01.2 Infrastructures and Basic Services

By infrastructures, reference is made to a whole series of elements and support structures that provide the user with access to information and telematic services. These are the systems, the communications networks, the terminals and the basic resources (databases, libraries, global information processing tools, services needed in order to use the infrastructures, etc.) that serve as a means of communication between the user and the service providers.

Guaranteed access to the communication networks at suitable speeds and costs is a vital factor, in order that a country may progress towards the Information Society and join the group of countries that are technologically advanced in terms of the development of ICT-related applications. If the necessary infrastructures do not exist, growth in demand may be obstructed by the lack of capacity to maintain new value added services.

One of the critical factors in the provision of access to the Internet or to the services that can be offered via the Internet is the availability to citizens of suitable terminals, either via a personal point of access or through public places such as libraries, civic centres, urban terminals, etc. Thus it is of vital importance that everyone should be able to have easy access from any point and at any time.

Another important factor to be taken into account in the promotion of access to the computer networks is the availability at competitive prices of systems with a large transmission capacity. Therefore, if the infrastructures are available and there is an appropriate system of rates, a good response may be expected from companies and individual users.

Finally, another important point with respect to the area of infrastructures is the increase in mobile communications, and services distributed by cable and satellite.

The proposed indicators for monitoring the position in Catalonia in this area are:

01.2.1 *Fixed telephony lines and mobile telephony clients, cable and satellite services*

01.2.2 *Penetration of personal computers and the Internet in society*

01.2.3 *Network accessibility from Libraries*

01.2.4 *Telephone and Internet rates*

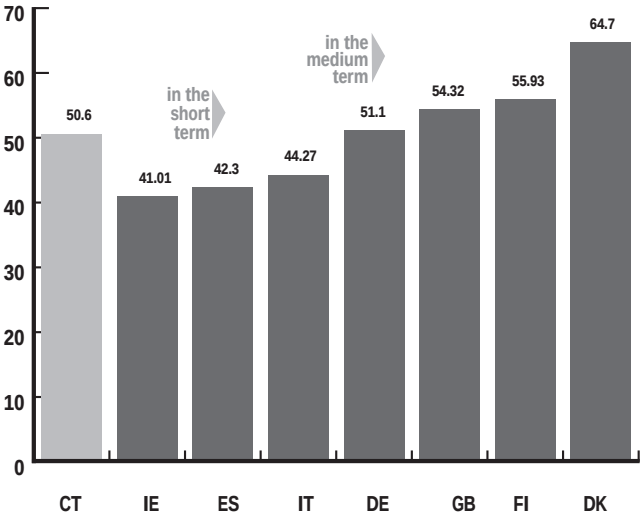
01.2.1 Fixed telephony lines and mobile telephony clients, cable and satellite services

The following graphs show the degree of penetration of telephony, cable and satellite services among the population of various European countries.

The first indicator employed is the number of fixed lines per 100 inhabitants. Until very recently, the number of homes with a double connection was also employed as an indicator, but currently it makes more sense to complement the fixed telephony data with the penetration of mobile telephony, due to its considerable growth in the last few years. In this respect, Catalonia is well-situated in the context of Europe, without however reaching the high penetration levels of some Nordic countries, such as Finland and Denmark, which already have one line (mobile or fixed) for each inhabitant.

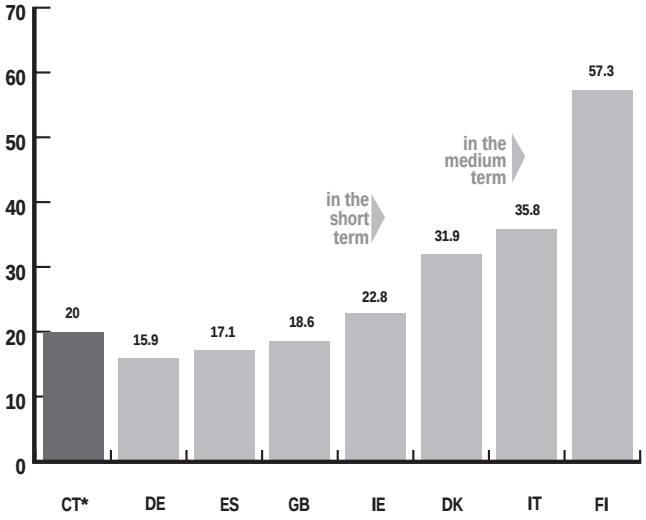
The last two graphs show the number of homes that have contracted cable and satellite services. It may be observed that in both these areas, particularly in cable, Catalonia's figures are still very low in comparison with those of other countries.

