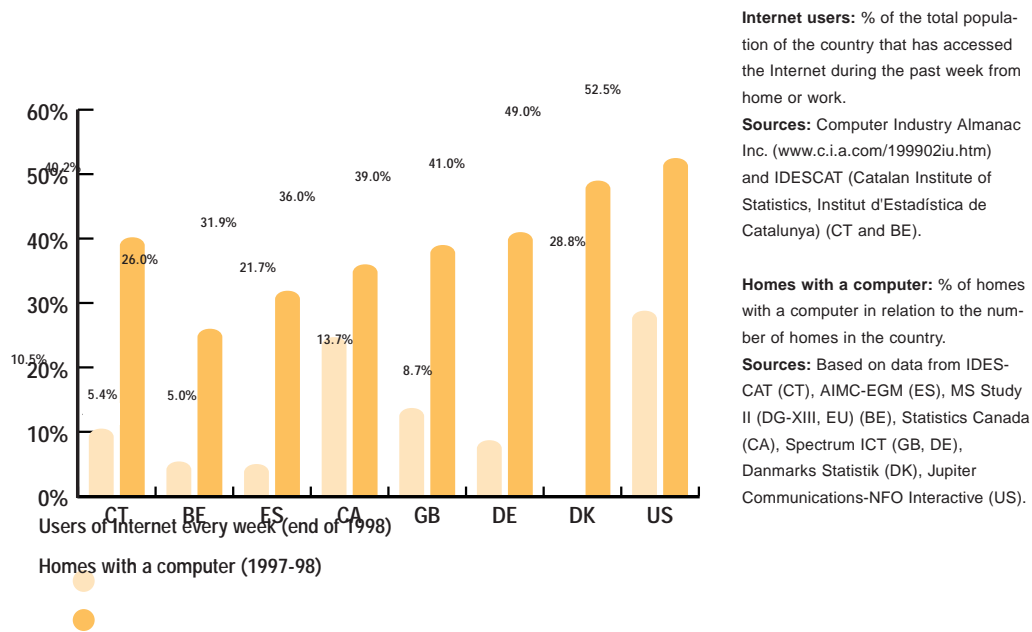


Figure 6. The graph provides a point of reference regarding the penetration of Internet and computers in Catalonia as at December 1998. This is one of the indicators that should be taken into account when the success of the proposals and actions of the Plan are measured.

Initiative 1

Promotion of initiatives to encourage citizens' participation in the network and to improve access.

The development of services offered to the citizen by the Administration should not widen the gap that exists between citizens that have a computer and those who do not. The availability of public access points and centres should make the Information Society accessible to the greatest number of people possible. This first initiative is complemented by Initiative 4 of this same area, which refers to Cultural Spaces and Teleworking, and Initiative 6 of the area INFRASTRUCTURES AND BASIC SERVICES, which anticipates the creation of 500 public points - mostly in libraries - for Internet access. In the case of the Internet Civic Centres, these will be specific areas where citizens can receive assistance and directly experience the Information Society Technologies. The centres will have a "tutor", who will be the main catalyst, and there will be further staff (eventually paid workers), who will be supported by volunteers.

The actions to be taken to consolidate the use of Internet are underpinned by three factors: physical and material support for the Internet Civic Centres and the citizens' networks, an incentive scheme offering awards for projects that foster social cohesion, and a policy to provide free e-mail.

Actions:

- Creation of support programmes for Internet Civic Centres and citizens' networks.
- Support for the creation of "virtual civic centres".
- Promotion of periodic Internet events: Internet-Festa, Net@days, Internet contests, etc.
- Provision of access to e-mail with a domain that corresponds to the geographical area (an aspect linked with the Charter of Citizens' Rights in the Information Society).
- Promotion of projects (products and services) that foster social cohesion. There are plans to create awards and to establish grants for this purpose.
- Provision of elements that will ensure the territorial and urban equilibrium of the Information Society, whereby deployment gives attention to underprivileged groups and geographical areas.
- Creation of an Information Society Observatory in Catalonia.

