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2005 Regulation Report

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Part II – State of communications

II.1 International framework: evolution of the electronic communications sector in the EU

According to the European Commission¹, the electronic communications sector in the EU is currently undergoing a transitional phase with the following most marked features:

- New technologies and services are being marketed, some of them in connection with the process of converging services, networks and contents;
- Fixed and mobile voice telephony has reached a phase in its life cycle close to that of maturity;
- Increasing competition, partly due to the regulatory intervention.

In order to face the above mentioned technological and market developments, operators began to improve their operational procedures, which led to increasing profitability. On the other hand, consolidation efforts are being made and therefore larger operators are being created. This consolidation effort is followed by increasing investment, particularly by incumbent operators. Investment grew about 6 per cent, the third year of growth in a row after the events of the end of the speculation period that came with the first phases of the Internet's life cycle.

Undergoing structural changes in this sector did not affect its relative importance within the ICT² sector, nor did they jeopardize its growth. In general, the electronic communications segment is still the most important one within the ICT sector, standing for 44 per cent of its value. On the other hand, turnover grew at a rate close to 4 per cent, in 2005. However, the above mentioned factors have different impacts on the recent evolution of the several electronic communications services.

¹ European Commission, Regulation and the European electronic communications markets in 2005 (11th Report), COM (2006) 68, 22 February 2006.

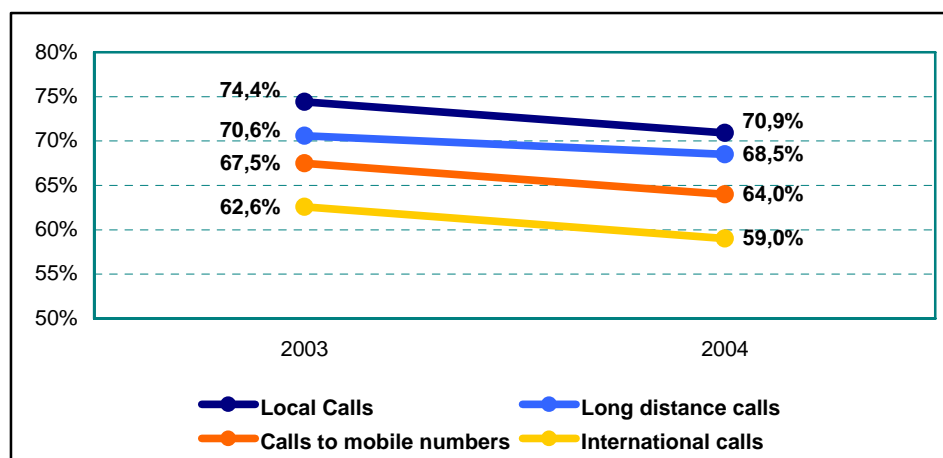
² Information and Communication Technology.

The main recent trends of the electronic communications sector in the EU are described below – for FTS, MTS and broadband – as presented by the European Commission.

Fixed Telephone Service (FTS)

- Traditional voice services, despite still being the largest source of revenues for operators in the fixed communications markets, have had a progressively decreasing turnover.
- This decreasing turnover stems from decreasing call prices, new access and call bundles and special tariff packages aiming large users.
- Price reductions are reactions to the increased competition within the sector and to the new services, namely VoIP service.
- The coming into these markets of a large number of alternative operators, which sometimes use regulated wholesale offers and other items made mandatory by regulation (e.g. portability), led to a significant increase of new operators' shares in the telephone services markets.

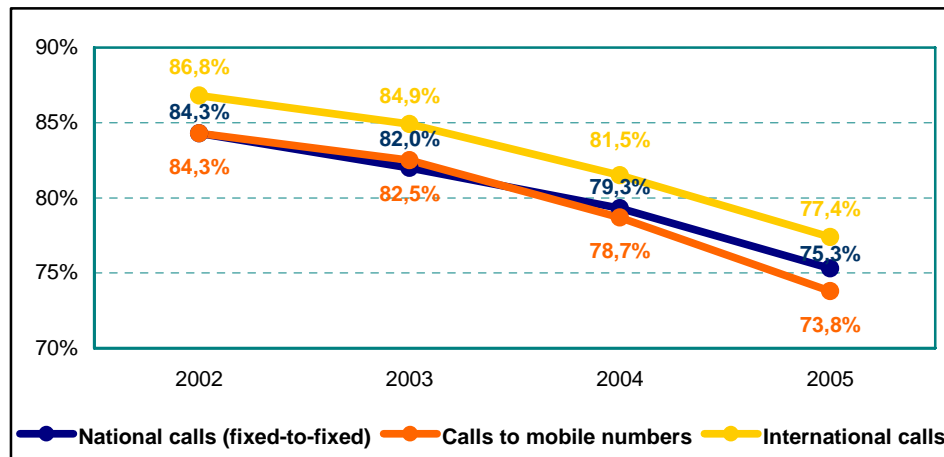
Graph 1 – Average share of the incumbent operator's voice traffic revenues in the EU countries



Source: European Commission, 11th Implementation Report

The incumbent operator's market share in Portugal is higher than the EU average. However, in 2005, its market share dropped more sharply than in the EU, on average.

Graph 2 – Average share of the incumbent operator's voice traffic revenues in Portugal

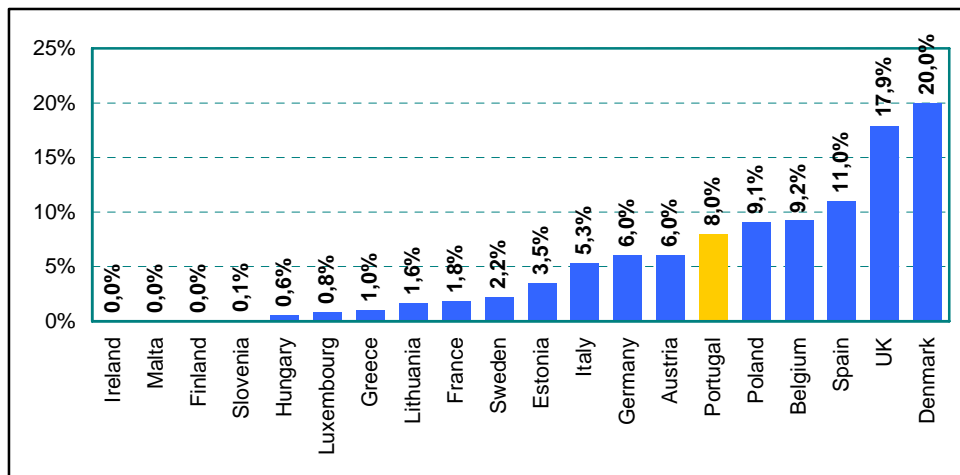


Source: ICP-ANACOM

- Regarding the access markets, the evolution of the alternative operators' market shares was less relevant. The direct access customer share of EU's new operators is 8.3 per cent. The main access means used by these direct customers is cable TV networks.

In Portugal, the direct access customer share of the new operators is close to the average. About 8 per cent of the direct access customers are alternative operators'.

Graph 3 – Direct access customer share of alternative providers in the EU – June 2005

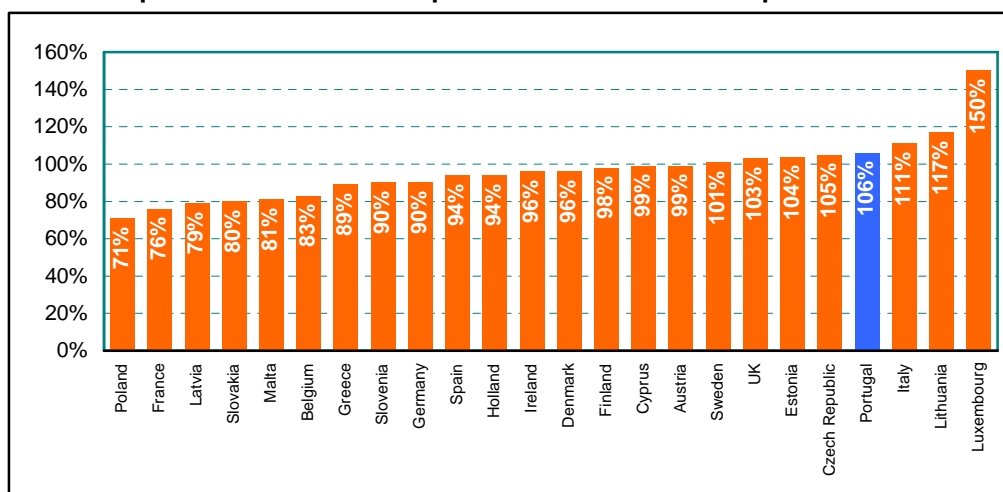


Source: European Commission, 11th Implementation Report

- In order to face competition and decreasing revenues, operators are investing in new markets and new technologies (new generation networks).
- Telephony services using the Internet protocol (IP) (and the VoIP one) are already available in most Member States, although with no important effects in the traditional fixed telephony's revenues, so far.

Mobile communications service

- Mobile voice communications services are already showing signs of maturity, with very high penetration figures. The average mobile service penetration rate in the EU reached 92.8 per cent in October 2005. Penetration reached rates above 100 per cent in eight countries, namely Portugal.

Graph 4 – MTS subscriber penetration in the EU – September 2005

Source: European Commission, 11th Implementation Report

- In spite of the high penetration that was already reached, this service is still growing considerably, boosted by its evolution in EU's ten new Member States.
- The service's revenues are also growing. Estimated revenues in 2005 grew about 6 per cent. This growth was generated by new data services and takes place in spite of the mobile terminations' price reductions enforced by regulators.
- There is also an increasing competition due to the entry of new operators in the market.

Beyond the 79 2G network operators in the EU, these markets have about 214 virtual mobile service providers/operators (there were 166 in 2004). In 2005, about 14 countries had this kind of service providers. In eight of those countries there are more than ten mobile operators (including virtual operators).

It should be mentioned that the amount of ported mobile numbers doubled in 2005.

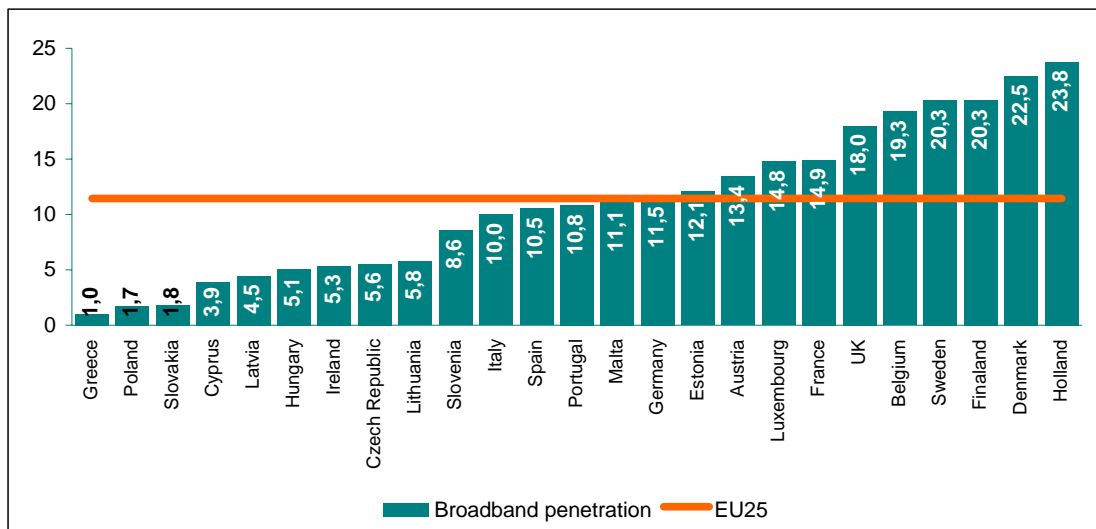
- The above mentioned increase in competition led to lower market shares of the market leaders. However, in 13 EU countries, the market leader's share is above 40 per cent.
- Increasing competition also led to decreasing prices, namely in Portugal, and to an increase of the available offers.

- 3G services are now beginning to step up, already with 15 million subscribers in the EU. In Portugal, 3G services were launched in 2004 and in 2005 the population coverage rate of this service was 50 per cent.
- International roaming prices³ are still high and their tariffs still not clear.

Broadband

- Broadband roll-out significantly speeded up in 2005. The average penetration rate (lines per 100 inhabitants) in the EU reached 11.5 per 100 inhabitants in October 2005, whereas a year earlier the ratio stood at only 7.3 per 100 inhabitants. In 2005, more than 20 million lines were installed. The penetration rate in Portugal at that date was 10.8 per 100 inhabitants, a yearly increase of 52 per cent.

Graph 5 – Amount of broadband accesses per 100 inhabitants in the EU25



Source: European Commission, 11th Implementation Report

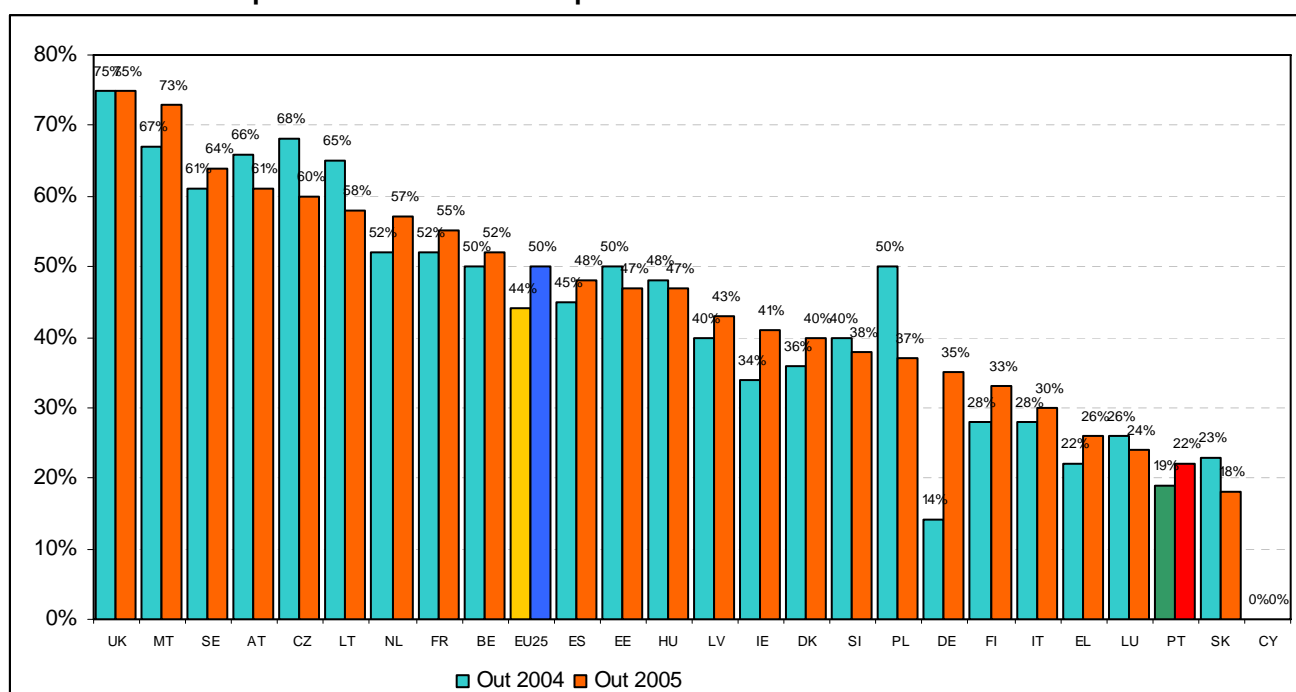
- Broadband is replacing dial-up accesses. In Portugal, the amount of broadband customers is larger than that of narrow band customers.

³ Roaming is the use of a mobile network by subscribers to another mobile network, by agreement between the operators. International roaming stems from agreements between operators from different countries.

- ADSL is the main access technology, above cable modem. In Portugal, this phenomenon occurred for the first time last year.
- Incumbent operators' market share in the EU has been decreasing. It was 50.2 per cent in October 2005, vis-à-vis 55.7 in the same month of 2004.

In Portugal, the alternative operators' market share was 23 per cent at the end of 2005. The incumbent operator's growing market share trend was reversed during this year.

Graph 6 – Evolution of new operators' broadband market share



Source: European Commission, 11th Implementation Report

- Due to the increasing competition, the prices of this service have been decreasing at the same time that the throughput has increased. The market in Portugal evolved in line with this trend.

II.2 Fixed Telephone Service (FTS)

This chapter shows the state of the FTS at the end of 2005, and its evolution during that year.

II.2.1 Main items of the evolution in 2005

- In 2005, and for the first time since the beginning of liberalization, the amount of FTS's direct access customers did not decrease. In fact, at the end of the year, there were 3.13 million registered direct access customers, a small year to date increase. This is due to the growth in the number of RUO-based offers and to new offers using the GSM network as the access network.
- In spite of a stabilized number of customers, the trend of decreasing traffic with origin in the fixed network remains. In fact, a sharp fall in traffic has been occurring since 2001. Voice traffic decreased between 2000 and 2005 at an average yearly rate of 5 per cent in amount of minutes, which slightly slowed last year (-4.2 per cent). Internet dial-up access traffic sharply decreased over the last two years (a 41 per cent drop in amount of minutes), which is explained by the strong growth of the broadband access to the Internet.
- In 2005, fixed telephone service prices are near, or even below, the average European level. There was a significant drop in prices for practically all types of calls, as a result of ICP-ANACOM's regulatory action.
- One of the most recent trends is the development of VoIP services. There are currently 16 authorized providers for this kind of service. ICP-ANACOM launched in November 2005 a public consultation on VoIP services which contributed to define the framework for VoIP service provision.

II.2.2 FTS's offer

STF is the offer to the general public of voice direct routing, in real time, between fixed locations, giving any user with equipment that is connected to a terminal network point the chance to communicate with another terminal point.

The service is provided by the entities with a general authorization for the provision of the service and by the universal service provider.

Following is a more detailed description of the provided services and of their evolution during 2005, the entities providing these services in Portugal and the market entries and exits, the mergers and acquisitions in the FTS markets during that same year.

II.2.2.1 FTS

Traditionally, telephone services were provided together (bundled) with the access to the public telephone network at a fixed location. This was changed with the implementation of the so-called “indirect access”.

As from 1 January 2000, the users of publicly available telephone services at a fixed location began to benefit from the indirect access service in the call-by-call selection mode. This function gives FTS users the chance to make telephone calls using the services of other FTS providers and not their access provider. In order to do that, they only have to dial each provider’s 10xy codes. On a first stage, only inter-urban and international calls were eligible for the provision of this indirect access service.

On 1 July 2000 a new indirect access mode was launched – provider pre-selection. This function re-routes calls made by users to the provider that they prefer without the need to dial the selection codes. Pre-selection firstly used an autodialer connected to the customer’s telephone. On 1 October 2000, pre-selection became mature in Lisbon and Porto, with no further need for autodialers and pre-selection programmed at the operators’ switchboards. On that same date, calls originated in the fixed network and destined to a mobile network (fixed-to-mobile calls) became eligible for indirect access, both in the call-by-call selection and in the pre-selection modes. On 15 November 2000, pre-selection became available in its final mode (without autodialers) to customers in the rest of the country.

As from 1 January 2001, local and regional calls also became eligible for indirect

access.

II.2.2.1.1 Accesses to the public telephone network at a fixed location

Access to the public telephone network at a fixed location can be provided using various physical media:

- Copper wire pairs – this media is mostly used by the incumbent operator PTC and is currently the one ensuring a greater geographical and population coverage. With the enforcement of RUO, alternative operators were given the chance to start offering access to the public telephone network at a fixed location using the incumbent's unbundled local loops;
- Coaxial cable – cable made up of a central copper wire which is enclosed by a belt of intertwined copper wires and separated from it by an insulating material. This type of cable is used for carrying electrical signals at higher frequencies than those carried by a simple pair of metallic wires. It is one of the main items of the hybrid cable television distribution networks. Currently, there is one fixed telephone service provider offering fixed access using coaxial cable (Cabovisão)⁴;
- FWA – Fixed Wireless Access – access technology through which operators provide to their customers a direct connection to their telecommunications network using a fixed radio link between the latter's premises and the operator's local switchboard. There are four active providers [Jazztel Portugal – Serviços de Telecomunicações, S.A. (Jazztel), Novis, Vodafone and Onitelecom] with FWA licenses⁵. Radio links are used complementarily with their non-radio access networks, usually for access to non-residential customers;
- Powerline Communications (PLC) – access technology using energy cables to convey broadband voice and data. This technology makes it possible to use a local voice and data local network in a house, from any electrical socket, to

⁴ There are other cable TV distribution network operators advertising telephone services. However, these companies are only authorized to provide voice over the Internet services. According to the available data, these services do not substitute the FTS.

⁵ These rights of use are being reconfigured.

provide high-speed Internet access, telephone and fax. There is currently one fixed telephone service provider offering fixed access using PLC (Onitelecom).

- Fibre optics – physical transmission means (usually a cable with several pairs of fibreglass) that convey data as light pulses. It's a broadband medium that, if in connection with the adequate equipment, can carry large amounts of data at long distance and with small distortion. Both new providers (Onitelecom, Novis, Colt, Jazztel, Refer, Cabovisão) and PTC have been rolling-out fibre optics in their access networks, mostly for use by the non-residential market. Among the new providers, Cabovisão has a nation-wide fibre optics ring of 1,811 km, with a 2.5 Gbit/s throughput and Colt is rolling-out all its network using fibre optics;
- Radio-relay – transmission system through radio waves using dish antennas. The use of radio-relay links is negligible due to the large investment needed to maintain them.

The following types of access are provided over these physical media:

- Analogue accesses – access with a single 64kbit/s channel, in principle to carry voice and data up to 56 kbit/s;
- Basic rate digital accesses (ISDN basic access) – accesses with two 64 kbit/s voice- and data-carrying channels and a 16 kbit/s signalling channel;
- Primary rate digital accesses (ISDN primary access) – accesses with 30 64 kbit/s voice- and data-carrying channels, one 64 kbit/s signalling channel and one synchronism channel, with a global 2 Mbit/s throughput;

II.2.2.1.2 New access services

Since the end of 2004 and with a great development in 2005, one of the FTS providers began to offer access to the public telephone network at a fixed location using the GSM network. Terminals have nonetheless a reduced geographical mobility.

Indeed, ICP-ANACOM decided on 25 February 2005 that the mobility of a terminal of

this kind of service should be the only one needed for access at a fixed location⁶. The service provider had to inform final users on the service and namely that the access to the service is only provided at the address that was declared by the end user and that there are limitations regarding caller localization in calls for the single European emergency number (112).

II.2.2.1.3 Telephone services to the general public at a fixed location

FTS gives users the ability to make and receive national and international voice calls and is generally provided bundled with several applications, facilities and optional services.

Due to the growing network convergence, integrated solutions made available by the providers may include other types of services at one single fixed access, namely voice, data and video, with the appropriate equipment. These solutions are usually adjusted to their targeted segments (residential, professionals, corporate, etc.).

The following table sums up the main (traditional voice, facilities, bundling, etc.) services that FTS providers can provide.

⁶ Access to the service must be assured using a terminal connected to a single pre-determined BTS (Base Transmission Station) when calls are being made, received and on. In exceptional cases, which must be technically justified and acknowledged as such by ICP-ANACOM, the connection of the terminal to two or, tops, three pre-determined BTSs is admissible.