Fixed telephone lines (end of 1997) per 100 inhabitants



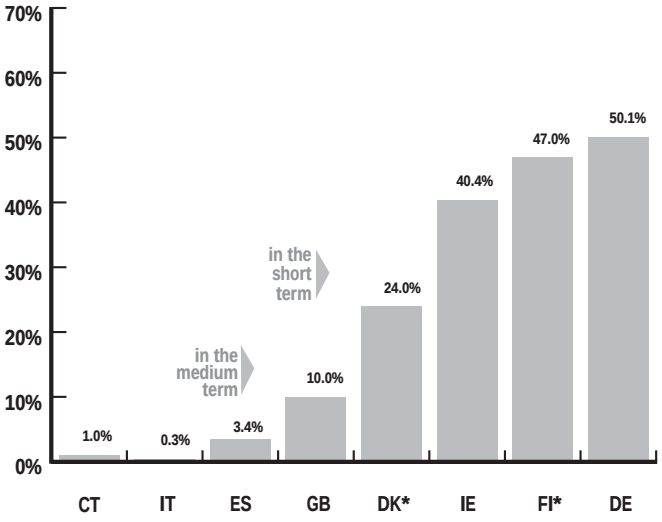
Source: ESIS-ISPO 98-99, CT and ES: Telefónica and Airtel.
NB: Includes basic telephony, Ibercom and ISDN telephone lines.

Mobile telephony clients (end of 1998) per 100 inhabitants



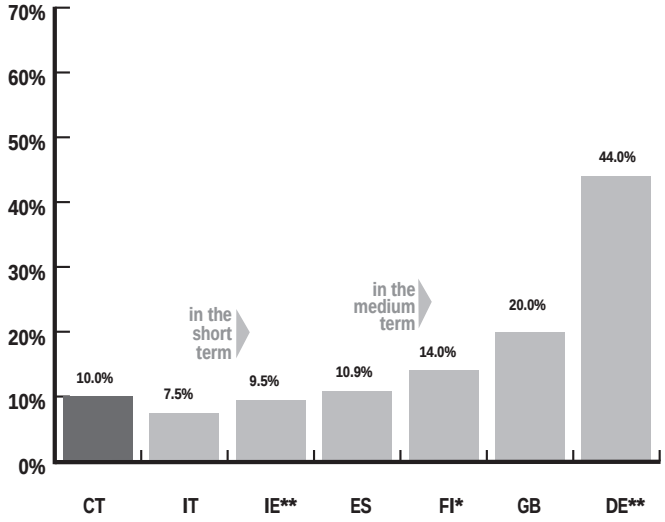
Source: ESIS-ISPO 98-99, data from end of 1998.
NB: (*) It is assumed that Catalonia had the same percentage in relation to Spain as in 1997 (19%).

Number of homes with a cable TV subscription 1998 (97)



Source: ESIS-ISPO 99, data from 1998, except DK and FI Dec. 1997 (*).
NB: Number of homes with a cable TV subscription compared with the number of homes with television.

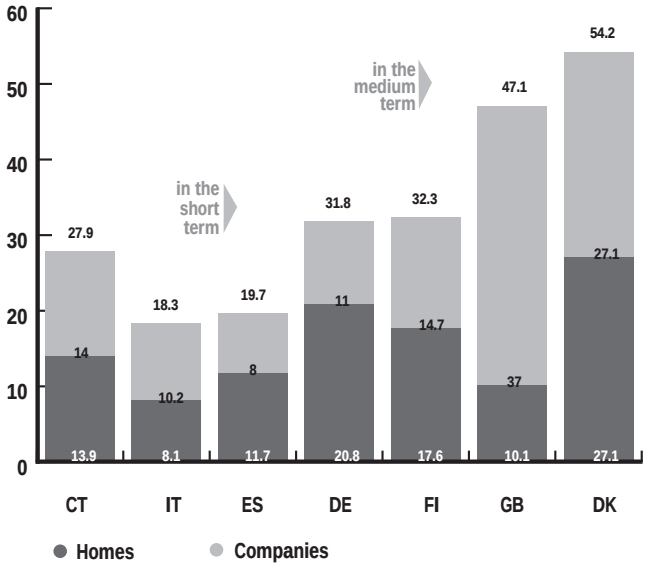
Number of homes with satellite TV 1998 (96, 97)