The Information Society Observatory is conceived as a body that will define the criteria to be employed in the constant evaluation of change, starting from a forum of reflection that will provide the tools and indicators of such change. It will also be responsible for fostering the creation of new Internet centres as areas that will encourage the development of social creativity.

**Agents:**

Generalitat de Catalunya (CSI, Department of Social Welfare), LOCALRET, local entities and social organisations.

Initiative 2**Sensitisation of society.**

The aim of this initiative is to convey the new forms of communicative expression, in order that all may become aware of the change. The policy of commitment hinges on a change of attitude in the relationship between the Administration and citizens, and a change in citizens' habits with respect to access and use of information and services on the Internet. The actions of this area will be co-ordinated with the actions of the EDUCATION AND TRAINING area, which make provision for continuous training to confront the change and training initiatives orientated towards finding employment.

In the Information Society hitherto unknown forms of communicating and living are coming to light, which demand an array of aptitudes and which are situated at the limits of various disciplines. In reaction to this, the Strategic Plan proposes to activate the synergies between the world of art, science and technology. The creation of a mixed museum-workshop centre with this idea in mind will be an emblematic initiative that will attract attention to the entire project.

The aim of the "Catalonia on the Network" museum-workshop centre is that it should become a tangible space that gives physical form to the phenomena of new communication, new interaction and multiple disciplines. In itself, the centre must be, at one and the same time, an experimental workshop, a training centre and a museum of the Information Society.

Success in promoting the demand for new services will only be achieved if citizens assimilate the premises of the change.

Actions:

- Publicity for Catalonia on the Network through the traditional communication media.
- Emblematic project: the "Catalonia on the Network" Museum-Workshop Centre.
- Fostering of multicultural creativity and attraction of new talent to the network.

Agents:

CSI, LOCALRET, CCRTV (Catalan Broadcasting Corporation), local entities, private agents.

Initiative 3

Promotion of Teledemocracy and citizens' rights.

The modernisation of the computer systems of the Government and the Parliament is an instrument of growing importance, through which the greater efficiency of these institutions can be achieved. The opportunities for citizens to exercise their democratic rights must be adaptable to the changes in the forms of management, as these become more decentralised and more effective in the clarification of public decisions. Use of the electronic vote and the right of access to information are part of "The Charter of Citizens' Rights in the Information Society", to be defined in Initiative 3 of the area entitled ADMINISTRATION AND SERVICES FOR THE CITIZEN.

This initiative will foster the use of Internet for the dispatch of ideas and contributions to organisations that function democratically (co-operatives, associations, unions, etc.). Teledemocracy goes beyond the present possibilities of democracy, since the Internet provides the opportunity of listening to many people and it encourages the voice of minorities. Thanks to the network, virtual meetings can be staged, greater civic participation is ensured and associative practices are encouraged.

Actions:

- Fostering of democratic practices via Internet.
- Encouraging minorities to express themselves, whereby Catalonia may continue its tradition of being a land that welcomes all.
- Promotion of associative activity and new forms of social interaction by telematic means.

Agents:

Generalitat de Catalunya (Autonomous Government of Catalonia), Parliament , local entities, associations, co-operatives and society as a whole.

**Initiative 4****Support for teleworking.**

The technological characteristics of today's society include socio-economic phenomena or "cultural changes" such as greater working freedom, the presence of new technologies and organisational change. Places of work are becoming increasingly more "multi-disciplinary", flexible and orientated towards teamwork and a dynamic working environment. In short, space is used more intensively, with a reduction in area (the paperless office), and there is greater recourse to outsourcing as a result of the increased use of mobile computers and telecommunications.

The actions that will provide the strongest support for the new way of life will be the projects involving the teleworking centres in the comarques (administrative divisions in Catalonia) and the "Workshop" schools, which open up new horizons for those who did not succeed at school.

Furthermore, teleworking is proposed as a means of social integration and as an environment that offers advantages for the handicapped.