Table 1 – Products and services provided by FTS providers

Products/services	Brief description
Analogue telephone line (only for direct access ⁷)	The traditional telephone service, for making and receiving calls at fixed locations. With the use of a modem it gives access to further services, namely data and fax communications.
Service facilities (only for direct access)	Facilities which modify or increase the basic features of the basic telephone service (e.g. call waiting, call re-routing, SMS and MMS, etc.).
Tariff services	Detailed invoicing
Digital telephone line — ISDN (Integrated Services Digital Network) services (only for direct access)	Also provided using a public telephone network integrating voice and data services into one single access. Currently available ISDN connections are as follows: - basic ISDN access: access to the ISDN with two 64 kbps voice and/or data channels and one 16 kbps signalling channel, which can be used for data in package mode; - primary ISDN access: access to the ISDN with 30 64 kbps voice and/or data channels, one 64 kbps signalling channel and one 64 kbps synchronism channel, with a global throughput of 2Mbps. Other supplementary services can be provided over ISDN lines, such as caller line ID or its suppression, call re-routing, etc.
Operator services	Information and telephone directory services, assisted communications services, collect call services, SMS and MMS, etc.
Access to public services	Access to emergency and other services.
Call-by-call selection and pre-selection	Function making it possible to select a FTS provider that is not the one holding the local loop. This choice is made by dialling a short code (the 10xy provider's prefix) when making the call – call-by-call selection – or with a contract in pre-selection.
Operator portability (only for direct access)	Function giving the subscriber to a given service provider the possibility to keep their telephone number when changing operator of the same service.
Public payphones for access to the fixed telephone service	Terminal equipment for access to the FTS (telephone booths) at public locations, including the conditioned access ones, available to the general public as a paid service.

Source: ICP-ANACOM

Voice over the Internet Protocol (VoIP) services

One of the trends that will affect the development of the provision of this service is the development of VoIP services.

ICP-ANACOM launched in November 2005 a public consultation to VoIP service providers. The results of this public consultation contributed to frame the provision of VoIP services. VoIP will expectedly give users direct, important benefits, for it can promote the coming into the market of new, innovative products at better prices.

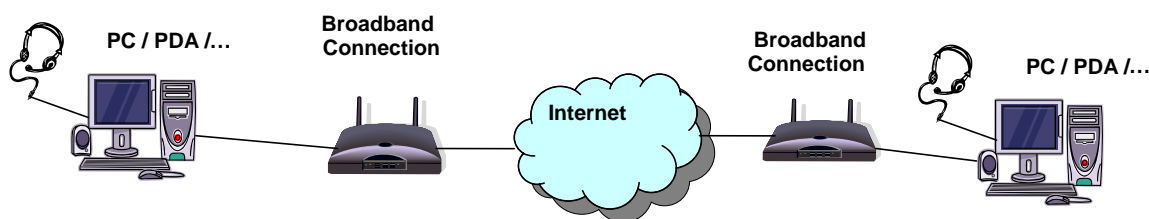
⁷ Depending on owning or not the local access, the FTS provider can or cannot provide the FTS in the form of direct or indirect access, respectively.

In connection with this consultation, four possible configurations of VoIP services were identified, as is briefly described below:

- Voice over the public Internet – the current most common VoIP use is the routing of IP packages over the public Internet. It is usually provided cost-free to the user and based on software for PC-to-PC connections. Its examples are SAPO *Messenger*⁸ and the basic version of *Skype*⁹, or Instant Messaging (IM) services¹⁰.

The following graph shows a scheme of the typical VoIP connection over the public Internet (PC-to-PC).

Graph 7 – Typical VoIP connection on the public Internet (PC-to-PC)



Because it is currently not viable to discriminate between VoIP from the remaining IP traffic (e-mail, www, etc.) on IP networks, the quality of this type of voice offer is similar to that of the remaining Internet-based applications, generally the “best effort” kind¹¹). Thus, the same “quality” – the technical parameters that can be tolerated in other IP applications – may not be suited for voice applications. On the other hand, interoperability with other telephone services or similar applications may not be assured¹².

⁸ See <http://messenger.sapo.pt/>.

⁹ See <http://www.skype.com/products/>.

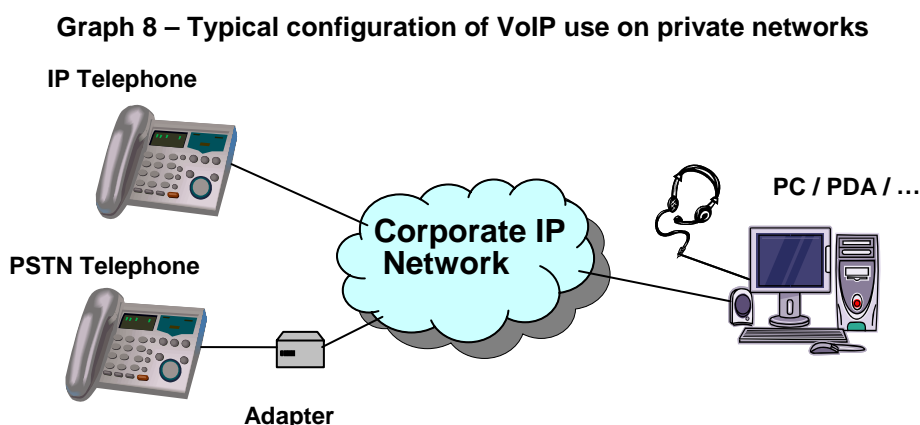
¹⁰ Services for real time communication in which a group of users in a contact list can send and receive texts messages (e.g. *MSN Messenger*).

¹¹ Way of sending data in an electronic communications network in which minimum performance levels are not assured. Network routing devices are limited to constantly seeking the route with the smallest delay possible for each data block that needs routing.

¹² E.g., communication between *Skype* and *MSN Messenger* is not currently possible.

- VoIP in private networks – there are voice services based on private IP networks, *i.e.*, privately used VoIP within corporations and not commercial services – e.g. corporate networks with IP technology and voice-data integration.

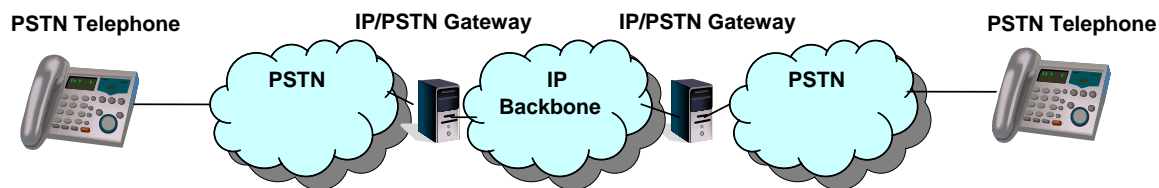
The following graph is a schematic example of a typical configuration of VoIP use in private networks:



This use of VoIP, although covered by the general authorization regime of Law no. 5/2004 of 10 February, is not a publicly available service provision and, thus, there are no restrictions or obligations in connection with voice services in private networks. There are nonetheless legal differences in dealing with companies offering services that are not available to the general public.

- VoIP at the IP backbone – another example is the use of VoIP at the IP backbone to support voice communications of an international operator or of a public communications network operator only using VoIP technology within their own network (their IP backbone). Examples of this second case are the “traditional” telephone service providers over cable networks, namely with triple play services (voice, Internet access and television services), such as Cabovisão.

The following graph contains a schematic example of the configuration of a typical network using VoIP at its IP backbone.

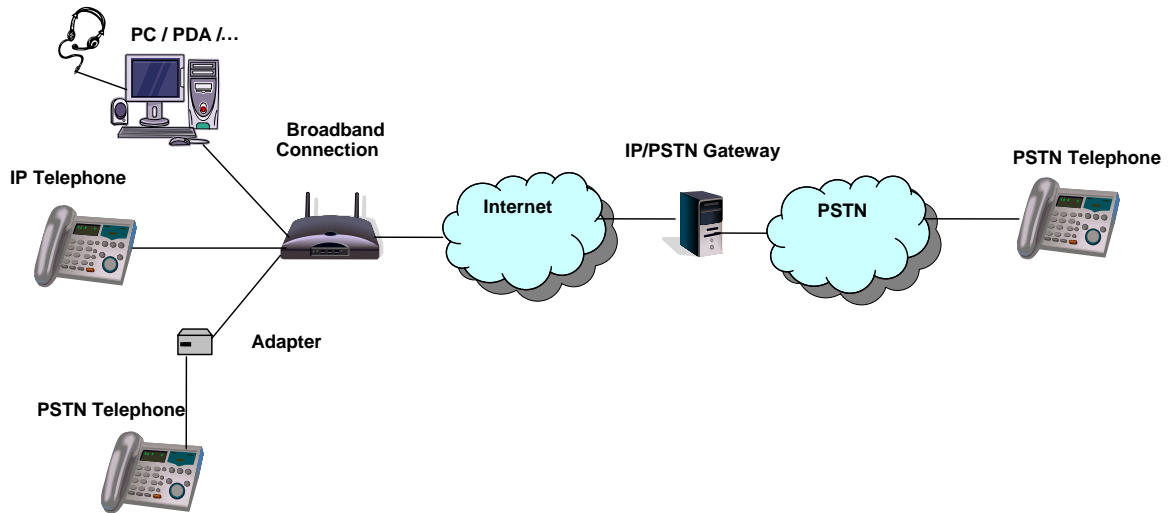
Graph 9 –Typical network configuration of VoIP use on an IP backbone

The current retail services based on this network configuration are already regulated as publicly available telephone services, thus being outside of this consultation's scope. It should be noted that it is not provided to the public as a VoIP service and/or does not affect the provision of the operator's retail voice services, namely the quality of the provided service.

- VoIP as a publicly available electronic communications service – VoIP services making it possible to make and receive calls to and from numbers of the national numbering plan (NNP¹³). In order to do that, they require a gateway to connect the IP network to the public switched telephone network (PSTN), as shown on the following graph:

¹³ See <http://www.anacom.pt/template2.jsp?categoryId=36478> .

Graph 10 – Typical network configuration of VoIP use as a publicly available electronic communications service



This graph contains a schematic example of the configuration of a typical network using VoIP as a publicly available electronic communications service.

These publicly available VoIP services, regulated by Law 5/2004, can be:

- i) Provided by an access provider, namely a broadband one, at a single fixed location and under conditions that are perceived by the user as equivalent to those of the traditional fixed telephone service. Examples of this kind of service are Oni220, provided by Onitelecom¹⁴, or others based on wholesale offers;
- ii) Of a nomadic use, *i.e.*, for use on several locations and based on third-parties accesses, *i.e.* with no control over the access network (an example of this kind of service is *Skype-OUT/IN*). There are currently 16 authorized providers for this kind of service. However, by the end of 2005 none of the providers had a service with the features of the FTS, since currently they don't make it possible, among other functions, to receive calls from fixed or mobile numbers – because they haven't been granted any numbers – and to access emergency services.

¹⁴ Vide www.oni220.pt/oni220.htm.

II.2.2.2 FTS providers

There were 22 legally authorized entities for the provision of FTS by the end of 2005.

Of these, 14 were active¹⁵. Regarding their mode of service provision, one of the said entities provided the service exclusively over direct access; three of them provided their services only over indirect access and ten entities used both types of access to provide the service.

The following table contains the list of entities that are legally authorized to provide FTS in 2005, including data on each of the providers' situation in the beginning and in the end of the year, and information on the market entries and exits during this time.

Table 2 – FTS providers in 2005

Name	Beginning	Entries	Exits	End
Adianis – Telecomunicações & Multimedia, S.A.	-	x		NA
AR Telecom – Acessos e Redes de Telecomunicações, S.A. ¹⁶	A			A
Broadnet Portugal, S.A..	NA			NA
BT Portugal — Telecomunicações, Unipessoal, Lda.	NA			NA
Cabovisão — Televisão por Cabo, S.A.	A			A
Colt Telecom – Serviços de Telecomunicações, Unipessoal, Lda.	A			A
Equant Portugal, S.A.	A			A
G9 SA — Telecomunicações, S.A.	A			A
Media Capital — Telecomunicações, S.A. ¹⁷	NA			NA
Netvoice — Comunicações e Sistemas, Lda.	A			A
Neuvex – Telecomunicações, Marketing e Informática, Lda.	NA			NA
Novis Telecom, S.A. ¹⁸	A			A
Onitelecom — Infocomunicações, S.A.	A			A
Optimus Telecomunicações, S.A.	NA			NA
PT Comunicações, S.A.	A			A

¹⁵ Of these 14 entities, only 12 have released statistical data during the period now being analyzed.

¹⁶ In September 2005 Jazztel Portugal – Serviços de Telecomunicações, S.A. change its designation to AR Telecom – Acessos e Redes de Telecomunicações, S.A.

¹⁷ Media Capital, SGPS is an indirect share holder of Media Capital – Telecomunicações, S.A. (which share capital is fully held by the *sub-holding* Meglo – Media Global, SGPS, S.A.). In November 2005, the Spanish holding Prisa purchased 33 per cent of Grupo Media Capital, SGPS, S.A. and became its major shareholder.

¹⁸ Further to Sonae's capital increase by means of an issue of shares held by France Telecom, as from October 2005, France Telecom holding ceased to be a direct shareholder of Novis (in which it had a 43 per cent stake). Grupo Sonae increased its shareholding of this company in the same proportion.

PT Prime — Soluções Empresariais Telecomunicações e Sistemas, S.A.	A			A
Radiomóvel - Telecomunicações, S.A.	-	x		NA
Refer Telecom — Serviços de Telecomunicações, S.A.	A			A
Telemilénio — Telecomunicações, Sociedade Unipessoal, Lda (Tele2)	A			A
Telsocomm — Telecomunicações, Marketing e Informática, Lda.	NA			NA
TMN — Telecomunicações Móveis Nacionais, S.A.	A			A
Vocalis Telekom — Dienste GmbH	NA		x	-
Vodafone Portugal — Comunicações Pessoais, S.A.	A			A
Total Active	14	-	-	14
Total Not Active	7	2	-	8
Total	21	2	-	22

Source: ICP-ANACOM

Legend: A — Active

NA — Not Active

During the year of 2005, the amount of active providers on the markets remained unchanged. However, there were some entries and exits of corporate groups by acquisitions and sales of companies' capital. These processes did not significantly change the structure of the market.

Table 3 – FTS providers

	2000	2001	2002	2003	2004	2005
Authorized providers	24	24	27	26	21	22
Active providers	14	14	13	13	13	14
Providers with direct and indirect access traffic	6	8	7	8	8	10
Providers with direct access traffic only	2	2	3	2	2	1
Providers with indirect access traffic only	6	4	3	3	3	3

Source: ICP-ANACOM

Unit: 1 provider

Following is the list of public payphones service providers.

Table 4 – Public payphones service providers in 2005

Name	Beginning	Entries	Exits	End
A. Rashid – Comércio de Material Eléctrico, Unipessoal, Lda.	-	X		A
Adianis – Telecomunicações & Multimedia, S.A.	-	X		NA
Blue Card – Serviços de Telecomunicações e Informática, Lda.	-	X		NA
C. C. Comunicações a Crédito, Lda.	A			A
Eportel – Prestação de Serviços em Telecomunicações, Lda.	-	X		NA
G9 SA – Telecomunicações, S.A.	-	X		A
Manuel Soares & Pereira, Lda.	-	X		A
Mobile Zone – Telecomunicações, Comunicações Electrónicas, Unipessoal, Lda.	-	X		A
Moneycall – Serviços de Telecomunicações, Lda.	-	X		A
Netcall – Telecomunicações e Tecnologias de Informação, S.A. ¹⁹	A			A
Phone One — Serviços de Telecomunicações, Lda.	A			A
PT Comunicações, S.A.	A			A
Stela Maria Bayombe Borges	NA		X	-
Teljap – Manutenção, Instalação e Comercialização de Telecomunicações, Lda.	-	X		NA
World Fun Telecom – Redes de Telefonia, S.A. ²⁰	A			A
Xalat – Comunicações Electrónicas, Unipessoal, Lda.	-	X		A
Total active	5	6	-	11
Total not active	1	4	1	4
Total	6	10	1	15

Source: ICP-ANACOM,

Legend: A — Active NA — Not Active

The significant increase in the amount of active providers of this service may be explained by several intertwined factors: on one hand, the liberalization of the telecommunications market made way for new public payphone offers. On the other hand, the growth of immigrant communities and the strong growth in the offer of virtual calling cards focused on specific destinations also increased the business opportunities in connection with this service. Lastly, the various monitoring actions that identified irregular situations in the operation of this kind of service and, consequently, the registration of these entities, are noteworthy.

¹⁹ In August 2005 the company reported the termination of Netcall as a limited liability partnership (Netcall – Telecomunicações e Tecnologias de Informação, Lda.), which became a public limited company (Netcall – Telecomunicações e Tecnologias de Informação, S.A.).

²⁰ In January 2005, company Fun Comytel Portugal – Redes de Multimédia e Telefonia, S.A. reported its change of designation into World Fun Telecom – Redes de Telefonia, S.A.

II.2.3 FTS usage profile

FTS users are mostly residential ones. Only about 13 per cent of FTS customers aren't residential. As shown on the table below, this ratio has significantly changed over the years now being analysed.

Table 5 – Amount of residential and non residential customers

	2001	2002	2003	2004	2005
Residential customers	87.0%	87.4%	87.3%	87.3%	87.4%
Non residential customers	13.0%	12.6%	12.7%	12.7%	12.6%

Source: ICP-ANACOM

II.2.3.1 Features of FTS usage

Below are some of the main features of the use of FTS.

II.2.3.1.1 Accesses

The large majority of direct accesses to the FTS are made up of analogue accesses. However, since the beginning of the liberalization process, the ratio of equivalent digital accesses grew considerably, mostly in 2000 and in 2001. It should be noticed that the alternative operators are the main responsible entities for the increase of this kind of accesses.

Table 6 – Distribution of accesses by type of access²¹

	2000	2001	2002	2003	3T04	3T05
Analogue accesses	83.5%	80.3%	79.0%	78.7%	78.5%	77.2%
Equivalent digital accesses	15.3%	18.7%	20.0%	20.4%	20.4%	21.8%
Public payphones	1.1%	1.0%	1.0%	1.0%	1.1%	1.1%

Source: ICP-ANACOM

²¹ Includes accesses installed at the request of customers and public payphones. Does not include own stock.

II.2.3.1.2 Traffic

Switched traffic routed by the fixed network is mainly made up of fixed-to-fixed calls (64 per cent). Less important is Internet access traffic (18 per cent), fixed-to-mobile traffic (12 per cent) and the outgoing international traffic (6 per cent).

The importance of the Internet access traffic has been decreasing fast due to the migration to broadband accesses. This has contributed to increase the importance of the remaining traffic destinations.

Table 7 – Distribution of traffic by destination (minutes)

	2000	2001	2002	2003	2004	2005
National fixed-to-fixed traffic	54.6%	48.2%	47.2%	51.3%	58.6%	64.0%
National fixed-to-mobile traffic	8.0%	8.2%	9.0%	9.3%	10.5%	11.9%
International outgoing traffic	3.1%	3.1%	3.1%	3.5%	4.3%	5.8%
Internet access traffic	34.3%	40.5%	40.7%	36.0%	26.6%	18.3%

Source: ICP-ANACOM

The above-described distribution is significantly changed if the amount of calls is considered, which is explained by the long length of Internet access calls.

Table 8 – Distribution of traffic by destination (calls)

	2000	2001	2002	2003	2004	2005
National fixed-to-fixed traffic	71.7%	68.4%	67.7%	69.3%	71.7%	72.5%
National fixed-to-mobile traffic	18.0%	18.9%	19.4%	19.6%	20.3%	20.5%
International outgoing traffic	3.4%	3.3%	3.4%	3.3%	3.5%	4.1%
Internet access traffic	6.8%	9.3%	9.5%	7.9%	4.5%	2.9%

Source: ICP-ANACOM

II.2.3.1.3 Traffic: average call length

Average voice call length reached about 161 seconds. Fixed-to-mobile calls' length stands out due to being shorter (111 seconds), maybe because of their price. On the contrary, the length of international calls is the highest one and has been increasing.

Table 9 – Average call length

	2000	2001	2002	2003	2004	2005
Total traffic (voice + Internet)	3.6	4.0	4.1	3.8	3.5	3.2
Voice traffic	2.6	2.6	2.7	2.6	2.7	2.7
National traffic (voice)	2.5	2.6	2.6	2.6	2.6	2.6
National fixed-to-fixed traffic	2.8	2.8	2.8	2.8	2.8	2.8
National fixed-to-mobile traffic	1.6	1.7	1.9	1.8	1.8	1.9
Outgoing international traffic	3.3	3.7	3.7	4.0	4.2	4.4
Internet access traffic	18.3	17.2	17.4	17.3	20.4	20.1

Source: ICP-ANACOM

Unit: Minutes

As mentioned above, the average length of Internet access calls is far above average, reaching about 20 minutes.

II.2.3.2 Barriers to service subscription

According to the data of the Electronic Communications Consumer Survey – February 2006²², and as shown on the table below, the main reason for not subscribing to the FTS is the use of the mobile phone or of other alternative media to communicate. Over 66 per cent of the panel mentioned other media as the main reason for not using the service.

The monthly signature as part of the invoicing items and the lack of a need to communicate were also considered as decisive factors for not using the fixed telephone.

²² The universe defined for this survey was individuals of both genders, aged 15 or older, and residing in mainland Portugal and in the autonomous regions of Madeira and Azores. The sample was sized for a maximum error of 2.5 per cent regarding the main results (with a degree of significance of 95 per cent). The sample was stratified by gender, age and region, based on the last General Population Census: 2001 Census. 2,020 interviews took place. Data gathering was made by means of personal, direct interviews. Field work took place between 17 January and 22 February and was made by Marktest.