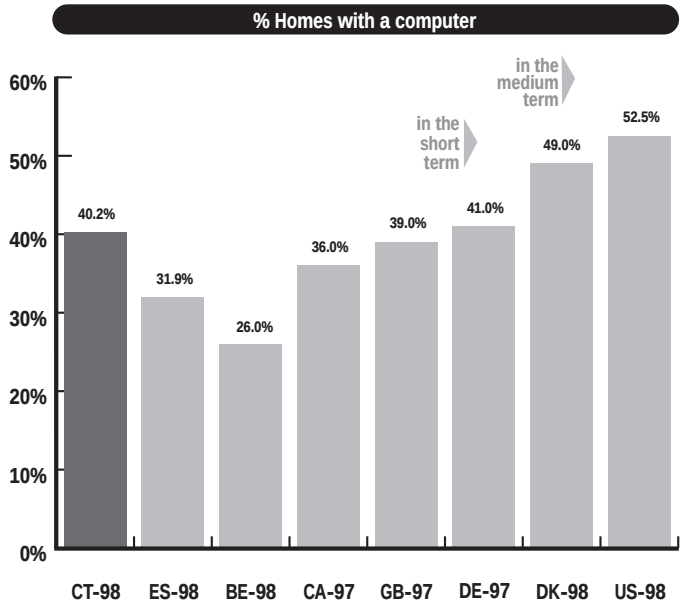
Source: ESIS-ISPO 98-99, data from 1998, 97 (*) and 96 (**).
NB: Number of homes with satellite TV compared with the number of homes with TV.

01.2.2 Penetration of personal computers and the Internet in society

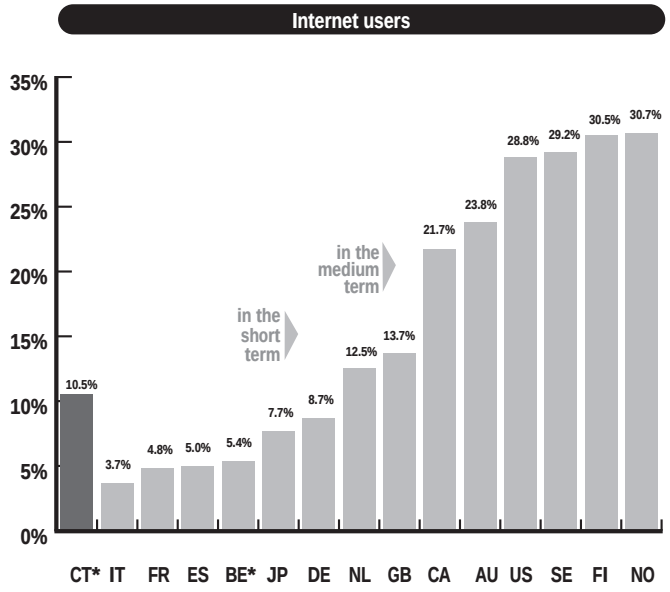
Personal computers per 100 inhabitants



Source: Idescat, SEDISI, ESIS-ISPO 99 (data from end of 1998).



NB: The graph shows the percentage of homes in the country.
Sources: Based on data from Idescat (CT), AIMC-EGM (ES), MS Study II (DG-XIII, EU) (BE), Statistics Canada (CA), Spectrum ICT (GB, DE), Danmarks Statistik (DK), Jupiter Communications - NFO Interactive (US).

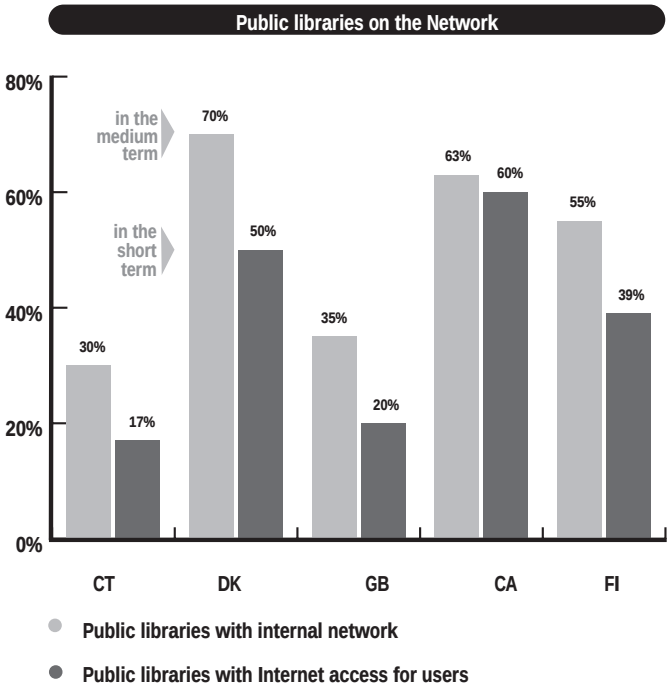


NB: The graph shows the percentage of the total population of the country that has connected to the Internet from home or work during the last week.
Sources: Computer Industry Almanac Inc. (www.c-i-a.com/199902iu.htm). (*) Catalonia and Belgium: IDESCAT data drawn from a telephone survey and adapted to the criteria followed by Comp. Ind. Almanac Inc. According to the criteria followed to adapt the data, the value may vary between 8.8 and 10.5.