Actions:

- Establishment of a network of centres that will provide support for citizens in the use of the Information Society technologies.
- Creation of pilot Teleworking Centres (10 per year).
- Workshop schools for "technical work" in Information Technologies for those seeking re-employment and for people who did not succeed at school.

The workshop schools of today will be transformed into "craft houses for the cities of the future". The Administration will support and promote initiatives in the field of employment that involve aspects related to teleworking. Likewise, the universities, within the framework of actions to create new business nurseries, will have a dynamic and supportive effect on teleworking. Therefore, the centres to provide support for teleworking will be of various kinds.

Agents:

Department of Labour, local entities, civic organisers, volunteers, associations, etc.

02.7.2 Chart summarising the initiatives and actions

INITIATIVES	ACTIONS	AGENTS
Initiative 1 Promotion of initiatives to encourage citizens' participation in the network and to improve access	<ul style="list-style-type: none"> • Creation of support programmes for Internet Civic Centres and citizens' networks. • Support for the creation of "virtual civic centres". • Promotion of periodic Internet events: Internet-Festa, Net@days, Internet contests, etc. • Provision of universal access to e-mail with a domain that corresponds to the geographical area (an aspect linked with the Charter of Citizens' Rights in the Information Society). • Promotion of projects that foster social cohesion. Creation of prizes and awards for ICT products and services. • Provision of elements that will ensure the territorial and urban equilibrium of the Information Society. • Creation of an Information Society Observatory in Catalonia. 	Generalitat (CSI, Department of Social Welfare...) LOCALRET Local entities Social organisations
Initiative 2 Sensitisation of society	<ul style="list-style-type: none"> • Publicity for Catalonia on the Network through the traditional communication media. • Emblematic project: the "Catalonia on the Network" Museum-Workshop Centre. • Fostering of multicultural creativity and attraction of new talent to the network. 	CSI LOCALRET All of society CCRTV
Initiative 3 Promotion of Teledemocracy and citizens' rights	<ul style="list-style-type: none"> • Fostering of democratic practices via Internet. • Encouraging minorities to express themselves. • Promotion of associative activity and new forms of social interaction by telematic means. 	Parliament Generalitat de Catalunya Local entities Associations and co-operatives
Initiative 4 Support for teleworking	<ul style="list-style-type: none"> • Establishment of a network of centres that will provide support for citizens in the use of the Information Society technologies. • Creation of pilot Teleworking Centres (10 per year). • Workshop schools for "technical work" in ICT for those seeking re-employment and for people who did not succeed at school. 	Department of Labour Department of Education Civic organisers Local entities



02.7.3 Co-ordinator, moderators and members

Coordinador

Mr. Eduard Punset Casals

Chemical Institute of Sarrià (IQS)

Moderator

Mr. Artur Serra

Polytechnical University of Barcelona (UPC)

Mr. Enric Basela Cava	Ravalnet
Mr. Raimon Bergós Civit	OCUC
Ms. Pilar Blasco	Sta. Cristina d'Aro Municipal Council
Mr. Isidre Canals Cabiró	Barcelona City Council
Ms. Carme Cañadell Valls	Media Office
Mr. Xavier Creus Román	Interactive Bureau, SL
Mr. Víctor Farré Ballín	Barcelona 2004
Mr. Luis Ángel Fernández Hermana	en.red.ando.com SL
Mr. Lluís Gavalda Casat	Employment Office of the Catalan Placement Service
Mr. Josep Gifreu Pinsach	Pompeu Fabra University (UPF)
Ms. Núria Gispert Feliu	CARITAS - Barcelona Office
Mr. Jordi Gutiérrez Suárez	Comisiones Obreras (CCOO – Spanish workers' union)
Mr. Manuel Hueriga Guerrero	Barcelona Televisió (BTV)
Mr. Joan Isard López	Barcelona Federation of Residents' Associations (FAVB)
Ms. Elisenda Malaret García	University of Barcelona (UB)
Mr. Ferran Mascarell	Barcelona City Council
Mr. Miquel de Moragas Espa	Autonomous University of Barcelona (UAB)
Mr. Josep Nieto Trullas	Digital Journalists Group (GPD, UOC)
Mr. Vicent Partal Montesinos	VilaWeb
Mr. Josep Piqué Huerta	LA SALLE Engineering and Architecture
Mr. Jordi Porta Ribalta	Jaume Bofill Foundation. FUS Group
Mr. Santiago Sánchez de Evesa	Projectart - TRIA Nou Barris
Mr. Manuel Sanromà Lucía	Department of Computer Engineering (URV)
Mr. Jordi Serra del Pino	Periscopi de Prospectiva i Estratègia (Firm of consultants)
Mr. Jaume Serrats Ollé	Commissioner's Office for the Information Society (CSI)
Mr. Jordi Teixidó Closa	Organic Chemistry Department (IQS)
Mr. Jordi Valls Riera	Manresa Municipal Council
Mr. Andreu Veà Baró	Retevisión