Table 10 – Motives for not using the fixed telephone

Uses mobile phone	61.2%
Prefers not to pay the signature	16.5%
It's cheaper to make calls using other media	5.0%
Does not need to communicate	4.5%
Other motives	7.3%
DNN/DNA	1.3%

Source: Electronic Communications Consumer Survey – February 2006

II.2.4 FTS's evolution in 2005

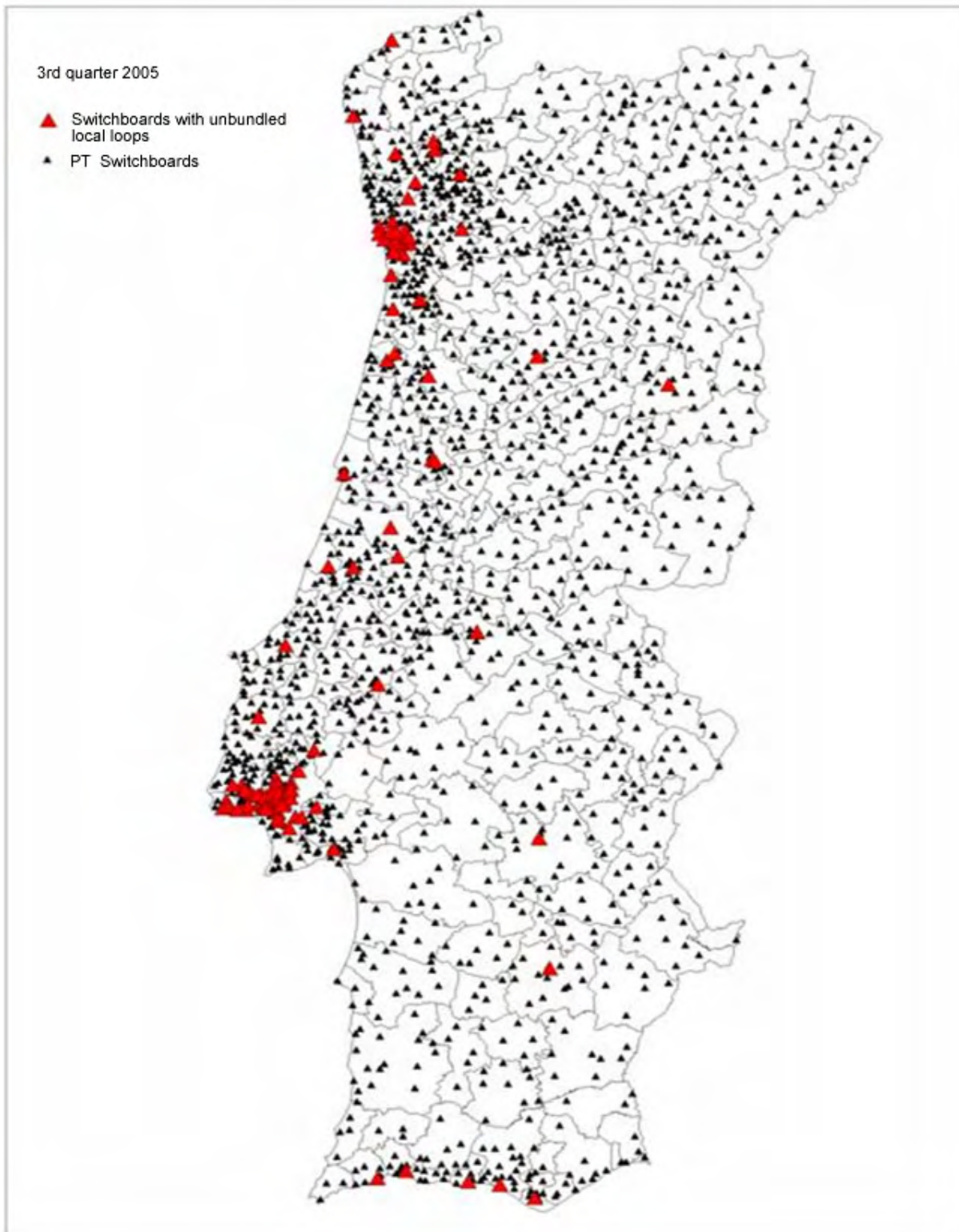
Below is a set of items on FTS's evolution in 2005: service availability, penetration, service's usage intensity, evolution of the access share, traffic and revenues, price evolution and quality perception.

II.2.4.1 Service availability and penetration

As shown on the graph below, FTS is available on the whole of the continental territory. In the autonomous regions there is also a strong presence of the PSTN, with switchboards and telephone concentrators on all the islands of the territory.

The graph also shows the distribution of MDFs (Main Distribution Frames) with unbundled local loops, which are still concentrated on the main urban centres of the country. Local loop unbundling led to the coming into the market of bundled services (broadband Internet and voice services and, more recently, TV) by alternative providers.

Graph 11 – Distribution of PT's switchboards and PT's switchboards with unbundled local loops

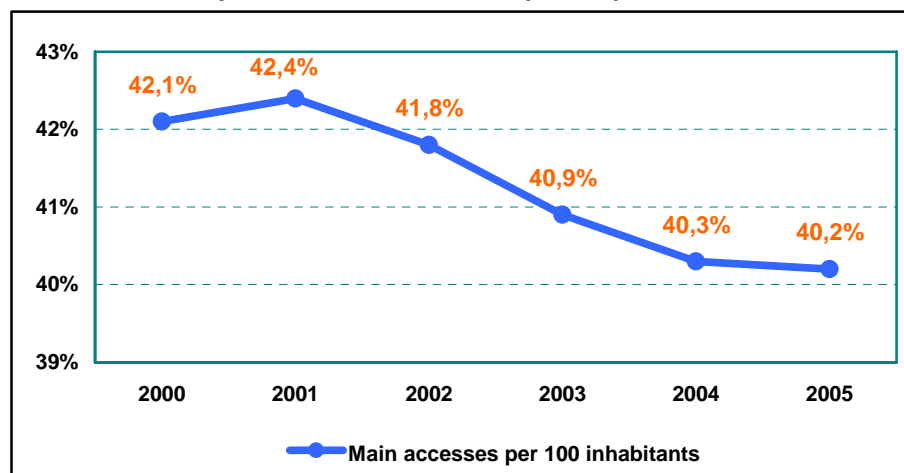


Source: ICP-ANACOM

In spite of generalized service availability, the penetration rate has been falling since

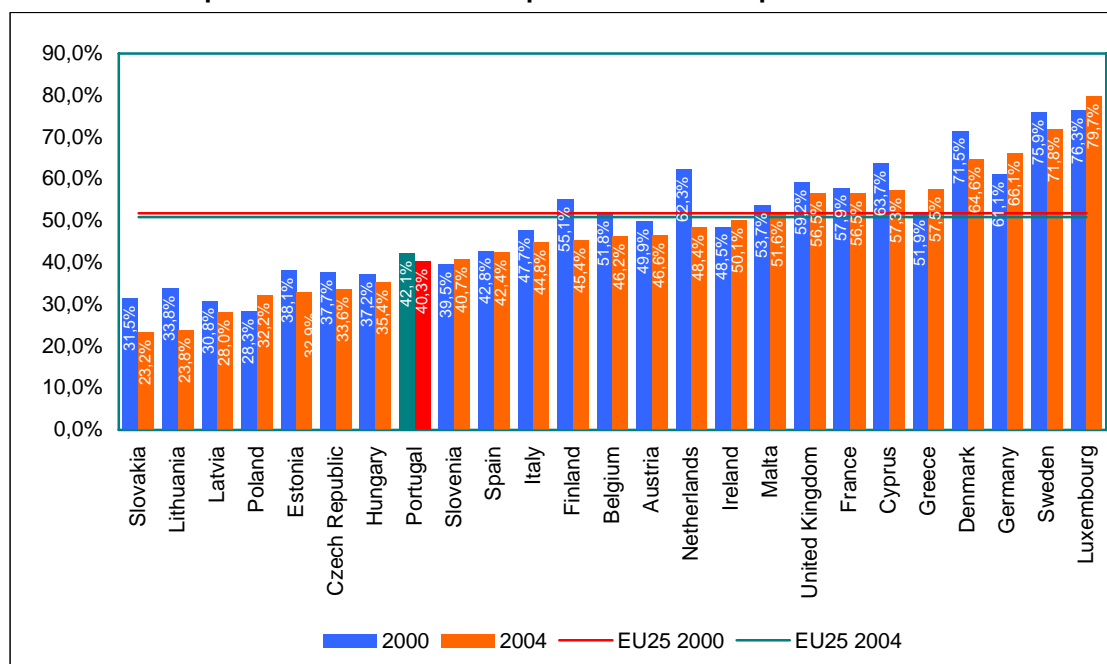
2002, which may be due to some of the factors mentioned in part 002, section 2.3. As from 2003, the rate at which the telephone penetration falls has decreased and in 2005 the fall in the penetration was due to the increase in the residing population versus the non reduction in the amount of accesses. Three important factors contributed to that: the growing use of ADSL as an Internet access technology, the significant growth of local loop unbundling and the coming into the market of new access services based on the GSM network.

Graph 12 – Evolution of telephone penetration



Source: ICP-ANACOM

Telephone penetration in Portugal is below the EU average. According to data from the International Telecommunications Union (ITU), fixed telephone penetration in the EU was 51 per cent in 2004. It should be noticed that, between 2000 and 2004, there was a 0.9 percent drop in EU's telephone penetration, about half of the drop in Portugal in that same period (1.8 per cent).

Graph 13 – International comparison of access penetration rates

Source: ITU, ICP-ANACOM, Eurostat

II.2.4.2 Amount of service users

In 2005 the amount of indirect access customers with pre-selection increased, whereas the number of direct access and indirect access by call-by-call selection customers remained stable.

Table 11 – Amount of FTS customers

	2001	2002	2003	2004	2005
Direct access customers	3,250,922	3,217,041	3,143,491	3,133,473	3,133,623
Pre-selection	389,811	374,268	355,517	394,894	470,143
Call-by-call selection	56,840	36,926	51,539	101,678	101,602

Source: ICP-ANACOM

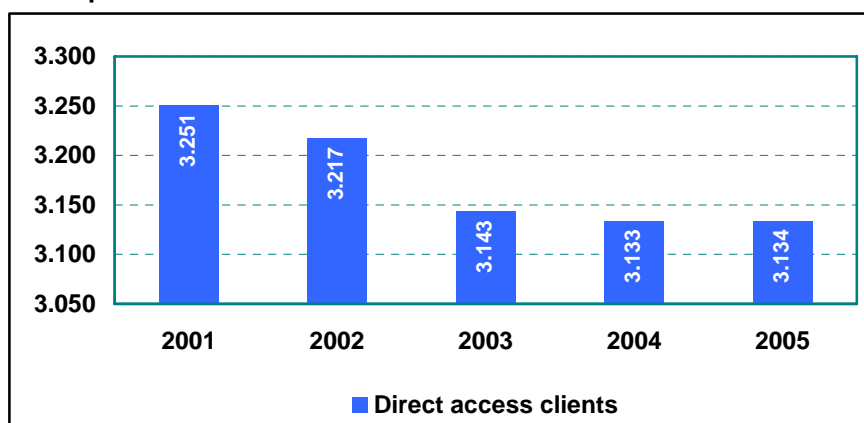
Unit: 1 Customer

The fact that the number of direct access customers remained stable in 2005 breaks a trend that was kept since 2001. However, vis-à-vis 2001, there is a drop of approximately 4 per cent.

The fact that this amount remains stable is mostly explained by the new services

marketed by the FTS providers. These new services took several shapes: new price plans, new tariff structures and bundled services. Highlight goes to the amount of the new customers that subscribed to the new access media based on the GSM network, the RUO-based services and the cable TV distribution network operators' services.

Graph 14 – Evolution of the number of direct access customers



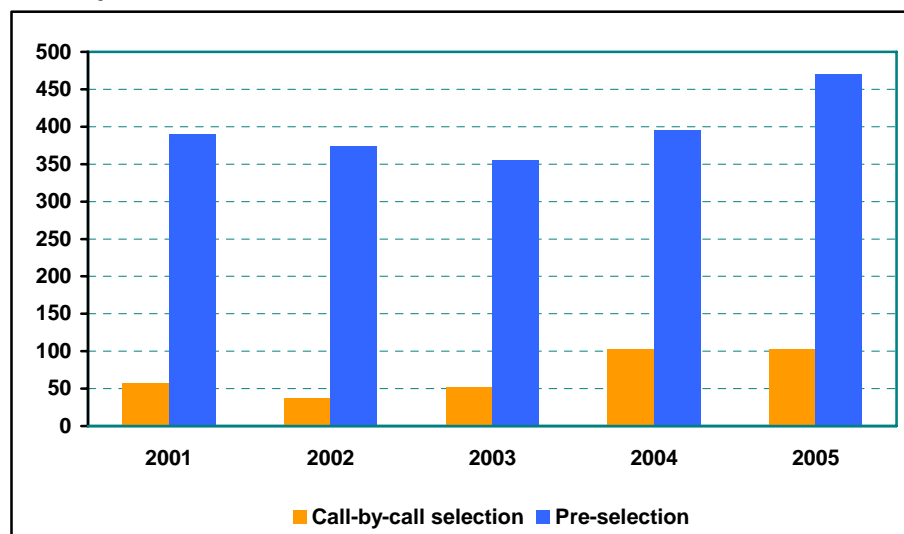
Source: ICP-ANACOM

Unit: thousands of customers

On the other hand, the amount of indirect access customers decreased significantly between 2001 and 2003, after a significant increase in the first two years after liberalization – when this access means was the main way for new providers to enter these markets.

This evolution might be explained by the stake of new operators on other, more lucrative means to offer their service, e.g. bundled services based on direct access, namely based on RUO. It should also be mentioned that the indirect access, which came about by regulatory initiative, was never seen as way to promote competition in the long run.

By the end of 2003, a new provider entered these markets and made them grow. Since then, the number of customers significantly increased again. In 2005, the amount of indirect access customers by pre-selection grew above 19 per cent a year. After a strong growth in 2004, the amount of call-by-call selection customers stabilized in 2005 at 101,000.

Graph 15 – Evolution of the number of indirect access customers

Source: ICP-ANACOM

Unit: thousands of customers

II.2.4.3 Service usage level

Below is the evolution of the service usage level, regarding accesses and traffic.

Accesses

By the end of 2005, there were about 4.2 million main installed accesses, a figure that is slightly below (0.1 per cent) that of a year before. For this relative stability contributed the increase in the number of digital accesses, of about 6 per cent, which softened the fall in the analogue accesses and in the amount of installed public payphones.

Table 12 – Amount of installed equivalent accesses

	2000	2001	2002	2003	2004	2005	Var. 2005/2004
Total main accesses*	4,321,090	4,384,554	4,350,528	4,281,119	4,238,270	4,234,075	-0.1%
Installed accesses at request of customers	4,226,778	4,292,397	4,266,451	4,197,138	4,146,698	4,127,441	-0.5%
Analogue accesses	3,571,101	3,482,428	3,403,584	3,334,468	3,290,781	3,219,657	-2.2%
Digital equivalent accesses	655,677	809,969	862,867	862,670	855,917	907,784	6.1%
Public payphones	47,742	45,486	43,805	41,525	47,442	45,366	-4.4%

Source: ICP-ANACOM

Unit: 1 access

*Includes installed accesses at the request of customers, own stock and public payphones.

Since 2001, a light trend of decreasing amount of installed accesses at the request of customers (-2.4 per cent between the end of 2000 and 2005) settled in, which may be due to some of the factors mentioned in part 002 section 2.3.

The investment that alternative operators made on the local network was not enough to reverse the mentioned trend. New providers mainly decided to enter the market using the indirect access or the unbundled local loop regulated services. Cabovisão was the exception. It staked since relatively early on a triple play strategy based on its cable TV distribution network and became the second largest provider of the public telephone network at a fixed location access service.

During the year 2005, the combined effect of new voice and/or TV bundled services and a new access service based on the GSM network by one of the operators led to the significant slow-down of the decrease in the number of installed access at the request of customers.

Traffic

Even though the number of customers of the service became stable, the traffic is still shrinking in 2005. This trend encompasses both the voice traffic and the Internet access traffic and is explained by the above mentioned decreasing number of FTS

customers and the strong growth in the broadband Internet access.

Table 13 – Fixed network-originated traffic (minutes)

	2000	2001	2002	2003	2004	2005
Total traffic (voice + Internet)	16,412	17,120	16,248	14,046	11,921	10,270
Voice traffic	10,779	10,178	9,639	8,995	8,752	8,385
National traffic (voice)	10,275	9,651	9,128	8,510	8,244	7,794
National fixed-to-fixed traffic	8,958	8,251	7,672	7,208	6,990	6,575
National fixed-to-mobile traffic	1,317	1,400	1,455	1,302	1,254	1,220
Outgoing international traffic	505	527	511	485	508	591
Internet access traffic	5,632	6,942	6,609	5,051	3,170	1,884

Source: ICP-ANACOM

Unit: million minutes

Table 14 – Fixed network-originated traffic (calls)

	2000	2001	2002	2003	2004	2005
Total traffic (voice + Internet)	4,509	4,319	4,016	3,703	3,444	3,228
Voice traffic	4,200	3,916	3,637	3,411	3,289	3,134
National traffic (voice)	4,045	3,772	3,498	3,290	3,168	3,000
National fixed-to-fixed traffic	3,232	2,954	2,719	2,565	2,468	2,340
National fixed-to-mobile traffic	813	818	780	725	700	660
Outgoing international traffic	155	144	138	121	121	134
Internet access traffic	309	403	380	292	155	94

Source: ICP-ANACOM

Unit: million calls

Voice traffic decreased every year since the year 2000. In the whole period, the amount of minutes decreased 22.2 per cent and the amount of calls decreased 25.4 per cent, average yearly growth rates of -4.9 per cent and -5.7 per cent, respectively. It should be noted that in 2005 this trend slightly slowed down: traffic shrunk 4.2 per cent and 4.7 per cent, respectively.

The analysis of the several items that make up the voice traffic shows that this global decrease is partly owed to the significant decrease in traffic to fixed geographical numbers. Cumulatively, since the beginning of liberalization, this type of traffic decreased 26.6 per cent, in minutes, and 27.6 per cent, in calls.

Regarding traffic to mobile numbers, there is a traffic decrease since 2002. Between 2002 and 2005, this type of traffic decreased 16 per cent. However, the decrease in traffic took place mainly in 2003.

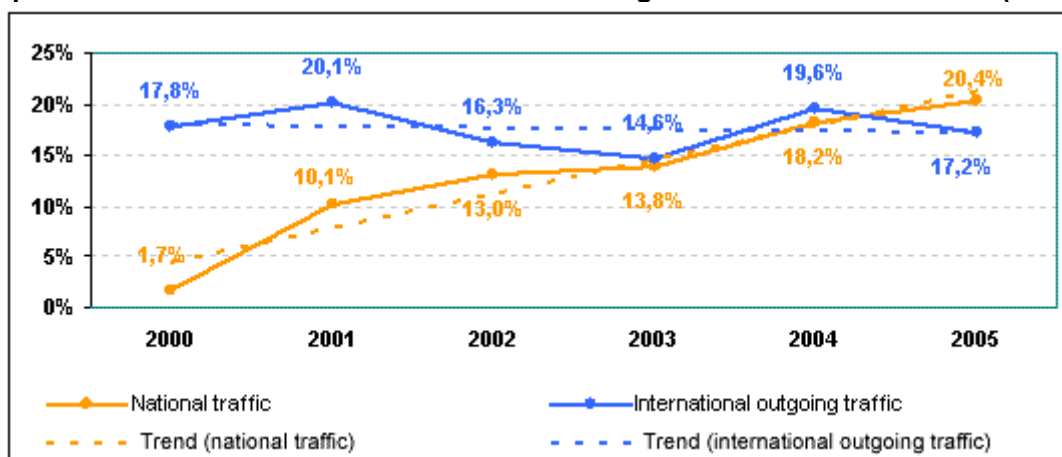
The amount of international calls with origin in the fixed network climbed for the first time since the beginning of liberalization, with 11 per cent more calls than in the previous year. This figure is nonetheless about 13.5 per cent below that of 2000, which reflects the significant increase in the average length of this type of calls (see Table 9). Regarding minutes, the volume of traffic in 2005 is 17 per cent above that of 2000. In 2005, international traffic grew 16.4 per cent, a figure that is largely above the average growth rate of the period of time now being analysed (3.2 per cent).

Regarding Internet access traffic, it shrunk 41 per cent in 2005, thus stressing the falling trend for this kind of traffic.

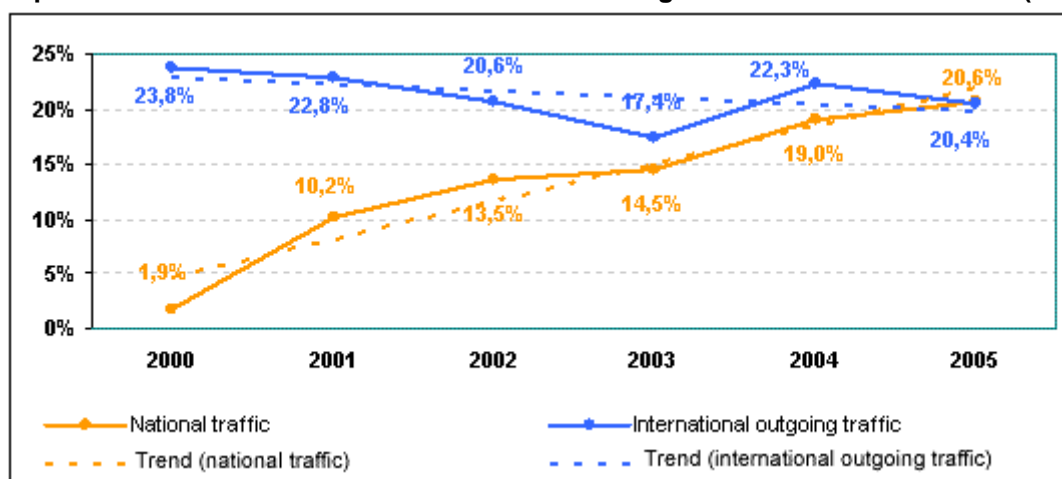
Indirect access traffic

In spite of the shrinking traffic, traffic routed using the indirect access mode has grown considerably. In 2005, indirect access traffic stood for 20.1 of all voice calls and 20.6 of minutes.

As shown on the following graphs, the weight of indirect access traffic in national traffic grew significantly in the last five years, namely in 2004 and in 2005.

Graph 16 – Evolution of the rate of traffic routed using the indirect access modes (minutes)

Source: ICP-ANACOM

Graph 17 – Evolution of the rate of traffic routed using the indirect access modes (calls)

Source: ICP-ANACOM

Regarding international outgoing traffic, indirect access became an important alternative to the direct access in the period right after the liberalization of the service. However, between 2002 and 2003, international indirect access traffic shrunk due to the decreasing investment by alternative providers on this segment. In 2004, with the entry into the market of a new provider with quite aggressive services, there was again a growth in the use of this access medium. In 2005, this type of traffic stood for about 17.2 per cent of the total conversation minutes and 20.4 of the total amount of calls.

Average traffic per customer

The following table shows that the average use per customer of indirect access decreased considerably since 2000, regarding both voice and Internet traffic. This process has been ongoing since 2002 and is largely boosted by shrinking dial-up and voice to fixed numbers traffics. It should also be highlighted that traffic to mobile numbers has stabilized in a certain way and that international traffic grew, mostly last year, which can be explained by the progressive reduction in prices for this type of calls.

