



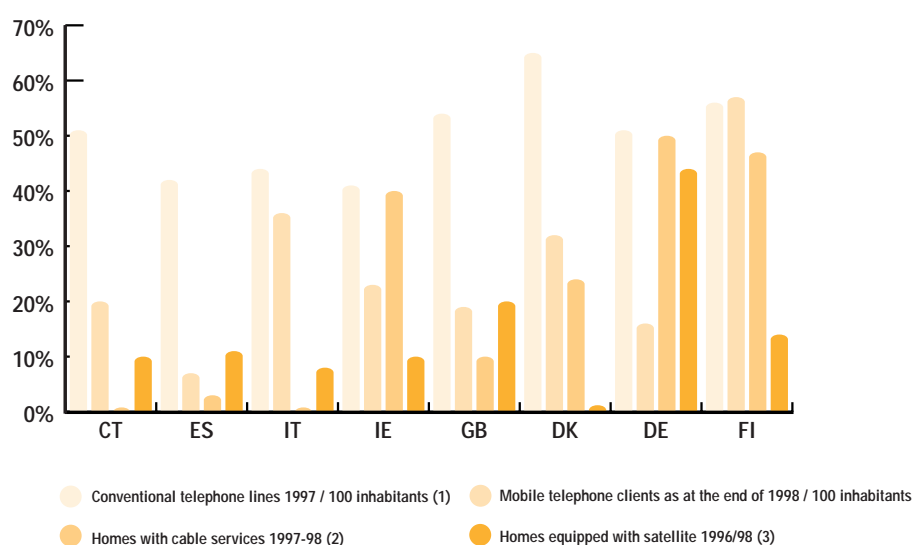
02.2 Infrastructures and Basic Services

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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

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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. Miguel 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
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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)