03

Deployment and Monitoring

03.1 Co-ordinated national and international action

The strategy defined in this document must serve as a platform from which we may grow, as we consolidate our capacity for creating, attracting and retaining ideas, people and organisations of influence in this field. At the same time, the aim is that it should help to create an environment that is favourable to the various organisations and companies when they come to compete in the global market. All in all, this strategy may be crucial to the attainment of fair and universal social conditions for the creation of work and wealth, in short, conditions that will improve our quality of life.

Now that the directives for Catalonia have been defined and agreed upon, it is time to accomplish the initiatives and actions, a task in which all of us - people, agents and institutions - will have to participate. It is the responsibility of us all to take advantage of the opportunities that the emergent Information Society can offer us, and to avoid or overcome the dangers and obstacles that may appear along the way.

In order to make these possibilities a reality, it will be necessary to deploy the proposed initiatives and actions in projects that have been quantified in terms of the agents, actions, time-scales and contributions. It will be important that these programmes are perfectly adapted to the reality of Catalonia and our potential, but above all, that they are perfectly co-ordinated and articulated at a national and an international level.

This necessary co-ordination encompasses financing or the undertaking of interdepartmental projects, as well as the incorporation of the administrations into the network and the definition of common standards and general principals to be respected.

Although it is difficult to precisely establish how much time it will take to deploy the proposed plan, a possible and reasonable estimate would be four years. Therefore, the period from 1999 to 2003 should be sufficient.

In terms of investment and economic impact, it may be calculated that public investment representing up to 2% of the budget, accompanied by private investment of up to 2% of the GDP, sustained over the four years, can result in growth in the ICT sector of up to an additional 2% on the current percentage of the GDP, and annual growth of up to 2% with respect to the EU average.

03.2 Monitoring committee and annual report

There is an immediate need to provide for a monitoring structure that will not only oversee the continuity of the committed objectives involving Catalonia established by this Plan, but also focus attention on a series of factors that will acquire great importance as we advance towards the Information Society.

With respect to this, it is proposed that the agents with powers in the implementation of the Plan's initiatives should create an Office for Monitoring and Updating the Plan "Catalonia on the Network", which should seek to do the following:

- To give impetus to the initiatives or programmes of action that specifically require the participation of the various agents involved in the Plan.
- To create a chart of indicators with scheduled evaluations and objectives that will allow precise monitoring of the progress of Catalonia's incorporation into the Information Society and of the measure in which the various initiatives proposed in the Plan are accomplished.
- To draw up and publicly present an annual monitoring report within the first six months of each year. This report shall contain the conclusions of the abstracts concerning the Information Society produced by the various public and private organisations.
- To update the measures and objectives of the Plan, constantly adapting them to the new possibilities and situations that arise in Catalonia.

In summary, the aim is to create the conditions that will ensure the optimum deployment and accomplishment of the objectives established by this Plan "Catalonia on the Network", taking account of both time factors and the approach employed.

04

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