Table 15 – Monthly traffic per direct access customer (minutes)

	2001	2002	2003	2004	2005
Total traffic (voice + Internet)	439	421	372	317	273
Voice traffic	261	250	238	233	223
National traffic (voice)	247	236	226	219	207
National fixed-to-fixed traffic	212	199	191	186	175
National fixed-to-mobile traffic	36	38	35	33	32
Outgoing international traffic	14	13	13	14	16
Internet access traffic	178	171	134	84	50

Source: ICP-ANACOM

Unit: minutes

Relative weight of FTS and MTS

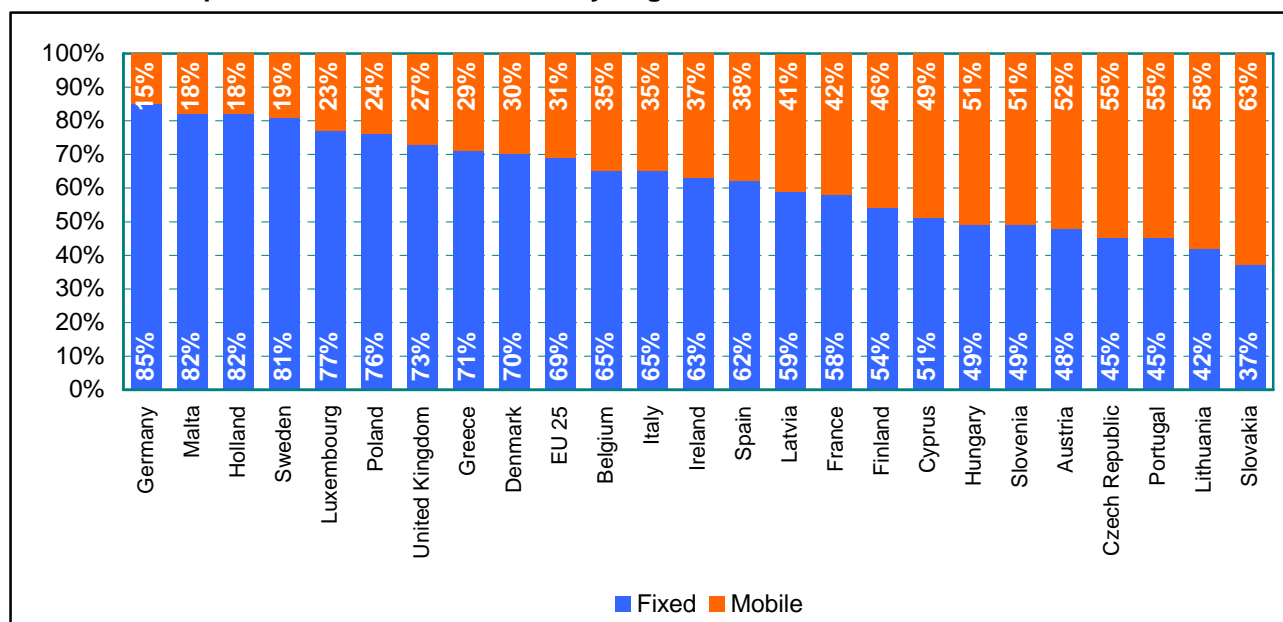
The relative weight of the FTS in the total traffic with origin in the fixed and mobile networks in Portugal is one of the lowest ones in the EU. This ratio was 45 per cent in 2004, in Portugal, vis-à-vis 69 per cent on average in EU25.

In 2005, traffic with origin in the mobile network was, for the first time, more than that with origin in the fixed network: of the total traffic, 53.4 per cent had its origin in the mobile network. If only voice traffic is taken into account, the proportion of traffic with origin in the fixed network decreased from 45 per cent in 2004 to 42 per cent in 2005.

As shown on the following graph, Portugal was, in 2004, the country in the EU with

the third smallest ratio of voice traffic with origin in the fixed network versus the total voice traffic. In seven of the countries of the EU25, traffic with origin in the mobile network has already passed 50 per cent.

Graph 18 – Distribution of traffic by origin in the EU25 countries – 2004



Source: European Commission, 11th Implementation Report

Note: Does not include dial-up Internet access traffic

Revenues²³

The strong fall in traffic and the price decrease led to a strong fall in FTS revenues, as shown on the table below. In 2005, total revenues dropped about 3 per cent, and traffic revenues decreased approximately 8.1 per cent. Installation and signature revenues grew about 3.2 per cent.

²³ Revenue figures of both FTS providers for 2005 are estimations.

Table 16 – FTS revenues

	2002	2003	2004	2005
Total revenues	1,664,799	1,559,486	1,494,923	1,450,167
Revenues from signatures and installation fees	630,134	649,657	680,740	702,579
Revenues from calls and SMS with origin in the fixed network ²⁴	1,034,665	909,829	814,183	747,588

Source: ICP-ANACOM

Unit: thousand euros

II.2.4.4 Service price level

Below is the evolution of the incumbent operator's prices. The box further shows an international FTS price comparison in 2005.

Incumbent operator's price index evolution

In 2005, the incumbent operator's prices continued to fall. Indeed, with the release of the new incumbent operator's tariffs in July 2005, there was a one-time decrease of 6 per cent in local calls, a 28 per cent decrease in the average price of regional calls and a 22 per cent decrease in the price of national calls. For the first time in the last few years, the incumbent operator's tariffs that came into force in July 2005 were compatible with stabilized monthly signature and installation prices.

Vis-à-vis the year when the sector was liberalized, the incumbent operator's price basket nominally decreased about 2.3 per cent and 2005, of all the years now being analyzed, was the year with the most significant decrease. Table 18 shows the average yearly nominal prices of the incumbent. It should be noted that a regional or national call cost in 2005 less than half its cost in 2000.

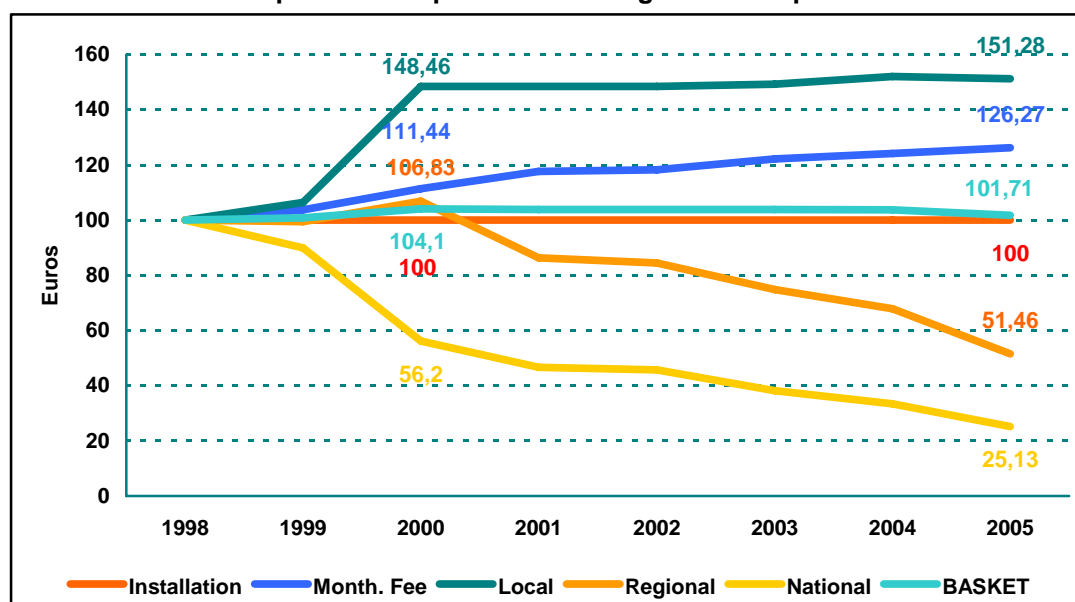
²⁴ Includes revenues from local, regional and national communications traffic, fixed-to-mobile calls (with origin in the fixed network), international outgoing traffic with origin in the fixed network and SMSs with origin in the fixed network.

Table 17 – Incumbent operator's nominal price index

	2000	2001	2002	2003	2004	2005	Var. 2004/ 2005	Var. 2000/ 2005
Installation	100.00	100.00	100.00	100.00	100.00	100.00	0.0%	0.0%
Monthly fee	111.44	117.60	118.19	122.13	124.18	126.27	1.7%	13.3%
Local	148.46	148.48	148.56	149.33	152.13	151.28	-0.6%	1.9%
Regional	106.83	86.38	84.49	74.88	67.89	51.46	-24.2%	-51.8%
National	56.20	46.65	45.77	38.23	33.43	25.13	-24.8%	-55.3%
Basket	104.10	103.86	103.87	103.81	103.74	101.71	-2.0%	-2.3%

Source: ICP-ANACOM

Note: 1998=100

Graph 19 – FTS price rebalancing – nominal prices

Source: ICP-ANACOM

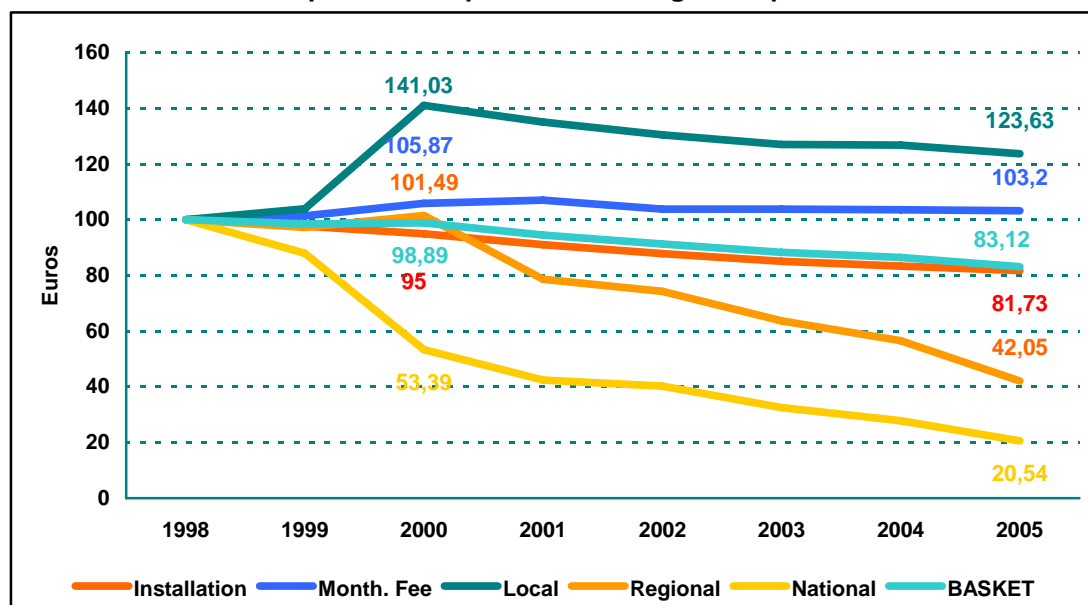
There was a generalized decrease of the real price of calls to the several destinations since 2000. Indeed, the incumbent operator's price basket had a real 16 per cent decrease from 2000 to 2005. The service's monthly fee kept up with the evolution of the CPI, with figures that are even below those of 2000.

Table 18 – Incumbent operator's real price index

	2000	2001	2002	2003	2004	2005	Var. 2004/ 2005	Var. 2000/ 2005
Installation	95.00	90.99	87.83	85.03	83.36	81.73	-2.0%	-14.0%
Monthly fee	105.87	107.01	103.81	103.84	103.52	103.20	-0.3%	-2.5%
Local	141.03	135.11	130.48	126.97	126.82	123.63	-2.5%	-12.3%
Regional	101.49	78.60	74.21	63.67	56.59	42.05	-25.7%	-58.6%
National	53.39	42.45	40.20	32.50	27.87	20.54	-26.3%	-61.5%
Basket	98.89	94.51	91.23	88.27	86.47	83.12	-3.9%	-16.0%

Source: ICP-ANACOM

Note: 1998=100

Graph 20 – FTS price rebalancing – real prices

Source: ICP-ANACOM

PRICES OF THE TELEPHONE SERVICE AT A FIXED LOCATION IN THE EU

1. Objective

Below is an international price comparison of the telephone service at a fixed location in the EU. It considered the prices of an analogue line by each country's incumbent operator. The analysis of these results should take into account that there were different liberalization calendars in the surveyed countries. In Portugal, the liberalization of the telephone service at a fixed location began on 1 January 2000.

2. Methodology

The figures used in this comparison, from Tarifica of December 2005 – except for Portugal, for which the tariffs of PT Comunicações, S.A. (PTC) in force in December 2005 were used – regard: (i) installation; (ii) monthly subscription; (iii) local calls; (iv) national calls; and (v) international calls. The election of the services to consider required the definition of a set of hypothesis, as shown on Table 20. Regarding Denmark, United Kingdom and Sweden, the prices were converted into Euros using the reference daily exchange rates of the European Central Bank of 27 January 2005.

Table 19 – Hypothesis regarding the offers of telephone service at a fixed location in the EU

Germany	The “ <i>T-Net standard</i> ” tariffs were used
Austria	The “ <i>Standard tariff</i> ” tariffs were used The service's installation and subscription include terminal equipment and maintenance
Belgium	The “ <i>Classic line</i> ” tariffs were used
Denmark	The “ <i>Fastnet</i> ” tariffs were used It was considered that the normal time table for local and national calls is between 8:00 and 20:00, not between 8:00 and 19:30, as in force for this service
Spain	The “ <i>Residential</i> ” tariffs were used
Finland	It was considered that the subscription is the average subscription of the nine combinations of “ <i>Zone</i> ” and “ <i>Area</i> ” subscriptions of this service. The service's “ <i>Trunk '101 long distance</i> ” class was considered the “ <i>National</i> ” class
France	The “ <i>Residential</i> ” tariffs were used
Holland	The “ <i>BelBasis</i> ” tariffs were used
Italy	The “ <i>Residential</i> ” tariffs were used It was considered that the normal time table for local and national calls is between 8:00 and 19:00, not between 8:00 and 18:30, as in force for this service
Portugal	The “ <i>Assinatura de base</i> ” tariffs were used
United Kingdom	The “ <i>Residential Option 1</i> ” tariffs were used

Sweden	The “ <i>Telia Bas</i> ” tariffs were used
--------	--------------------------------------------

Source: ICP-ANACOM

Regarding international calls, prices of calls to fixed networks were considered, based on the seven most representative destinations of Portugal’s international outgoing traffic (France, Spain, United Kingdom, Germany, Brazil, USA and Switzerland). According to the available data, these countries stand together for about 71 per cent of the international outgoing traffic of the telephone service at a fixed location in Portugal.

Regarding the size of the tariff zones, the comparison used the same step tariffs’ distances as in Portugal and picked for each country the step prices that are closest to the Portuguese ones. Thus, for the reckoning of the “Local” step tariffs in Spain and Holland, it used the average of the “Local” and “Regional” step prices, respectively weighted by the local call minutes share of the combined local and regional calls and by the regional call minutes share of the combined local and regional calls of the telephone service at a fixed location in Portugal. Regarding Belgium and Luxembourg, it used the “National” step tariffs to reckon the “Local” step prices.

The prices that are shown on this document do not include VAT and they were reckoned by applying the hourly consumption profiles of PTC to the tariffs of the remaining countries’ tariffs. The hourly periods practiced in Portugal were applied to all countries. Further to considering the prices for each of the considered services, a representative basket of the monthly use of the services by an average Portuguese consumer was set up. In order to do so, installation was excluded and the remaining services were weighted by the ratios of their amounts and the average monthly number of consumers.

Specifically, the reckoning of the prices of international calls was based on the average prices of calls to each of the considered destinations, in accordance with the above-mentioned method. In order to reach the prices that are compared on this document, those average prices were weighted by their traffic shares of the international outgoing traffic of the telephone service at a fixed location in Portugal for the seven destinations that were considered.

The EU15 averages are the simple arithmetic averages of the prices in the considered

countries, Portugal excluded.

3. Telephone service at a fixed location in the EU

Based on the above mentioned data and assumptions, the following prices were reckoned: (i) price of the installation of an analogue line; (ii) price of a monthly subscription of an analogue line; (iii) average price per minute of a local three-minute call using an analogue line; (iv) average price per minute of a national three-minute call using an analogue line; (v) average price per minute of an international three-minute call using an analogue line; and (vi) price of an average consumer's monthly basket in connection with an analogue line.

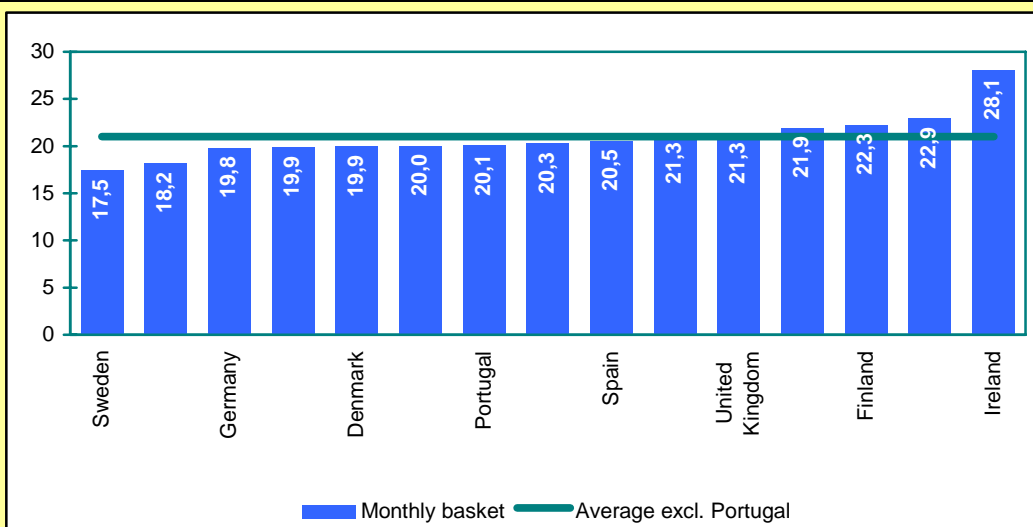
Table 20 – Telephone service at a fixed location in Portugal

	Price (€)	Average without Portugal	Portugal's position	Deviation to the average without Portugal
Installation	71.83	72.12	8	-0.4%
Monthly subscription	12.66	13.73	6	-7.8%
Average price per minute of a local three-minute call using an analogue line	0.0376	0.0352	10	6.7%
Average price per minute of a national three-minute call using an analogue line	0.0550	0.0617	7	-10.8%
Average price per minute of an international three-minute call using an analogue line	0.2589	0.2526	10	2.5%
Monthly basket	20.06	20.99	7	-4.4%

Source: ICP-ANACOM

In Portugal, the price of the average consumer's monthly basket in connection with an analogue line is about 4 per cent below the same basket's average prices in the EU15 countries, as shown on the next graph.

Graph 21 – Price of the average consumer's monthly basket in connection with an analogue line



Source: ICP-ANACOM

4. Conclusions

The international comparison leads to the conclusions that Portugal, vis-à-vis the average of the EU15 excluding the country:

- (i) Has approximately the same price for the installation of an analogue telephone line;
- (ii) Has a monthly subscription that is about 8 per cent below;
- (iii) Has an average price per minute of a local three-minute call using an analogue line about 7 per cent above;
- (iv) Has an average price per minute of a national three-minute call using an analogue line about 11 per cent below;
- (v) Has an average price per minute of a international three-minute call using an analogue line about 2.5 per cent above; and
- (vi) Its price of an average consumer's monthly basket in connection with an analogue line is about 4.5 per cent below.

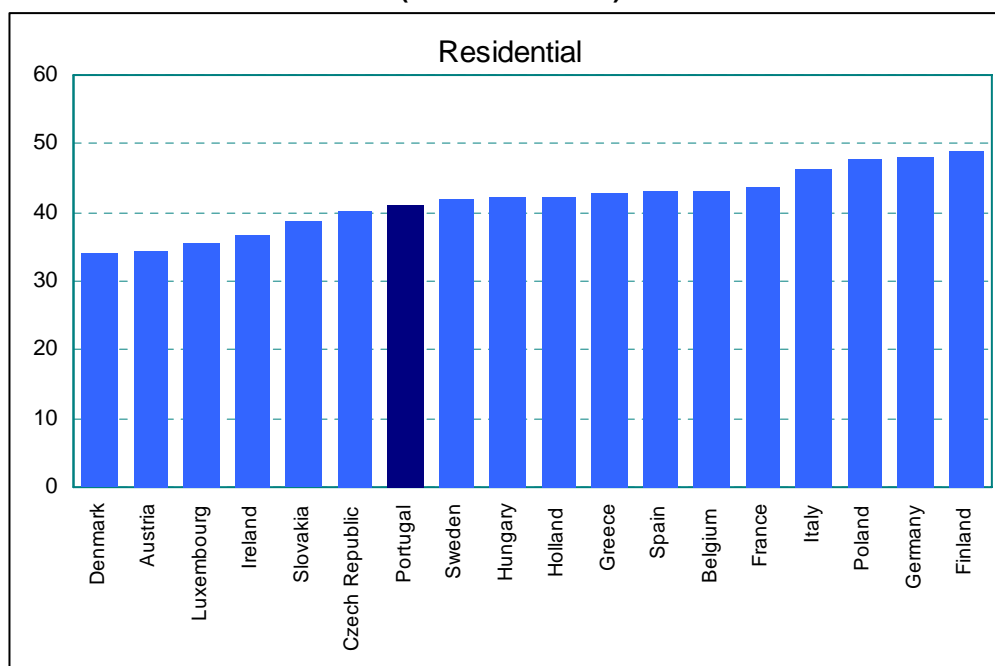
Prices of fixed-to-mobile calls

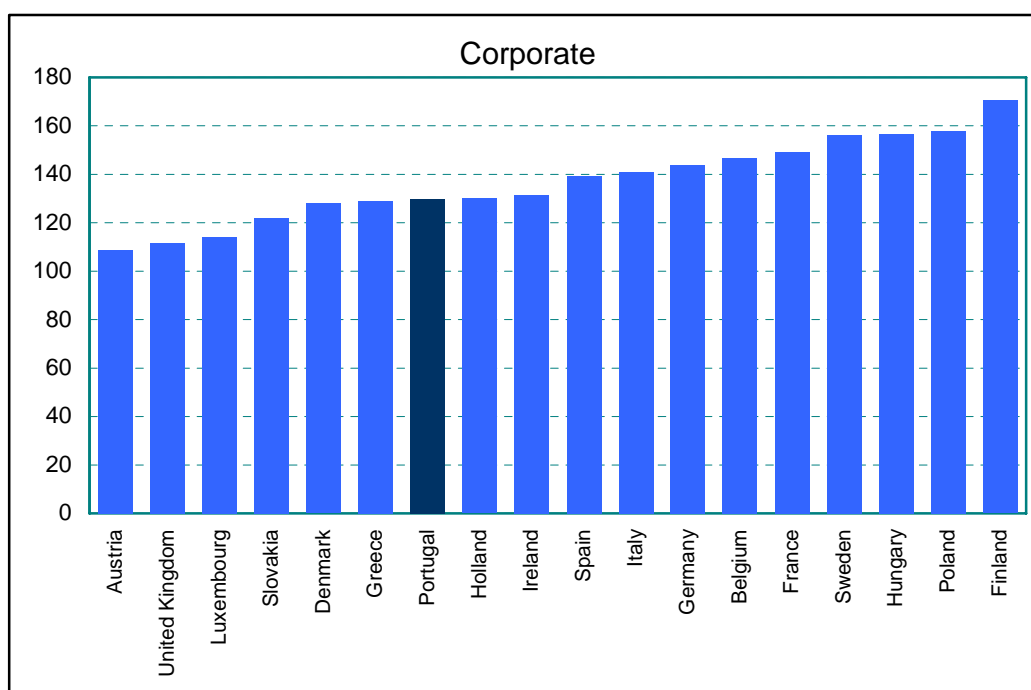
The decrease in mobile interconnection prices during 2005 led to a sharp convergence of the prices of fixed-to-mobile calls in Portugal with the average figure for the remaining European countries, becoming even lower than that in both market segments (residential and non-residential) in November 2005, which is the latest month of Teligen's available data.

In the residential segment, in November, Portugal's deviation from the average of the remaining countries in the comparison was -0.2 per cent. One year earlier, the deviation was of +23.9 per cent and in the same month but in 2000, the deviation was as high as +29.5 per cent.

In the non-residential segment, the deviation in November 2005 is more important, reaching -4.2 per cent. The deviation from the average of the remaining analyzed countries reached +16.4 per cent in November 2004 and +23.9 in the same month but in 2000.