01.2.3 Network Accessibility from Libraries

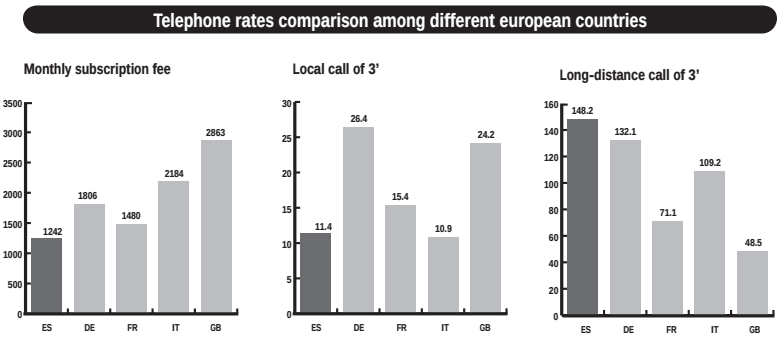
The graph below shows the percentage of libraries that are connected to the network for internal inter-library communication, and on the other hand, the percentage of libraries that offer users access to the Internet.

The Regional Councils of Barcelona and Girona, following initiatives taken in other countries, have drawn up plans to improve Internet access both internally (joint catalogues, reservation of books, etc.) and for the benefit of users. As from May 1999, 75% of the public libraries managed through an agreement with the Regional Council of Barcelona are computerised, 41% have Internet for internal use and 20% offer it to users.
As from the beginning of 1999, 183 public libraries in Catalonia and 2 mobile libraries have computerised catalogues (151 libraries and 4 mobile libraries are still to be computerised). While 100% of the university libraries have Internet access and offer it to their users, only 17% of the remaining public libraries offer Internet access to their users and only 30% have it for their own use.



Sources: CT: Direcció General del Patrimoni Cultural (Cultural Heritage Office); BCN (Barcelona): Diba; DK: IT in figures 1997; GB: The new library project; CA: Library NET; FI: PULSE project.

01.2.4 Telephone and Internet rates



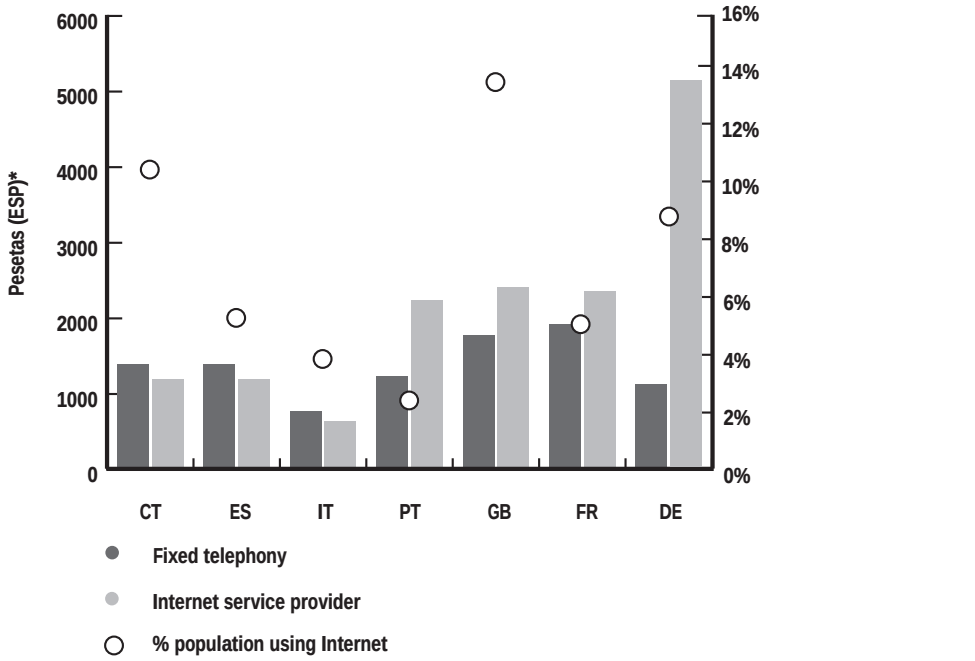
Sources: "Recommendations of the Advisory Group on the IS Industries for Josep Piqué i Camps, Minister of Industry", June 1998

Monthly rates charged to an average Internet user and their impact on the use of the Network in Europe.

The following graph shows three values: the telephone costs for Internet access, the costs of Internet service providers and the percentage of the population that connects to the Internet every week. In this way, the influence of the cost factor on Internet access may be observed.

At present, the only countries with a flat rate are the United States (1,575 ESP), Hong Kong (1,765 ESP) and New Zealand (2,690 ESP).

Monthly rates charged to an average Internet user and their impact on the use of the Network in Europe



***** Values weighted according to the relative GDP per capita indes (OECD 98).

Sources: Telefónica (ES), Telecom Italia (IT), Portugal Telecom (PT), BT (GB), France Telecom (FR), Deutsche Telekom (DE). OECD.