Graph 22 – Comparison of national (fixed-to-mobile) residential and corporate prices – EU (OECD countries)





Source: Teligen

II.2.4.5 Evaluation by consumers

In general, FTS has high levels of satisfaction. According to the last Electronic Communications Consumer Survey, over 90 per cent of its users were satisfied with the overall quality of this service²⁵.

Table 21 – Evaluation of the overall quality of the FTS

Very good	12.6%
Good	79.3%
Bad	5.4%
Very bad	0.5%
Nr/Na	2.2%

Source: Electronic Communications Consumer Survey – February 2006

Regarding consumer satisfaction with the prices of the FTS, the appreciation is less positive, for as about 34 per cent of the inquired people said that they were not satisfied with the prices of their operator(s)²⁶.

²⁵ Question made to the inquired people: "How do you rate the global quality of the fixed telephone service that is provided to you? (information, customer service, sound quality, lost calls, etc.)"

²⁶ Question made to the inquired people: "What is your degree of satisfaction regarding the price that you charged currently?"

Table 22 – Degree of satisfaction towards the prices of the fixed network

Very satisfied	5.8%
Satisfied	58.2%
Not satisfied	29.5%
Not satisfied at all	4.1%
Nr/Na	2.5%

Source: Electronic Communications Consumer Survey – February 2006

Especially the price of the fixed-mobile traffic is less satisfactory, with 55 per cent of the inquired people saying that they are not satisfied with the prices of their service provider²⁷.

Table 23 – Degree of satisfaction towards the prices of the fixed-to-mobile traffic

Very satisfied	2.4%
Satisfied	32.4%
Not satisfied	38.6%
Not satisfied at all	16.0%
Nr/Na	10.5%

Source: Electronic Communications Consumer Survey – February 2006

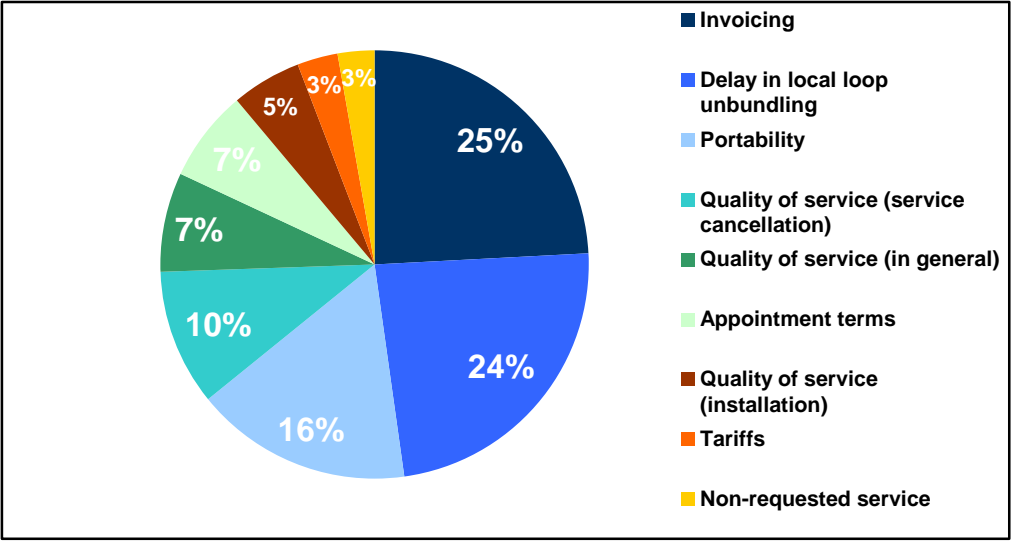
Another consumer satisfaction indicator is the number of complaints.

ICP-ANACOM's UM-TSM (Mission Unit for the Handling of Market Requests) received about 1,144 complaints regarding the FTS and its providers, during 2005.

As shown on the following graph, about half of those requests regard invoicing issues (25 per cent) and delays in local loop unbundling (24 per cent). Figures regarding portability issues (16 per cent) and service cancellation (10 per cent) also stand for a large amount of the overall number of complaints put forward.

Graph 23 – Distribution of requests by area – 2005

²⁷ Question made to the inquired people: "And regarding the price of calls from the fixed telephone to a mobile one, are you...?"



Source: ICP-ANACOM

II.2.4.6 Development of competition

In 2005, the share of installed accesses at the request of customers of Grupo PT decreased 4 per cent, the largest drop since the beginning of liberalization. Since the end of 2000, Grupo PT lost 10.4 per cent of its overall access share.

Table 24 – Grupo PT's access share

	2000	2001	2002	2003	2004	2005
Overall main accesses	99.7%	98.2%	95.3%	94.4%	93.3%	89.3%
Installed accesses at the request of customers	99.7%	98.1%	95.2%	94.3%	93.2%	89.0%
Analogue accesses	99.9%	98.3%	95.4%	94.6%	93.9%	91.3%
Equivalent digital accesses	98.7%	97.1%	94.5%	93.2%	90.5%	81.1%

Source: ICP-ANACOM

As shown on the table below, the evolution of the direct access customers share followed the evolution of the share of accesses. Indirect access is almost fully operated by alternative providers.

Table 25 – Grupo PT's customer shares

	2001	2002	2003	2004	2005
Direct access customers	98.2%	95.1%	94.6%	93.8%	88.9%
Indirect access customers					
Pre-selection	0.1%	0.6%	0.6%	0.7%	0.9%
Call-by-call selection	0.0%	0.4%	0.7%	0.3%	0.4%

Source: ICP-ANACOM

Regarding traffic shares, there has been a progressive decrease in the incumbent operator's share of voice traffic, which is distributed evenly among the several traffic destinations.

Table 26 – Grupo PT's traffic shares (minutes)

	2000	2001	2002	2003	2004	2005
Total traffic (voice + Internet)	98.2%	93.4%	90.5%	88.5%	83.7%	78.2%
Voice traffic	97.3%	89.2%	84.3%	82.4%	78.1%	74.1%
National traffic (voice)	98.0%	89.7%	84.4%	82.4%	78.1%	74.2%
National fixed-to-fixed traffic	98.0%	89.8%	84.7%	82.6%	78.3%	74.4%
National fixed-to-mobile traffic	98.0%	89.1%	83.0%	81.4%	76.8%	72.9%
Outgoing international traffic	82.0%	79.8%	81.5%	82.1%	77.4%	73.0%
Internet access traffic	100.0%	99.6%	99.6%	99.5%	99.4%	96.3%

Source: ICP-ANACOM

Table 27 – Grupo PT's traffic shares (calls)

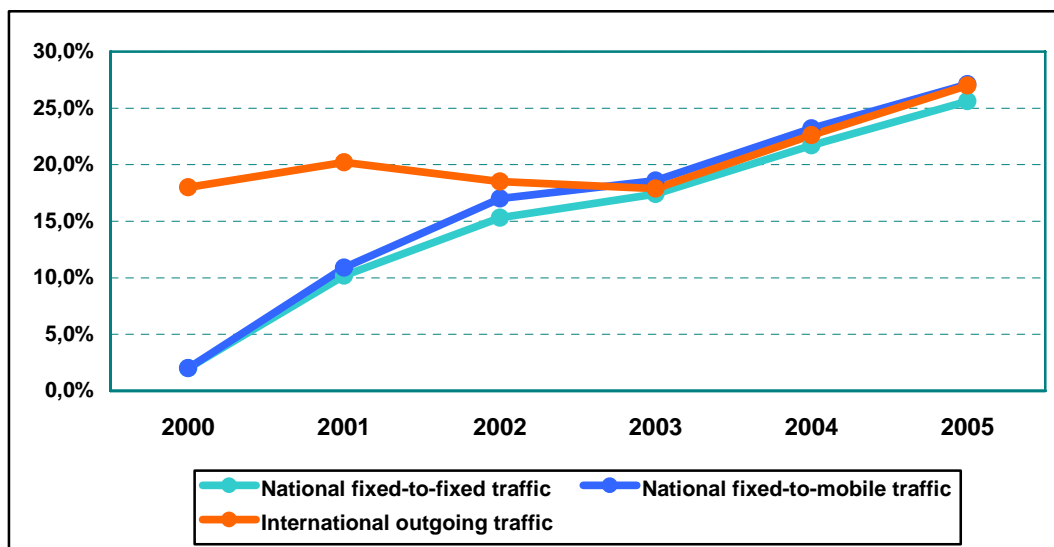
	2000	2001	2002	2003	2004	2005
Total traffic (voice + Internet)	97.3%	90.5%	85.0%	83.0%	78.2%	74.8%
Voice traffic	97.1%	89.6%	83.6%	81.7%	77.3%	74.2%
National traffic (voice)	97.9%	90.0%	83.8%	81.7%	77.3%	74.3%
National fixed-to-fixed traffic	97.9%	89.9%	83.7%	81.5%	77.2%	74.3%
National fixed-to-mobile traffic	98.0%	90.5%	84.2%	82.7%	78.0%	74.3%
Outgoing international traffic	76.1%	77.5%	78.0%	80.1%	75.4%	72.1%
Internet access traffic	99.9%	99.7%	99.0%	99.0%	97.7%	93.8%

Source: ICP-ANACOM

Regarding the national destinations of voice traffic (mobile and fixed geographical numbers), alternative operators were responsible, in 2005, for over a quarter of the traffic (measured in amount of both minutes and calls), a figure that is approximately 4 per cent above the figures of 2004. Growth in the last two years is explained by the coming into the market of a new indirect access provider that, with pretty aggressive offers, has gained an important share of this market.

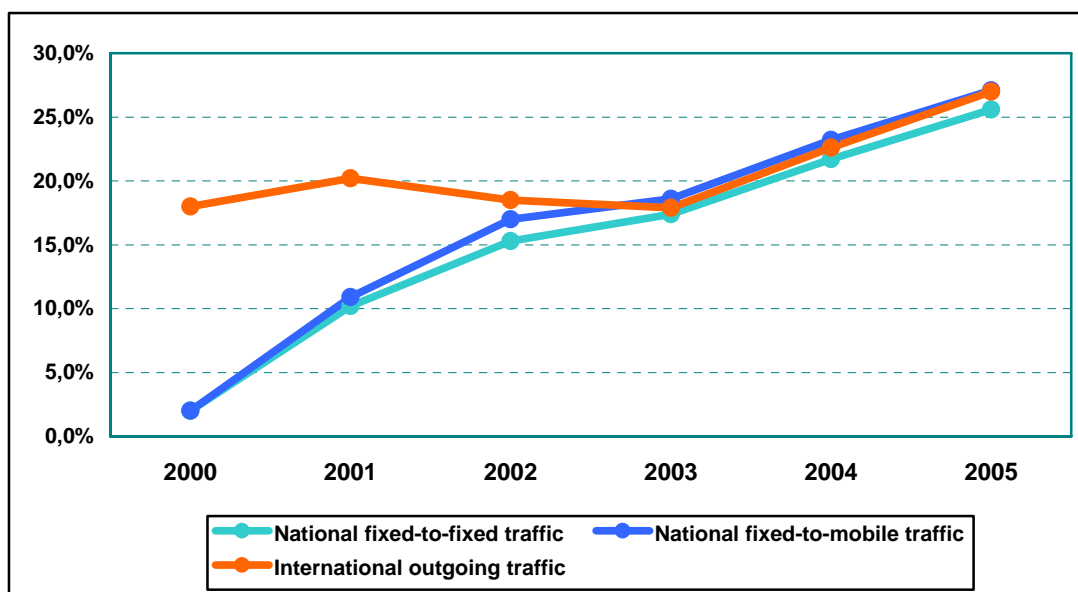
Regarding the outgoing international traffic, after a year of a strong implementation of the new providers, with 18 per cent shares of minutes and 23.9 per cent of calls, growth has been slower, even though a new boost was apparent in the last couple of years. In 2005, new providers gained shares of about 26 per cent of routed minutes and 27.8 per cent of made calls.

Graph 24 – Evolution of the alternative operators' traffic shares (minutes)



Source: ICP-ANACOM

Graph 25 – Evolution of the alternative operators' traffic shares (calls)



Source: ICP-ANACOM

In terms of revenues, Grupo PT's share reached 86.5 per cent in 2005²⁸, which is 2 per cent below that of the previous year. If we analyse the revenue items, this decrease is namely due to a progressive increase in the providers' traffic revenue share, which was 76.3 per cent in 2005, whereas in 2002 it was only 85.6 per cent.

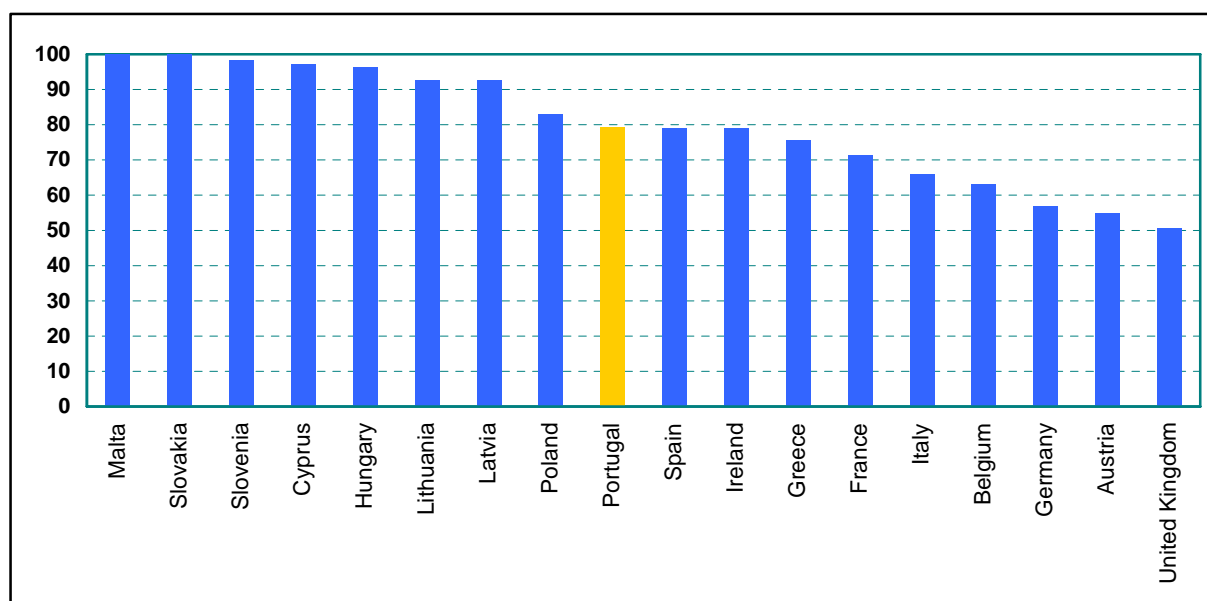
²⁸ Revenue figures of both FTS providers for 2005 are estimations.

Table 28 – Grupo PT's FTS revenue share

	2002	2003	2004	2005
Overall revenue	90.9%	90.2%	88.5%	86.5%
Revenue from subscriptions and installation fees	99.6%	99.7%	98.5%	97.4%
Revenue from calls and SMSs with origin in the fixed network ²⁹	85.6%	83.4%	80.2%	76.3%

Source: ICP-ANACOM

Based on 2004 results, and according to the European Commission's 11th Implementation Report, Portugal's position was in the EU's mean, regarding the incumbent operator's revenue share³⁰. Portugal is at the same level of countries such as Ireland and Spain, but with figures that are well above those of countries such as the United Kingdom, Germany and Austria.

Graph 26 – Comparison of revenues from traffic with origin in the fixed network in the EU

Source: European Commission, 11th Implementation Report

Besides this evolution of market shares is also the growth in number portability.

²⁹ Includes revenues from local, regional and national communications traffic, fixed-to-mobile calls (with origin in the fixed network), international outgoing traffic with origin in the fixed network, traffic with origin in public payphones and SMSs with origin in the fixed network.

³⁰ Includes revenues from local, regional and national communications traffic, fixed-to-mobile calls (with origin in the fixed network), international outgoing traffic with origin in the fixed network and Internet access traffic. Does not include revenues from SMSs or from traffic with origin in public payphones. Data regarding Estonia, Sweden Czech Republic, Finland, Holland and Luxembourg are not available. Data regarding Portugal does not include revenues from the Internet access traffic.

During 2005, the amount of ported geographical numbers had a strong thrust, with a 67 per cent growth rate, well above that of the previous year (34 per cent). In fact, in absolute terms, 2005 was the year when portability most grew, reaching by the end of this year 265,000 ported numbers. To this has significantly contributed the expansion of services based on the unbundling of the local loop and one service based on the GSM network.

Table 29 – Ported numbers

	2001	2002	2003	2004	2005
Geographical numbers	2,332	63,427	118,017	158,623	265,077
Non-geographical numbers	6	145	214	277	351

Source: ICP-ANACOM

II.3 Mobile Telephone Service (MTS)

This chapter contains the state of the MTS at the end of 2005 and the evolution of this service throughout the year.

II.3.1 Main items of the evolution in 2005

- There was a significant increase in the number of subscribers in 2005 – 10.5 per cent. Portugal is one of EU's seven countries with a MTS penetration rate above 100 per cent.
- There was also a significant increase in the MTS voice traffic – the amount of calls grew 6.8 per cent and the amount of minutes 8.9 per cent. This increase in traffic was due to the increase in the on-net traffic³¹, which more than compensated the decrease in the amount of traffic to fixed networks.
- The year 2005 had a significant increase in the number of short messages (SMSs) that were sent – 83.3 per cent more than in the previous year. This was due to the promotional campaigns by mobile operators to intensify the use of this service.
- During the year 2005, TMN, Optimus and Vodafone launched low cost or discount offers in connection with new trade marks (TMN's UZO, Optimus's Rede 4 and Vodafone Directo). The main feature of these offers is that they do not have different tariffs for on-net and off-net calls. These offers are marketed on specific sites and some physical selling points.
- Mobile operators TMN, Vodafone and Optimus started to provide the UMTS service in the first half of 2004. Recently (in the third quarter of 2005), the three operators began to market the new 3G cards for laptops that give mobile access

³¹ Traffic within the operator's own network.

to the broadband Internet. The estimated number of 3G customers in Portugal, including migrations, was 400,000 in October 2005³².

II.3.2 MTS's offer

MTS is a public switched electronic communications service that routes signals using the land electronic communications networks. The access network is made up of radio media and the terminals are mobile.

The service is provided by the duly licensed entities, since the use of the frequencies is subject to the granting of individual rights of use³³.

Below is a more detailed description of the provided services and of the entities providing these services in Portugal.

II.3.2.1 MTS

The first generation (1G) of the mobile service was exclusively designed for voice communications. It used analogue signals and a transmission technique based on FDMA (Frequency Division Multiple Access)³⁴. This transmission technique grants a frequency band to each channel. Thus, 1G is identified with the analogue systems, which only provide the voice service. In Portugal, the service was provided by TMN since 1989 and was terminated on 30 October 1999.

The second generation (2G) uses ETSI's Global System for Mobile Communications/ Digital Communications System (GSM/DCS)³⁵; and works on the 900 MHz (GSM) 1800 MHz (DCS) frequency bands. Its main feature is the use of digital technology and provides, besides the voice service, low throughput data services (e.g. fax and e-mail). This generation, which already has some data transmission capacity, uses a

³² Source: European Mobile Communications Report, Issue 197, November 2005.

³³ Cf. no. 3 of article 19 of Law no. 5/2004 of 10 February.

³⁴ Interference-free access system which main feature of the access discipline to the various users is the granting of different frequencies to each of them.

³⁵ ECSI – European Customer Satisfaction Index.

more efficient technique for the use of spectrum, based on TDMA (Time Division Multiple Access)³⁶.

GSM also makes international roaming possible. GSM networks had a very swift and broad geographical roll-out and are currently spread for 213 countries³⁷. Currently, GSM technology is used by 1/4 of the world population³⁸.

The technical features of this (narrow band) platform and the limitations of its terminal equipment (small screen and keyboard, battery hold-up time and limited memory and processing capacity), although acted as facilitators of a large scale mobility, do not make it possible for an Internet access via a mobile telephone as good as that of a personal computer connected to a fixed telephone network. The GSM platform was nevertheless perfected and developed to offer a progressively broad range of voice and data services.

It was in this framework that several manufacturers joined efforts to define a protocol that could be used by all mobile communications systems, which they named WAP (Wireless Application Protocol)³⁹, and which made it possible for standard communication between a mobile phone and a server at the mobile operator's network to take place. Even though this protocol led to improvements regarding Internet access via a mobile telephone, it was not broadly accepted by the market, when considered alone. Among its main limitations are the slow access to the required data and the need for a very specific and limited content offer.

The limitations of the above-mentioned standards led to the development of the mobile network's 2+ generation, based on GSM, with new or improved technologies

³⁶ Interference-free access system which main feature is the simultaneous access of several users to a single radio band by slicing it by channels in time (*time slots*). Unlike FDMA, this system multiplies the capacity of the frequencies by breaking their use in time.

³⁷ http://www.gsmworld.com/about/membership/member_stats.shtml.

³⁸ According to data from the GSM Association/Wireless Intelligence, there were 1,561.7 million connections to GSM networks in the third quarter of 2005 (<http://www.gsmworld.com/news/statistics/index.shtml>).

³⁹ It's a wireless application protocol using a specific language and a specific technology and giving users of mobile telephones and other wireless digital devices the chance to access Internet contents, exchange e-mail messages or perform other data transmission operations. It is mainly used in mobile communications networks. It makes it possible to browse pages on a *micro-browser* if they are written in a special language known as WML (*Wireless Mark-up Language*), which is more suited to relay data to wireless devices than HTML (Hypertext Mark-up Language, the most common computer language available on the Internet).

to support data services, such as GPRS (General Packet Radio Service)⁴⁰ and EDGE (Enhanced Data for GSM Environment)⁴¹, which make it possible to provide mobile data services of a higher quality, regarding capacities, processing speeds (they make it possible to substantially increase the 9,6 kbps throughput of GSM networks to speeds that can be as high as 115 kbps with error protection and 384 kbps) and some multimedia services.

GPRS networks' "always on" mode route data at very much higher throughputs than the traditional GSM, making it possible to access and to browse the Internet using terminals with coloured screens, visual-enhanced communications, multimedia messages and localization-based services.

Also because data communications are established with no need for a voice channel, it will make it possible to define tariffs oriented towards the data traffic volume and not the communication length.

The third generation (3G), also digital, was designed to implement the fixed-mobile and the multimedia-telecommunications convergence. It brings mobile networks closer to fixed networks, in terms of capacity and giving mobile user the chance to access up to 2Mbps multimedia services, for voice and data services.

UMTS (Universal Mobile Telecommunications System) stands out among the third generation mobile telecommunications systems. It operates in the 2 GHz frequency band and is known as the European standard of the global international mobile communications systems family (IMT2000).

UMTS uses WCDMA⁴² (Wideband Code Division Multiple Access) for transmission, which is based on multiple accesses by code division. Although different from the technologies used on GSM/GPRS networks, this technology, which requires the roll-out of complex networks and systems, was designed to be fully inter-operational with GSM.

⁴⁰ Evolution of the GSM system, based on packet switching and with throughputs up to 115 kbps.

⁴¹ Evolution of the GSM system, with throughputs up to 384 kbps.

⁴² Broadband access system which main feature of the access discipline to the various users is the sharing of the same frequency band, each user being given a different code.

UMTS makes it possible to provide advanced moving multimedia services, regardless of the location of the user, which makes ways for the development of new services and applications: Internet-based services, e-commerce, location-based services, photo uploads directly from cameras (using the *Bluetooth*⁴³ protocol), life video feeds, remote monitoring of people and vehicles and game and music downloads.

Current mobile telephones have countless features, beyond the simple ability to make and receive calls: they give access to various services increasing the flexibility of mobile communications, call waiting and call-holding, call re-routing, caller ID and data services standing out. Microelectronics used in connection with the development of software for those applications also makes possible to include in a mobile telephone a digital camera, an FM receiver, an MP3 music player, among other devices.

Beyond those services, mention should also be made to the SMS - Short Message Service⁴⁴, a service facility making it possible, to send and receive small alphanumeric character text messages, among mobile telephones. Each message is limited to a 160 character ceiling, when the Roman alphabet is used, and 70 characters, when other alphabets are used, such as the Chinese and the Arab ones.

More recently, since 2001 and 2002, still within the scope of the service facilities, mobile operators made available the EMS (Enhanced Messaging Service) and the MMS (Multimedia Messaging Service), respectively. The EMS is an enhanced SMS, very similar to it regarding use, and makes it possible to send and receive graphical or sound items, combining melodies, images, sounds, animations, altered text and regular text in an integrated mode. MMS, as the name suggests, is used to send and receive messages with text, sounds, image and video. It thus became possible to send moving images and videos.

Regulatory action also added some important functions to the MTS: direct access by

⁴³ Short range radio technology in the 2.4 GHz band, providing connectivity among devices within the user's premises, with an approximate range of 10 meters and a maximum 1 Mbps throughput. It may evolve to between 6 and 11 Mbps and a 100 meter range.

⁴⁴ This service was created still on Phase 1 of the GSM standard.

call-by-call selection for international calls with origin in mobile telephones (available since 31 March 2000) and operator portability (since 1 January 2002).

During 2004, and further to the delays that occurred due to difficulties in stabilizing this technology, a set of new 3G mobile services based on the IMT-2000/UMTS (WCDMA) technology were launched.

Commercial services based on 3G – namely Internet access, video call, multimedia services, etc. – were introduced in January 2004, on an experimental basis, and were marketed by TMN, Vodafone and Optimus on 21 April 2004, 4 May 2004 and 4 June 2004, respectively. However, these services aren't yet available all over the country.

II.3.2.2 MTS providers

The MTS was first marketed in Portugal in 1989, by the CTT-TLP consortium. Only later in, on 22 March 1991, was the incorporation of the company TMN – Telecomunicações Móveis Nacionais, S.A. The services that were provided used the analogue C-450 technology.

An open competition for the granting of a license for the provision of the MTS using GSM technology took place in March 1991. This license was granted to Telecel – Comunicações Pessoais, S.A. on 18 October 1991. The service was commercially available as from 18 October 1992.

TMN's operation license was issued on 16 March 1992, in a process exempt of open competition, as per exceptional rule of article 19 of Decree-Law no. 346/90 of 3 November, altered by Decree-Law no. 147/91 of 12 April. Also TMN began operating its service in October 1992.

On 15 July 1997, Notice no. 3542-A/97 (II Series) was published. It opened a new competition for the granting of a license for the provision of the land mobile service in accordance with the GSM and DCS rules and using the 900 MHz and 1800 MHz frequency bands, respectively. Further to this tender, a license was granted to Optimus – Telecomunicações, S.A. Optimus began its commercial operation in August 1998.

UMTS licensing

In order to comply with the Decision no. 128/1999/EC of the European Parliament and of the Council, of 14 December 1998, on the coordinated introduction of a third generation mobile and wireless communication system (UMTS) in the Community, ICP's Board of Directors approved on 23 December 1999 the generic procedure for the licensing of the UMTS/IMT2000 services.

On 1 August 2000 a tender for the granting of four nation-wide licenses for the International Mobile Communications Systems (IMT 2000/UMTS) was opened by order of the Minister for Social Equipment of 1 August 2000, published on the Diário da República no. 17, II Series, on that date.

The competition was governed by the Competition Regulations approved by Administrative Rule no. 532-A /2000 of 31 July and the clauses of the Specifications approved by order of the Minister for Social Equipment of 1 August 2000.

On 19 December 2000, the Minister for Social Equipment announced the results of the competition for the granting of four nation-wide licences for the International Mobile Communications Systems (IMT 2000/UMTS).

The four licenses that were disputed were granted to the following entities:

- Telecel – Comunicações Pessoais, SA (currently Vodafone)
- TMN – Telecomunicações Móveis Nacionais, SA
- OnyWay – Infocomunicações, SA
- Optimus – Telecomunicações, SA

3G commercial services were launched in Portugal on 21 April 2004, 4 May 2004 and 4 June 2004, respectively by TMN, Vodafone and Optimus.

The fourth operator that was licensed for this system, OniWay, did not begin its mobile operation and its license was formally revoked in January 2003, by Order of the Minister for the Economy (Order no. 1758/2003 of 29 January).

Current state

There were three legally entitled entities in Portugal for the provision of the mobile telephone service, in 2005: TMN, Vodafone and Optimus.

Table 30 – MTS providers

Optimus Telecomunicações, S.A.
TMN — Telecomunicações Móveis Nacionais, S.A..
Vodafone Portugal – Comunicações Pessoais, S.A.

Source: ICP-ANACOM

II.3.2.3 New commercial offers launched in 2005

Below are the new offers launched during the year 2005.

II.3.2.3.1 Uzo, Rede 4 and Vodafone Directo offers

During the year 2005, TMN, Optimus and Vodafone began marketing new brands/offers in connection with the so-called low cost or discount tariffs, namely:

- TMN's UZO – launched in mid-June 2005, its main features are the lack of mandatory consumptions, with a single 16-cent tariff for calls for all networks and 8-cent SMSs for the prefix 960.

Although with no mandatory payments, UZO launched a promotional extraordinary package for those who make payments of 15 euros or above, giving them reduced tariffs: 12 cents for voice calls to any network and 6 cents for written messages.

TMN has marketed these offers on the Internet and other channels – such as post offices and petrol stations – since their very beginning.

- Optimus's Rede 4 – also launched in June 2005, right after UZO, with lower tariffs (11.99 cents for voice calls to all mobile or fixed networks and 5.99 cents for each SMS), but with a minimum 15-euro monthly payment using the prefix 931.

- Vodafone Directo – this was Vodafone's response to the UZO (TMN) and Rede 4 (Optimus) offers. It was launched in the end of June 2005, with two tariff plans, one with no mandatory payments, with 15.99 cents for voice calls to all networks and 7.99 cents per SMS, and the other one with a minimum monthly 15-euro payment, with a 11.99 cents for voice calls to all mobile or fixed networks and 5.99 cents per SMS to any network.

It began with sales only over the Internet but later on Vodafone began selling this offer over the telephone.

All three brands/offers have their own tariffs for services such as roaming, voice mail, MMS, WAP access and other services.

These products have lower and simpler tariffs (with one or two tariff plans) than those that are usually marketed by mobile operators. These offers are marketed in their own websites⁴⁵ and in some specific selling points, where several operations are possible: purchase of the service, payments, statements, etc.. For customer support, these brands/offers use call centres that are autonomous from TMN, Optimus and Vodafone.

SMS packages

Besides these new low cost tariffs, operators have also launched promotions based on written messages packages.

For the Vita 91 and Yorn Power tariff plans, Vodafone offered the chance of subscribing to a free package of 1,500 SMSs per week. This campaign, even though not generating any revenues, acts as stimulus to the use of the written messaging service. Optimus and TMN promote packages of messages that subscribers to any tariff plan can subscribe.

⁴⁵ <http://www.uzo.pt/>, <http://www.rede4.pt/minuto+barato> e <http://www.vodafoneirecto.com/>

II.3.2.3.2 GPRS-based offers

Mobile operator's offers in connection with GSM/GPRS are generally similar to UMTS (3G) offers. They are marketed using the same support, as an option or in accordance with the coverage of the mobile network. Only throughput, which is higher in the case with UMTS, sets them apart.

The most important distinction, in connection with the highest throughput, is the offer of the video call service when UMTS is used, among other services that include videos.

Below is data on the GPRS base-tariffs for WAP access and Internet access, as released by the operators on their websites.

Table 31 – GPRS offers

Optimus	GPRS services	Price per Kb VAT included
	WAP access	€0.01
	Portal Zone WAP access	€0.002
	Internet access	€0.0025

Source: www.optimus.pt

Note: 10 Kb invoicing.

TMN	GPRS services	Price per Kb VAT included
	GPRS/3G WAP access	€0.0101
	GPRS/3G Internet access	€0.005

Source: www.tmn.pt

Note: The initial charging unit is 10 Kb and the following ones 1 Kb.

Vodafone	GPRS services	Price per Kb VAT included
	WAP access	
	Week days	€0.0102
	Weekends and holidays	€0.0024
	Internet access	€0.0024

Source: www.vodafone.pt

Note: For the WAP access the initial charging is 10 Kb and the remaining ones 1 Kb. For the Internet access the charging interval is 100 KBytes.

II.3.2.3.3 UMTS – offers since the service was first launched on the market

Mobile operators TMN, Optimus and Vodafone have offered similar 3G products and services to their customers, namely:

- Video call – telephone conversation with simultaneous voice and image (both users will need 3G coverage);
- Multimedia messages (photo and MMS video) – this service's users can send and receive messages with pictures, videos, small films, sound, texts, etc.;
- Access to mobile portals – Vodafone Live 3G, Optimus Zone 3G, i9 3G, respectively Vodafone's, Optimus's and TMN's, with information and entertainment services (music, videos, games, ring tones and images, etc.);
- Broadband access to the Internet, for access to the Internet, Intranet, e-mail, sending and receiving written messages, corporate applications, etc.. Internet access is made using the mobile telephone connection to a PC or by inserting a 3G plate in the PC.

Recently (3rd quarter of 2005), the three operators launched new offers: Kanguru by Optimus, GIGA by TMN and Mobile Connect Card by Vodafone (in the cases with TMN and Vodafone it was a re-launch of existing offers, with more appealing terms, as responses to Optimus's offer). These offers are a 3G plate for connection to a portable PC (these TMN and Vodafone plates can also be GPRS), a card and a CD with the connecting software and are sold with specific tariffs. These offers give mobile access to the broadband Internet, e-mail and the remaining computer applications.

Below are descriptions of the UMTS market offers per operator:

Table 32 – Optimus's 3G market offers – 3rd quarter of 2005

Name	Services	Residential tariffs	Corporate tariffs
Optimus Zone 3G	Video call	On-net - €0.39/min. Off-net - €0.79/min. International - €0.99/min.	On-net - €0.00/min. Off-net - €0.3277/min.
	MMS	€0.39 per MMS, to all networks	
	Zone 3G Portal Browsing	Free until 31.12.2005	

	E-mail module (Access to e-mail)	---	€12.50/month, Includes 30 MB €0.0021/Kb – Base-tariff, for traffic out of the package or for customers not using packages or modules
	Internet (using mobile telephone or 3G plate)	Base-tariff – €0.0025/Kb	Base-tariff – €0.0021/Kb E-mail module – €12.50/ month, includes 30 MB
		3 traffic packages available only for post-payment customers: E-mail 10 MB – €15 – Includes 10 MB – Extra tariff per package €1.70 Internet 40 MB – €30 – Includes 40 MB – Extra tariff per package €1.10 Internet 250 MB – €75 – Includes 250 MB – Extra tariff per package €0.50	
Kanguru	Internet (for portable PC users)	End-price: €149.90 Tariff bonus: €50 evenly credited in the first 12 invoices. Monthly fee: €29.90 includes 1GB de Traffic (nat. and internat.) Additional traffic – €0.05/MB Happy-hour from 1 to 7 h E-mail box – 1GB Roaming – €12/MB Mandatory sojourn time – 12 months	End-price: €0 Monthly fee: €36.30 includes 10 GB of traffic (nat. and internat.) Additional traffic – €2.54/MB Happy-hour from 1 to 7 h E-mail box – 1GB Sojourn time – 24 months

Source: www.optimus.pt

Note: Does not include promotions – Prices include VAT.

Table 33 – TMN's 3G market offers – 3rd quarter of 2005

Name	Services	Tariffs
tmn i9	Video call	On-net - €0.399/min. Vodafone and Optimus - €0.799/min. Other national and international networks – €1.004
	Video mail service	Free until 31.12.05
	Vide sharing service	Free until 31.12.05
	12400 video	€0.20/min. €0.033 each 10 sec. After the 1st min.
	i9 3G Portal Browsing	Free access to the portal Browsing is measured by volume of downloaded data. The price per KB is €0.0101. TMN offers a set of services and contents at different tariffs.

	Internet (using mobile telephone or 3G plate)	<p>Base access – €0.005 per KB</p> <p>Standard access – €0.102/min.</p> <p>Mega access (for post-payment customers only), divided into four tariffs:</p> <p>Mega 2 - €3.63/month, includes 2 MB, €1.815 per additional MB</p> <p>Mega 5 - €8.47/ month, includes 5 MB, €1.694 per additional MB</p> <p>Mega 10 - €12.10/ month, includes 10 MB, €1.694 per additional MB</p> <p>Mega 20 – €20.57/ month, includes 20 MB, €1.029 per additional MB</p> <p>Mega 50 – €24.20/ month, includes 50 MB, €0.484 per additional MB</p> <p>Mega 100 – €36.30/ month, includes 100 MB, €0.363 per additional MB</p> <p>Mega 300 – €79.86/ month, includes 300 MB, €0.266 per additional MB</p> <p>Mega 1000 – €102.85/ month, includes 1000 MB, €0.103 per additional MB</p>
Acesso GIGA	Internet for portable PCs (3G/GPRS/WI-FI)	<p>Pack and activation – €149.90</p> <p>Monthly fee: €29.90 includes 10 GB of traffic</p> <p>Additional traffic – €0.05/MB</p> <p>Happy-hour from 1 to 7 h</p> <p>E-mail box – 1 GB</p> <p>Sojourn time – 12 months</p> <p>(for monthly fee customers)</p>

Source: www.tmn.pt

Note: Does not include promotions – Prices include VAT.

Table 34 – Vodafone's 3G market offers – 3rd quarter of 2005

Name	Services	Tariffs
Vodafone Live 3G	Video call	On-net - €0.39/min. Other mobile networks - €0.79/min. International – €0.99/min.
	MMS	€0.397 for each MMS sent
	Vodafone Live Portal	Access to the portal – €0.25. Some of the contents of this portal are premium, namely music, news, soccer, ring tones and games. To the access to a Mobile Internet site out of this portal the WAP GPRS tariff is applied.
	Vodafone Mail	Free service with a 10 MB mail box
	Vodafone Mail Plus	Free service with a 50 MB box
	Voice Mail Standard	Postal box service accessed with a mobile telephone, free when access is made user the box owner's MSISDN. Reply call functions (the general tariffs apply). Box personalization and voice messaging (€0.109/message).
	Professional Voice Mail	To the above service the possibility to receive, hear and forward faxes is added (the general tariffs apply).

	Internet (using mobile telephone or 3G plate)	<p>Base-pack – €2.42 month per additional user - 0.242 cents per additional national Kb - €0.10 per SMS</p> <p>Pack 3 MB – €6.05/month - includes 3 MB - 0.1815 cents per additional national MB</p> <p>Pack 10 MB – €12.10/ month - includes 10 MB, 0.121 cents per additional national MB</p> <p>Pack 20 MB – €20.57/ month - includes 10 MB, 0.103 cents per additional national MB</p> <p>Pack 50 MB – €24.20/ month - includes 50 MB, 0.048 cents per additional national MB</p> <p>Pack 100 MB – €36.30/ month - includes 100 MB, 0.036 cents per additional national MB</p> <p>Pack 300 MB – €79.86/ month - includes 300 MB, 0.027 cents per additional national MB</p> <p>Pack 1 GB – €102.85/ month - includes 1024 MB, 0.01 cent per additional national MB</p>
Vodafone Mobile Connect Card	Internet for portable PCs (3G/GPRS version)	<p>Pack and activation – €149.90</p> <p>Monthly fee: €29.90 includes 10 GB traffic</p> <p>Additional traffic – according to hired pack (cf. above Packs).</p> <p>Happy-hour from 1 to 7 h</p> <p>Sojourn time – 18 months (for monthly fee customers)</p>

Source: www.vodafone.pt

Note: Does not include promotions – Prices include VAT.

II.3.3 MTS user and usage profiles

The sections below contain the main features of the STM user and of the STM usage.

II.3.3.1 MTS user's main features

According to the data from the Electronic Communications Consumer Survey of February 2004⁴⁶, June 2005⁴⁷ and February 2006, variables age and education level are the main differences between MTS users and non-users.

There is indeed a negative correlation between age and MTS penetration. Among those over 65 years old, only 29 per cent had a mobile telephone in 2005 and 51 per cent in 2006. There was thus a considerable increase of penetration in this class vis-à-vis 2004.

Table 35 – MTS penetration by age class

Age class	Feb. 2004	Jun. 2005	Feb. 2006
15-24	90.1%	96.2%	98.4%
25-34	91.8%	92.4%	97.1%
35-44	79.6%	86.1%	92.9%
45-54	69.6%	75.0%	91.3%
55-64	42.3%	69.6%	79.8%
65-over	19.0%	29.0%	51.0%
Total	66.0%	74.1%	84.5%

Source: Electronic Communications Consumer Survey – February 2004, June 2005⁴⁷ and February 2006

On the other hand, it is among those with a lower education level that MTS penetration is lower.

⁴⁶ The universe that was defined for this survey was individuals of both genders, aged 15 or older and residing in mainland Portugal and in the autonomous regions of Madeira and Azores. The sample was sized for a maximum error of 3 per cent regarding the main results (with a degree of significance of 95 per cent). The sample was stratified by regions (NUTS II – grade 2 of the nomenclature of statistical territorial units), habitat/household size (5 groups), gender, age (3 groups), education (3 groups) and occupation (2 groups), based on the last General Population Census: 2001 Census. 1,051 interviews took place. Data gathering was made by means of personal, direct interviews. Field work took place in January and February 2004 and was made by Intercampus.

⁴⁷ The universe that was defined for this survey was individuals of both genders, aged 15 or older and residing in mainland Portugal and in the autonomous regions of Madeira and Azores. The sample was sized for a maximum error of 2.5 per cent regarding the main results (with a degree of significance of 95 per cent). The sample was stratified by gender, age and region, based on the last General Population Census: 2001 Census. 2,184 interviews took place. Data gathering was made by means of personal, direct interviews. Field work took place between 9 June and 12 July 2005 and was made by Metris GFK.

Table 36 – MTS penetration by education class

Education	Feb. 2004	Jun. 2005	Feb. 2006
Bachelor (Hnrs)/Post-grad/Master/PhD	96.8%	95.1%	99.0%
Bachelor/Polytechnic	89.5%	100.0%	91.7%
12th grade/11th grade	96.4%	96.9%	96.7%
9th grade	86.5%	91.5%	91.0%
6th grade	81.4%	82.2%	89.9%
Full primary education	50.0%	55.5%	76.9%
Incomplete primary education/Illiterate	10.2%	20.5%	34.4%

Source: Electronic Communications Consumer Survey – February 2004, June 2005⁴⁷ and February 2006

People residing in the Azores and inland are the ones with less mobile telephones, but there was an increase in penetration in all regions, in 2005.

Table 37 – MTS penetration by region

Region	Feb. 2004	Jun. 2005	Feb. 2006
North Coast	65.8%	71.8%	82.6%
Porto	73.0%	78.8%	87.4%
Centre Coast	53.9%	67.9%	85.3%
Inland	60.4%	65.8%	81.5%
Lisbon	67.8%	79.0%	90.0%
Alentejo	69.0%	75.9%	81.2%
Algarve	78.0%	78.6%	81.2%
Autonomous Region of Madeira	n.a.	80.0%	85.4%
Autonomous Region of the Azores	n.a.	62.5%	78.9%

Source: Electronic Communications Consumer Survey – February 2004, June 2005 and February 2006

II.3.3.2 MTS usage's main features

Below are some of the items characterizing MTS usage, namely the used tariff plans and the type and characteristics of calls.

II.3.3.2.1 Tariff plans

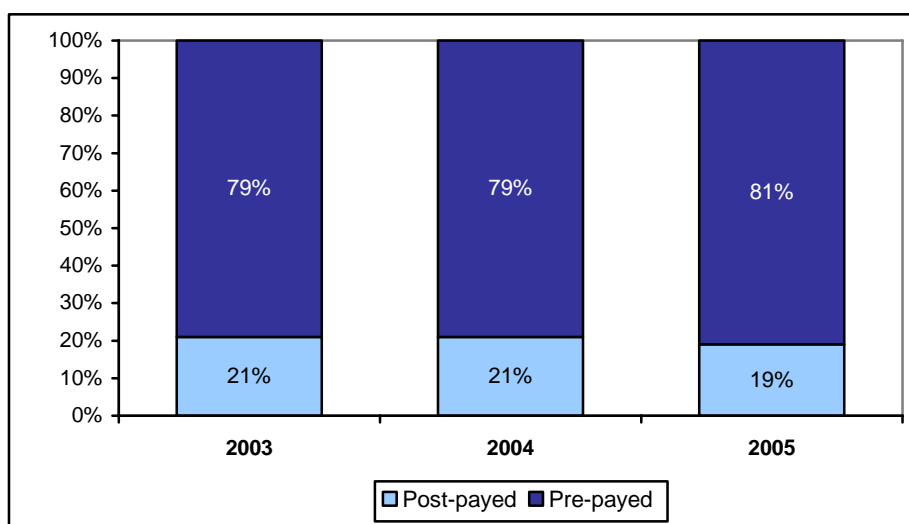
Regarding the tariff plans used by the MTS subscribers, about 80 per cent of subscribers have pre-paid plans. This rate has been stable over the last few years.

Table 38 – Distribution of subscribers by type of tariff plan

Subscribers by type of subscription	2003	2004	2005
Post-paid	21%	21%	19%
Pre-paid	79%	79%	81%

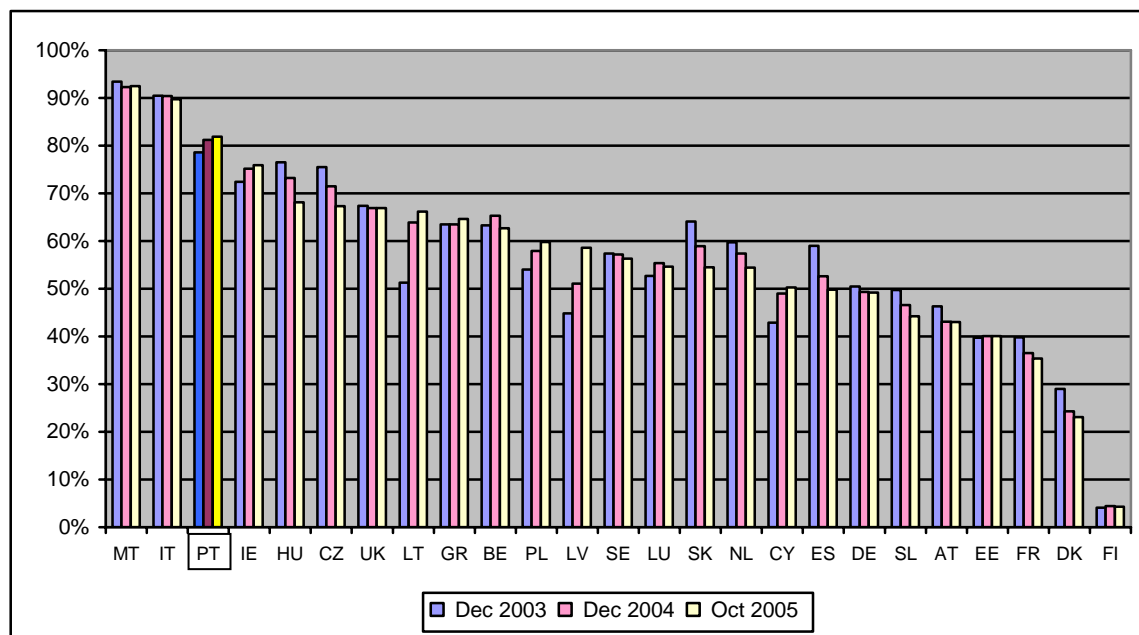
Source: ICP-ANACOM

Portugal was pioneer in introducing the pre-paid system in the mobile telephone service. In 1995 TMN put the MIMO product on the market. These products have a bigger cost control and do not require the payment of a monthly fee, which are very adequate features to subscribers in the lowest income levels.

Graph 27 – Distribution of subscribers by type of tariff plan

Source: ICP-ANACOM

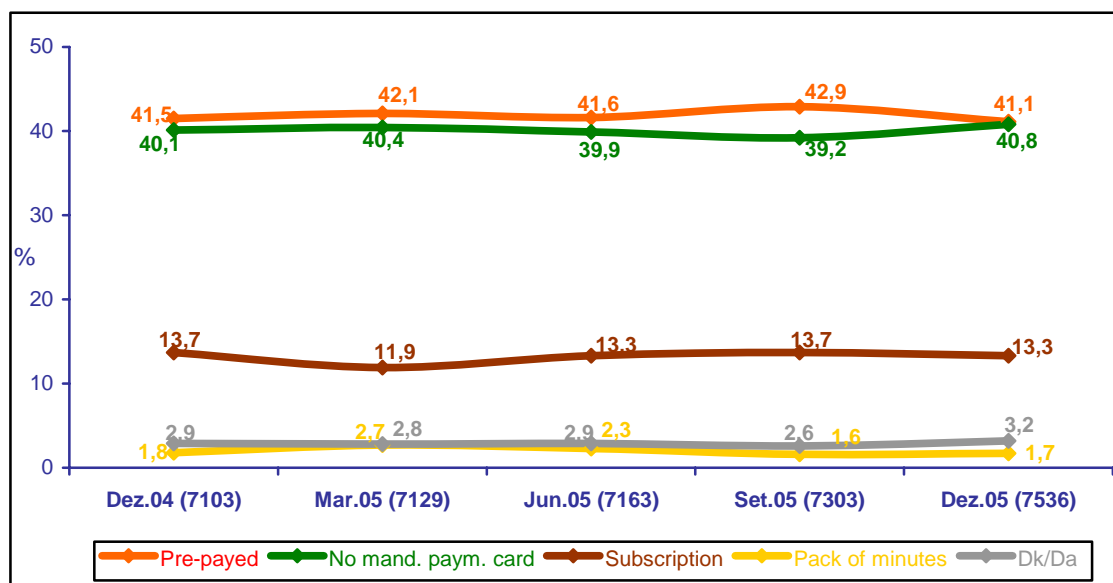
The following graph shows that Portugal is among the countries with a larger rate of pre-paid plans, right after Malta and Italy. Finland and Denmark have the lowest rates.

Graph 28 – Rate of pre-paid cards in the total number of subscribers – Portugal vs. EU25

Source: European Mobile Communications Report (Issues 180, 191 e 197).

The importance that plans with no mandatory payments have should be stressed. This evolution can be also explained by the higher cost control, since they do not require periodic payments, which justifies the popularity of pre-paid plans. On the other hand, as penetration increases, operators are forced to find customers in strata of the population with lower income levels and age below average. This type of product is particularly designed to suit the needs of these strata.

Graph 29 – Distribution of subscribers by type of tariff plan

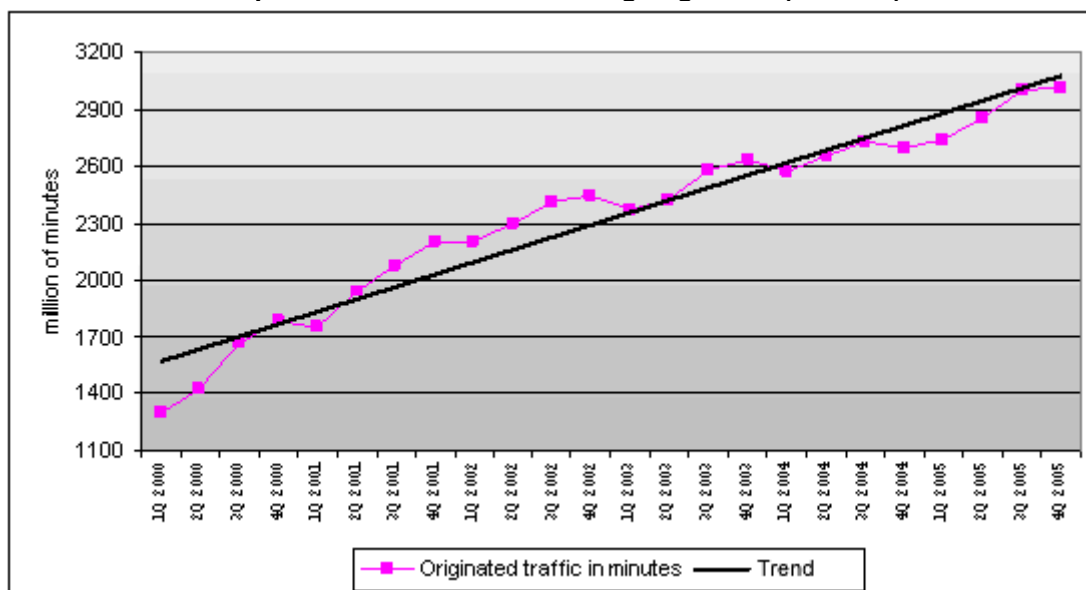
Source: Marktest⁴⁸

II.3.3.2.2 Voice traffic: Usage level

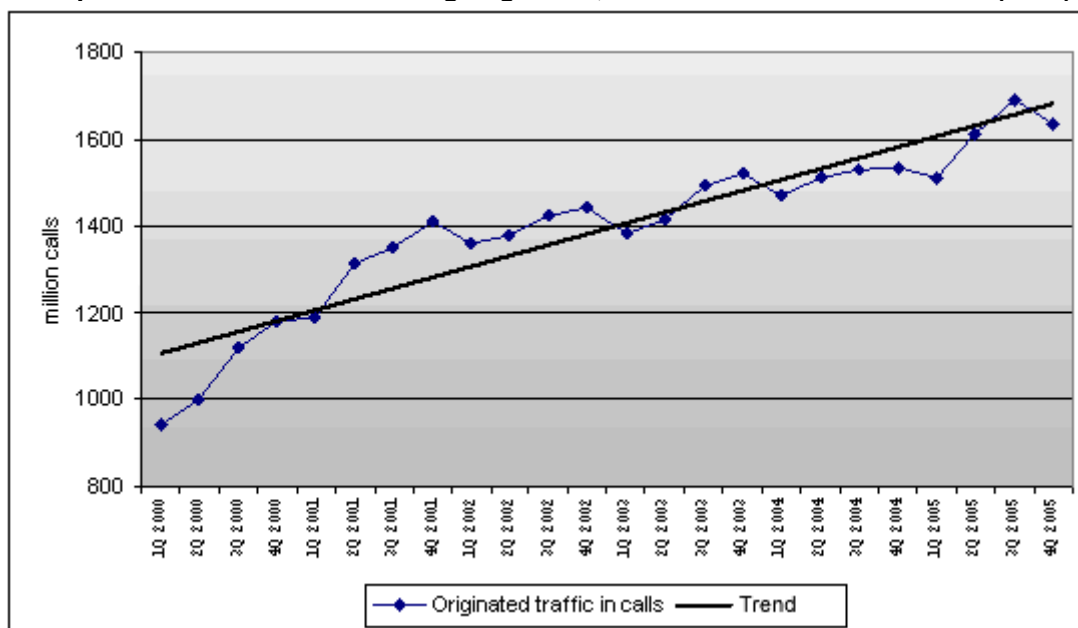
As shown on the graphs below, MTS traffic tends to grow and changes seasonally.

This traffic's growing trend can be explained by the increasing number of subscribers, the generalization of the service and also the decline in the use of the FTS. There are seasonal increases in the third and fourth quarters of each year, in connection with the summer and Christmas holidays.

⁴⁸ Marktest's Oct/Nov/Dec 2005 Barometer: The universe was 9,278 thousand individuals of both genders, aged 10 and older, residing in mainland Portugal, the Azores and Madeira. A sample of 1,000 interviews is gathered on a monthly basis. The error for this sized sample is ± 3 per cent. Selection of homes is random from telephone directories of fixed network operators in Portugal. The selection of people to interview in each home is made using the quota method, considering variables gender, age and district of residence of the interviewed person.

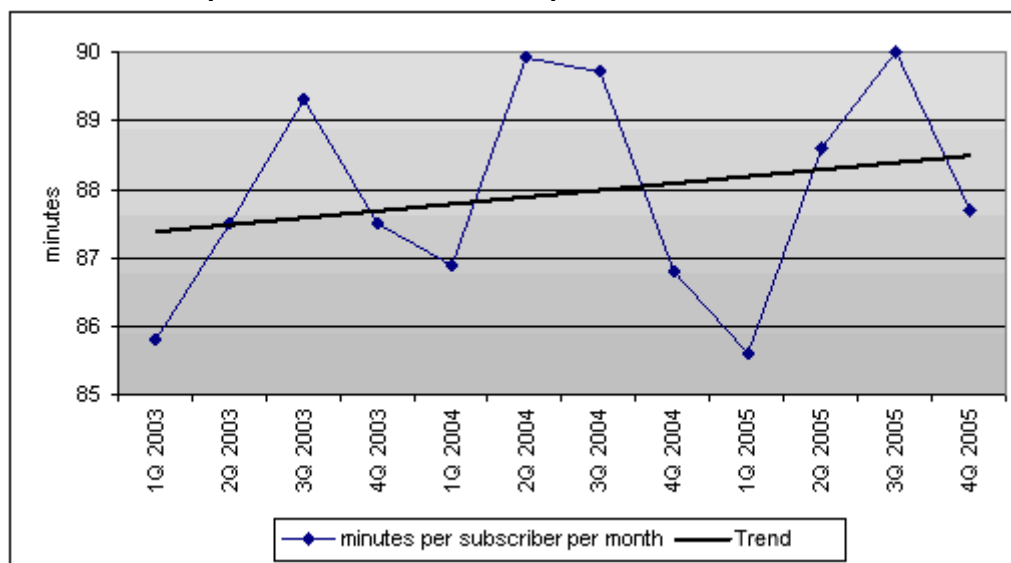
Graph 30 – Evolution of MTS outgoing traffic (minutes)

Source: ICP-ANACOM

Graph 31 – Evolution of MTS outgoing traffic, trend and seasonal variations (calls)

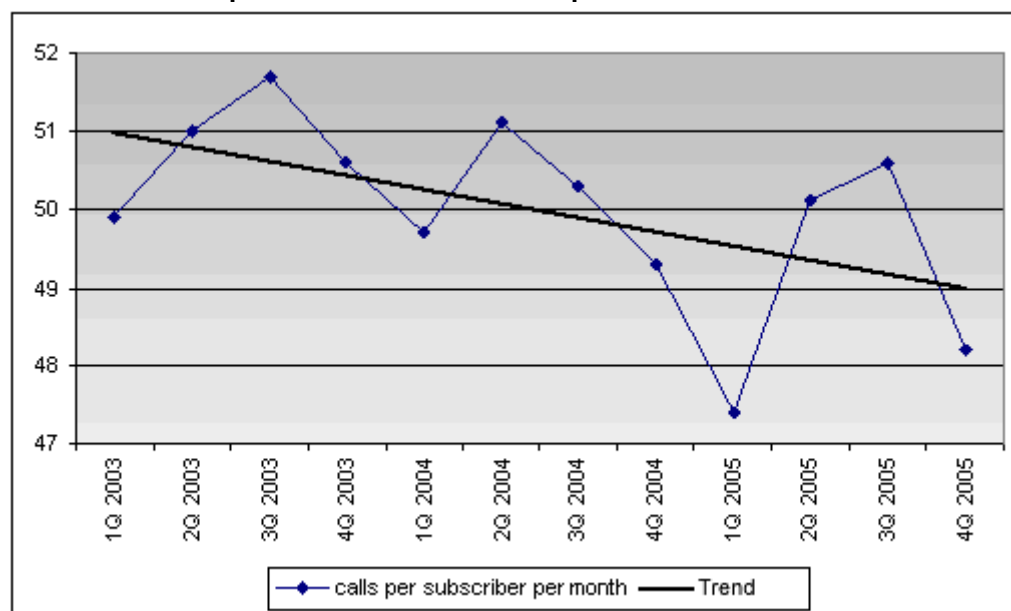
Source: ICP-ANACOM

Monthly traffic per inhabitant reaches average figures close to 89 minutes and 49 calls, with seasonal variations: the amount of minutes reaches its peak during the third quarter, for the above-mentioned reasons. In the second quarter of 2004 there was also a peak in traffic, which was a result of the fact that “Euro 2004” took place in June that year.

Graph 32 – Evolution of traffic per subscriber in minutes

Source: ICP-ANACOM

There is however a slight decreasing trend in the number of calls per subscriber. The average amount of calls per subscriber was close to 48 in the forth quarter of 2005, which is below that of the same month of the previous year.

Graph 33 – Evolution of traffic per subscriber in calls

Source: ICP-ANACOM

This can be explained by the fact that new subscribers have an income level below

average or by macroeconomic factors of a cyclical nature affecting the consumption of this service.

II.3.3.2.3 Voice traffic: types of calls

Regarding the type of calls, 2/3 of them have the network of origin as their destination. Networks of other mobile operators are the destination of about 21 per cent of the originated traffic, and the FTS comes next. The relative weight of these types does not change significantly for the incoming traffic.

Table 39 — Distribution of voice traffic calls by type of call

	2000	2001	2002	2003	2004	2005
Outgoing traffic	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Own network – own network	63.0%	67.1%	66.2%	66.4%	66.4%	67.4%
Own network – national FTS	14.0%	11.4%	10.5%	9.3%	8.6%	7.9%
Own network – international networks	1.8%	2.1%	2.9%	3.0%	3.2%	3.2%
Own network – other national MTS	21.2%	19.4%	20.4%	21.3%	21.8%	21.5%
Incoming traffic	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Own network – own network	63.4%	64.5%	64.5%	65.0%	65.1%	66.3%
Other national MTS – own network	15.7%	18.4%	19.8%	20.9%	21.4%	21.2%
National FTS – own network	18.8%	14.9%	13.3%	11.6%	10.7%	9.6%
International networks – own network	2.1%	2.3%	2.4%	2.4%	2.8%	2.9%

Source: ICP-ANACOM

Table 40 — Distribution of voice traffic minutes by type of call

	2000	2001	2002	2003	2004	2005
Outgoing traffic	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Own network – own network	59.9%	65.8%	66.4%	66.6%	67.3%	68.4%
Own network – national FTS	13.9%	10.7%	9.5%	8.6%	7.7%	7.1%
Own network – international networks	3.6%	4.3%	5.0%	4.8%	4.8%	4.6%
Own network – other national MTS	22.5%	19.2%	19.1%	20.0%	20.2%	19.9%
Incoming traffic	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Own network – own network	58.7%	61.5%	63.6%	64.6%	65.2%	66.4%
Other national MTS – own network	16.2%	17.9%	18.3%	19.3%	19.5%	19.4%
National FTS – own network	20.7%	16.3%	13.8%	12.0%	10.7%	9.6%
International networks – own network	4.3%	4.3%	4.3%	4.1%	4.7%	4.6%

Source: ICP-ANACOM

There is thus a gradual decrease in the rate of calls with destination and origin in the fixed network, which can be related with the decreasing number of FTS users.

II.3.3.2.4 Voice traffic: average length of calls

The average length of calls is not considerably above 100 seconds. The average length of calls is below that of the fixed network. The average length of international calls stands out – above 150 seconds for the outgoing traffic and 173 seconds for the incoming traffic.

Table 41 – Average length of calls

	2000	2001	2002	2003	2004	2005
Total outgoing traffic	89	91	100	103	106	108
Own network – own network	83	89	100	104	107	109
Own network – national FTS	102	86	90	96	96	97
Own network – international networks	172	180	170	166	156	154
Own network – other national MTS	93	90	94	97	98	100
Total incoming traffic	90	93	102	104	107	109
Own network – own network	83	89	100	104	107	109
Other national MTS – own network	92	91	94	97	98	100
National FTS – own network	99	102	106	107	107	110
International networks – own network	185	178	182	176	175	173

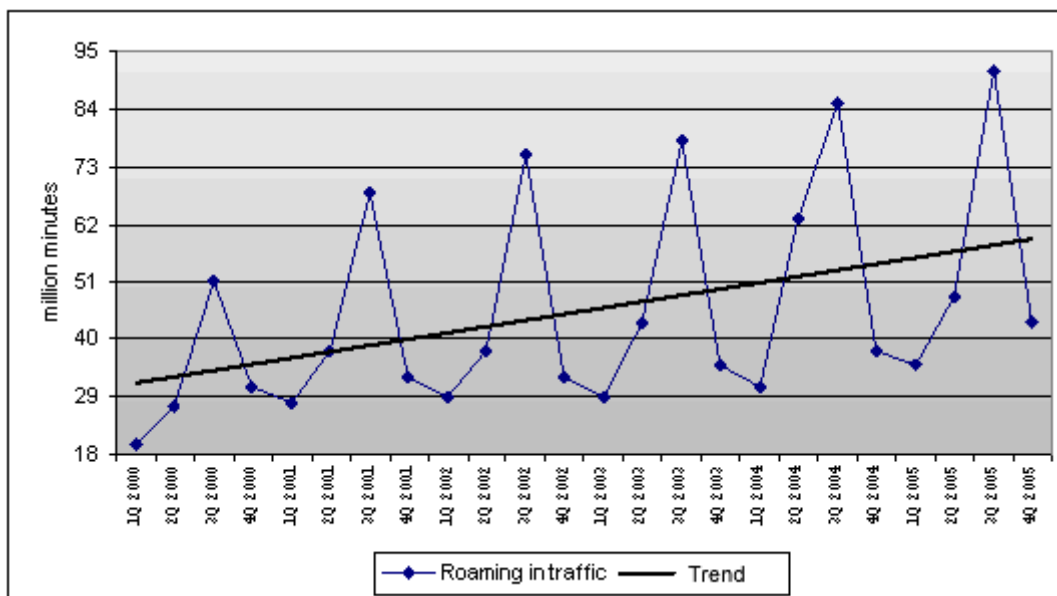
Source: ICP-ANACOM

Unit: Seconds

II.3.3.2.5 Roaming traffic: voice and SMS

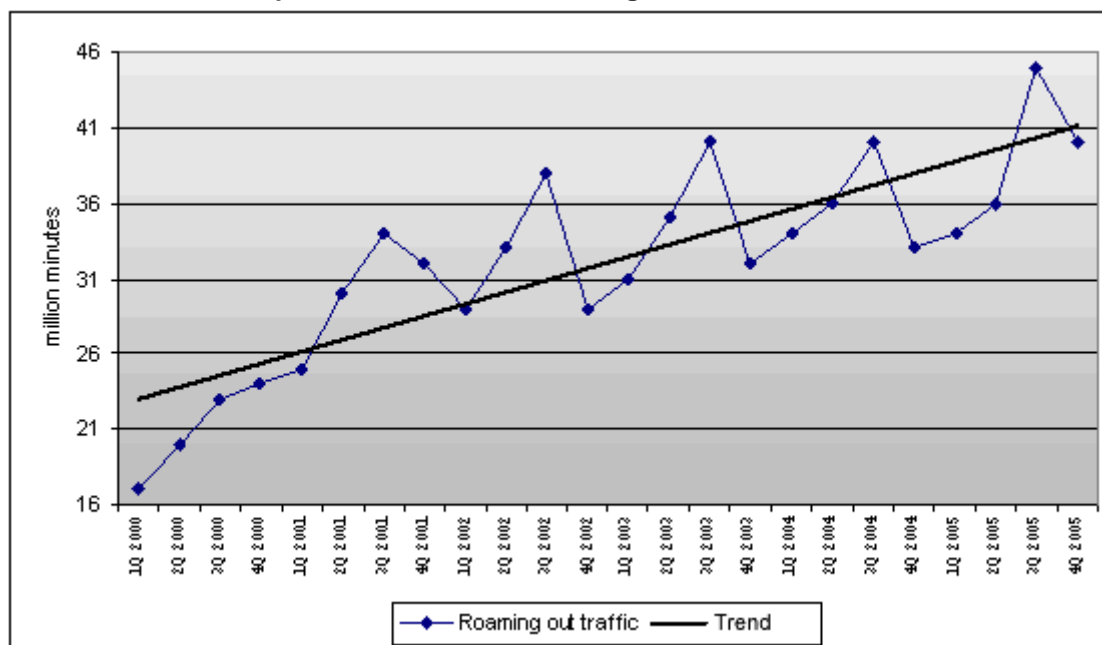
Roaming traffic is highly seasonal and mainly increases in the summer holidays.

The “Euro 2004” phenomenon also had an impact on the roaming in traffic, as shown on the following graph (2nd quarter of 2004).

Graph 34 – Evolution of roaming in traffic and trend

Source: ICP-ANACOM

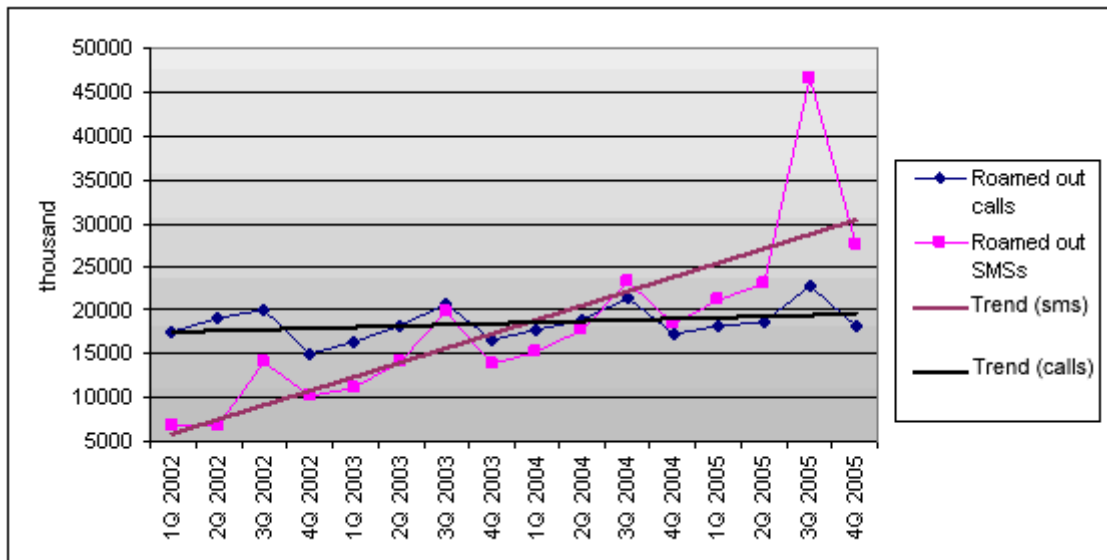
Roaming out traffic is also highly seasonal, for the above-mentioned reasons.

Graph 35 – Evolution of roaming out traffic and trend

Source: ICP-ANACOM

Specifically in the case with roaming out, there is a growing trend in the use of SMS, which can be explained by the price level of this type of calls and the termination figures in these cases.

Graph 36 – Evolution of roaming out by type of traffic



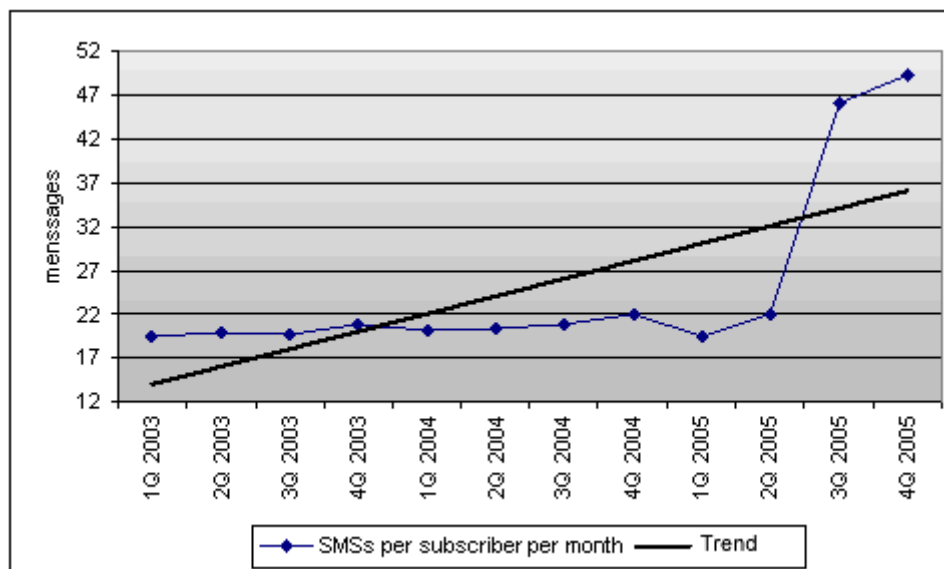
Source: ICP-ANACOM

On the other hand, the operators' promotional campaigns to intensify the use of SMS led to a considerable increase in the amount of received roamed messages. Received roamed messages is cost-free for the roamer, whereas receiving a voice call implies the payment of the parcel of the call that corresponds to the termination cost of the foreign operator in which the roamer is registered. This and the campaigns can justify the peak in the third quarter of 2005, during the holiday period.

On average, roamed calls are longer than those made in national networks.

II.3.3.2.6 SMS

Up to 2004, a subscriber sent a monthly average amount of 20 SMS, which has significantly changed in 2005, when this average rose to 35 SMSs per subscriber, although it reached 49 in the forth quarter of that same year.

Graph 37 – Evolution of the number of SMSs per subscriber per month, trend

Source: ICP-ANACOM

This evolution can be explained by the new tariffs and the operators' campaigns, for as, according to the results of the surveys that ICP-ANACOM promotes, the main reason for using SMSs is price. In 2005, the number of inquired people saying that the price of SMSs was the main reason for using them increased significantly – 11.7 per cent – and reached 68.8 per cent.

Table 42 – Advantages of SMS

	Feb. 2004	Jun. 2005	Feb. 2006
It's cheaper than calling	57.1%	68.8%	52.0%
It's more practical	19.7%	12.9%	17.8%
One can send the same SMS to many people simultaneously	5.8%	4.3%	4.6%
Other replies	--	0.8%	20.1%
Nr/Na	17.5%	12.5%	52.0%

Source: Electronic Communications Consumer Survey - February 2004 , June 2005 and February 2006.

II.3.3.2.7 Data services

MMS, GPRS and UMTS, in spite of being services and technologies with some degree of awareness, are used on a relatively small scale.

Table 43 – Awareness and use of services and technologies

	MMS	GPRS	UMTS
Is aware of	73.5%	53.3%	79.1%
Uses or has used	17.7%	12.7%	5.1%

Source: Electronic Communications Consumer Survey - June 2005

There are also only a small number of data service users, which includes access to portals using the WAP protocol and the GPRS technology.

Table 44 – Number of data service users

	Dec. 2004	Dec. 2005
With access to WAP services (GSM)	1,064	1,208
With GPRS technology access	1,403	1,976

Source: ICP-ANACOM

Unit: thousand users

Also noteworthy is the fact that the number of customers that has already subscribed to the mobile third generation services (3G/UMTS) is very small.

Table 45 – 3G/UMTS service customers

	Jun. 2005	Feb. 2006
Does not have	93.5%	83.7%
Does have	5.1%	16.0%
Nr/Na	1.4%	0.3%

Source: Electronic Communications Consumer Survey – June 2005 and February 2006

II.3.3.3 Barriers to subscribing the service

According to the results of the Electronic Communications Consumer Survey, among those that do not have a mobile telephone, the main reason for not having one is “not needing” it (36.4 per cent). On the other hand, about 21.6 per cent consider that “the fixed network is good enough”.

However, the second reason for not joining this service is of a tariff nature. About 23.3 per cent of those who do not have the service consider it “too expensive”.

Table 46 – Reasons for not owning a mobile telephone

	Jan. 2006
Does not need one	36.4%
It is too expensive	23.3%
The fixed network is good enough	21.6%
Other answers	9.4%
Mobile telephones are hard to use	7.2%
Nr/Na	2.2%
Total	100.0%

Source: Electronic Communications Consumer Survey - February 2006

II.3.4 MTS's evolution in 2005

Below is a set of elements on the MTS's performance in 2005: availability, penetration, service's usage, prices, quality of the service.

II.3.4.1 The service's geographic availability

MTS is available on the huge majority of the Portuguese territory and reaches almost 100 per cent of the population.

II.3.4.2 The service's Penetration

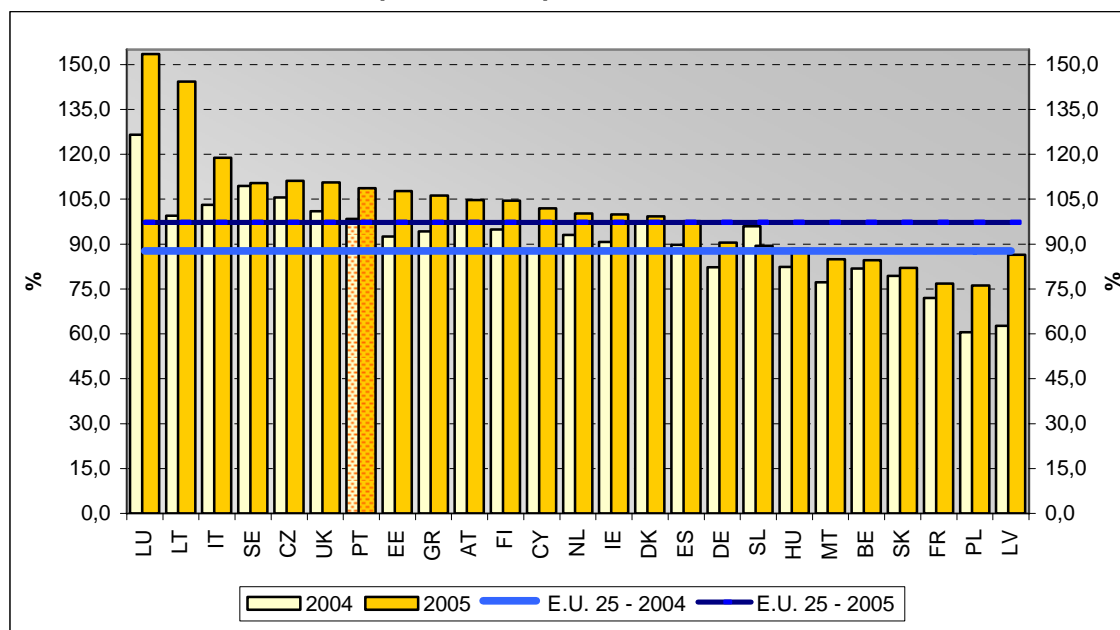
MTS penetration in Portugal has reached very high figures during this year, and went above 100 per cent. At the end of 2005, the service's penetration rate reached 108.7 per cent, still above the EU average of 97.2 per cent.

Table 47 – Penetration in Portugal

	2003	2004	2005
Service's penetration in Portugal	95.8%	98.4%	108.7%

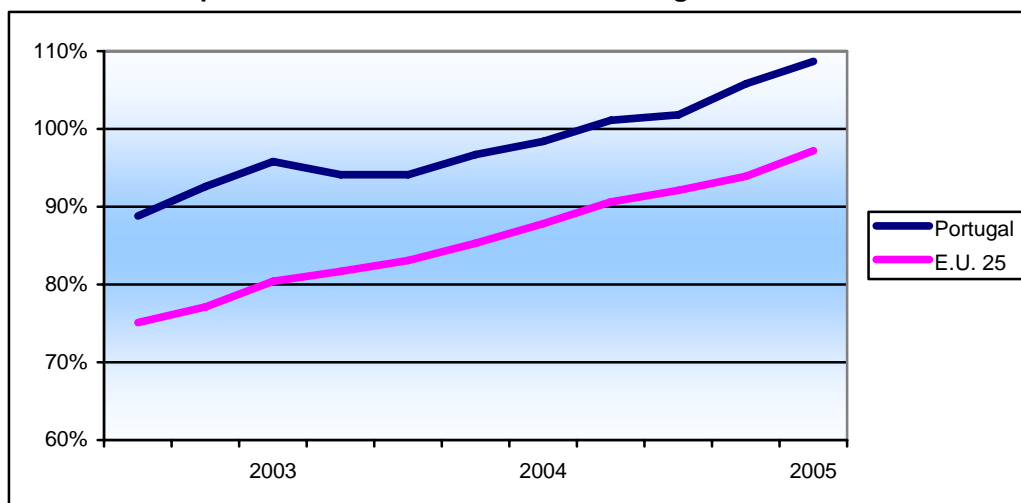
Source: ICP-ANACOM

Graph 38 – MTS penetration in the EU



Sources: population: INE and Eurostat; subscribers: Mobile Communications, from Informa telecoms & media.

MTS penetration in Portugal has consistently kept above the EU average, as shown on the next graph.

Graph 39 – Evolution of the MTS in Portugal and in the EU

Sources: ICP-ANACOM, INE, Eurostat and Mobile Communications, from Informa telecoms & media.

The growth of the MTS penetration and its evolution vis-à-vis the European average have been influenced, namely, by the swift introduction of GSM services in Portugal, the small penetration of the FTS, the investment in marketing and the innovations that the operators brought to the market (namely, tariff innovations).

It is noteworthy that, according to the Electronic Communications Consumer Survey of February 2006, about 84.3 per cent of those residing in Portugal were MTS customers (provisional data).

The difference between the above mentioned penetration, on one hand, and the answers to the above mentioned survey, on the other, are due to several factors, e.g.:

- There are users with more than one active card;
- Activation of new SIM cards for exclusive use of data and Internet access services;
- There are active cards for use in machines, equipment and vehicles only (automatic payment terminals using the mobile network, alarm equipment, security, telemetry and telematics, etc.);
- There are cards for corporate use.

II.3.4.3 Number of subscribers to the service

At the end of 2005 there were 11.4 million subscribers to the MTS, an increase of 10.5% vis-à-vis the total number of subscribers of the previous year.

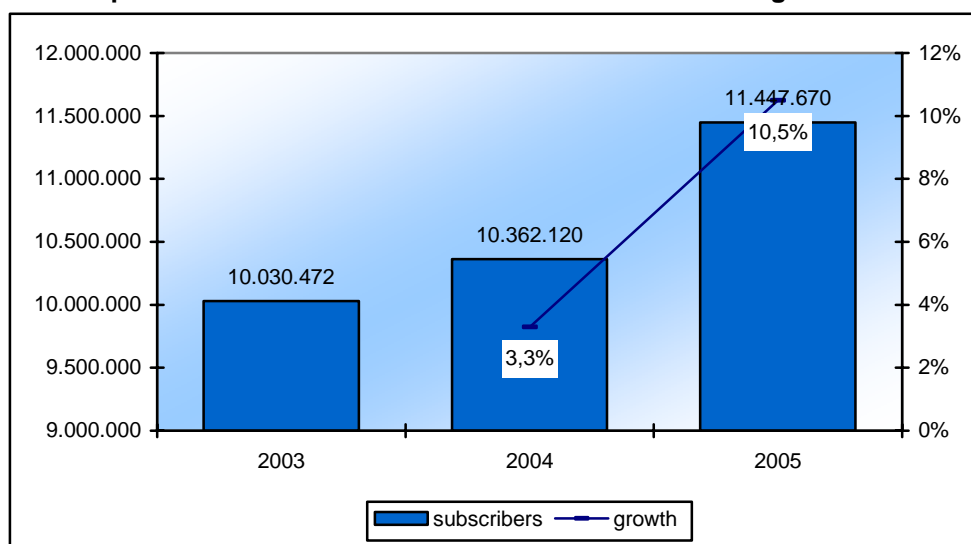
Table 48 – Number of subscribers

	2003	2004	2005
Total number of subscribers	10,030,472	10,362,120	11,447,670
Post-paid	2,062,943	2,141,166	2,157,121
Pre-paid	7,967,529	8,220,954	9,290,549

Source: ICP-ANACOM

Unit: 1 subscriber

Graph 40 – Evolution of the number of subscribers and growth rates



Source: ICP-ANACOM

The recent evolution in the number of subscribers was partly influenced by the following factors:

- Development of 3G services. It is estimated that the number of 3G customers in Portugal, including migrations, has reached about 400,000 in October 2005⁴⁹.
- The coming into the market of the above-mentioned new discount offers (Uzo,

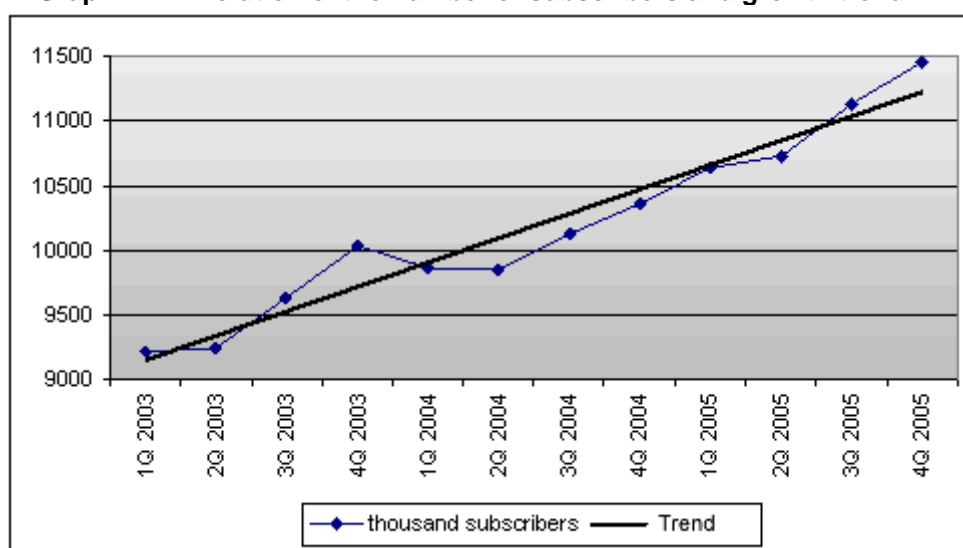
⁴⁹ Source: European Mobile Communications Report, Issue 197, November 2005.

Rede 4, Vodafone Directo).

- The development of new applications, such as those for use in machines, for instance.

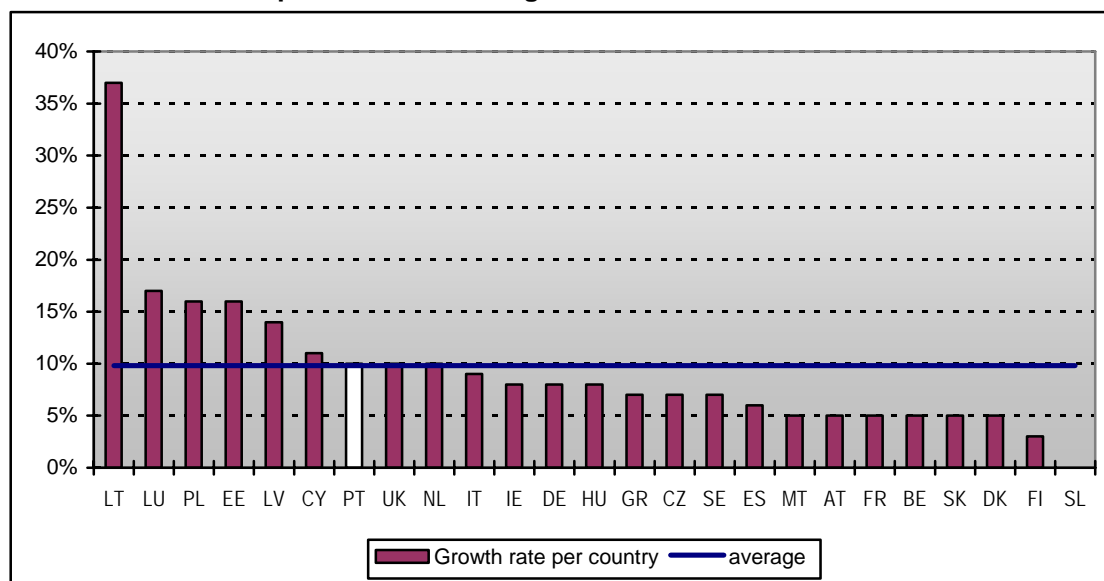
These factors contributed to sustain the growing trend of the number of MTS subscribers in Portugal.

Graph 41 – Evolution of the number of subscribers and growth trend



Source: ICP-ANACOM

It should be mentioned that, despite the high MTS penetration in Portugal and Portugal's position in the EU ranking regarding this variable, the service's growth in 2005 was one of the fastest in the EU.

Graph 42 – Subscriber growth trends in the EU25 countries

Source: European Commission, 11th Implementation Report.

Notes: countries BE, CZ, DK, GR, ES, NL, UK with growth rates in the July 2004/July 2005 period. Remaining countries October 2004/ October 2005. No data on Slovenia.

II.3.4.4 Service's usage level

Below is the evolution of the service's usage level, measured in voice traffic, SMS, data services and roaming.

II.3.4.4.1 Voice traffic

In year 2005, MTS subscribers made about 6.45 billion calls, 6.8 per cent more than in the previous year.

In the same period, MTS subscribers received over 6.5 billion calls, a growth of 6.3 per cent regarding the previous year.

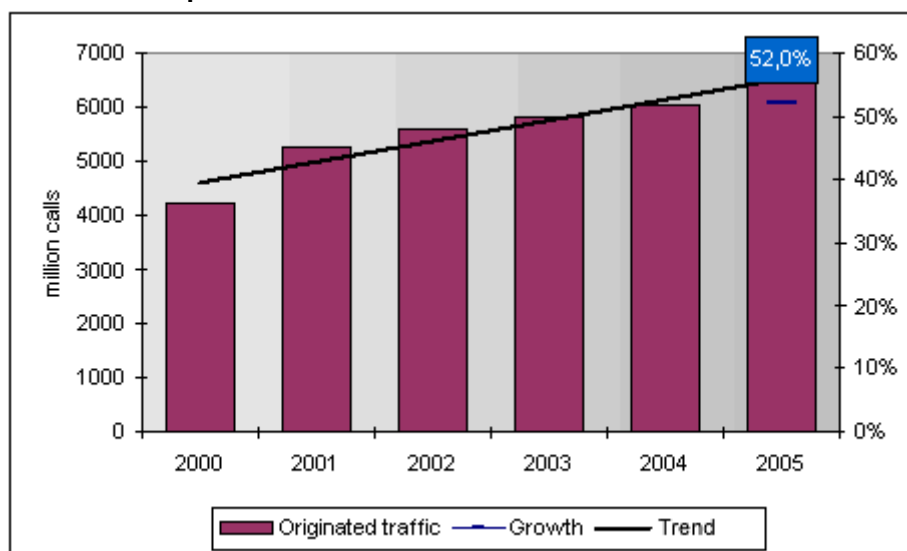
Table 49 – Voice traffic in number of calls

	2000	2001	2002	2003	2004	2005
Outgoing traffic	4,244	5,264	5,608	5,812	6,040	6,450
Own network – own network	2,674	3,532	3,711	3,860	4,011	4,348
Own network – national FTS	594	599	588	542	517	510
Own network – international networks	78	113	165	173	196	209
Own network – other national MTS	898	1,020	1,143	1,238	1,316	1,387
Incoming traffic	4,219	5,478	5,751	5,935	6,163	6,549
Own network – own network	2,674	3,532	3,711	3,860	4,011	4,345
Other national MTS – own network	662	1,007	1,139	1,240	1,318	1,390
National FTS – own network	794	815	762	691	659	626
International networks – own network	89	124	138	145	175	189

Source: ICP-ANACOM

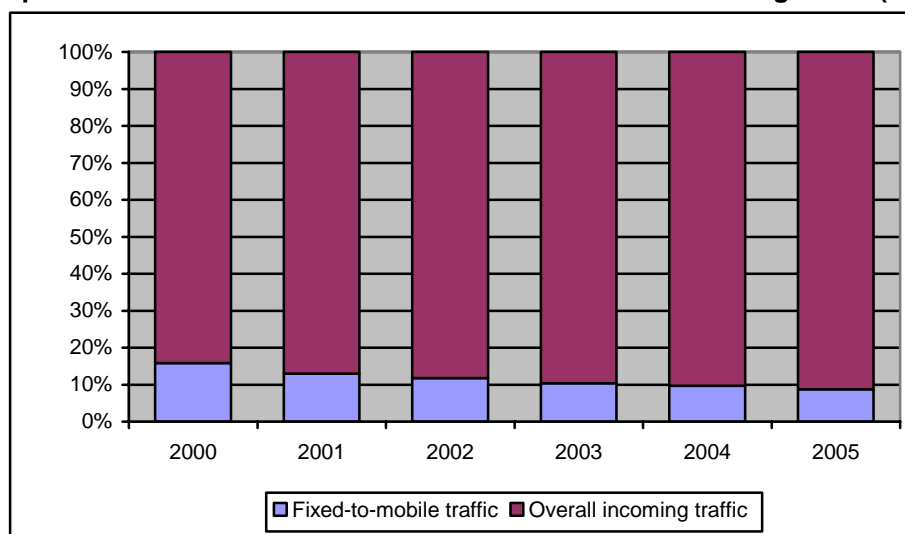
Unit: thousand calls

Between 2000 and 2005, the outgoing traffic grew about 52 per cent and the incoming one about 55.2 per cent. But this growth was not constant along this period. There was a significant decrease in the growth rates as from 2002. This slowing-down trend was reversed in 2005. The factors that can explain the recent evolution of the penetration rate can also justify this evolution in traffic.

Graph 43 – Growth in the amount of calls 2000/2005

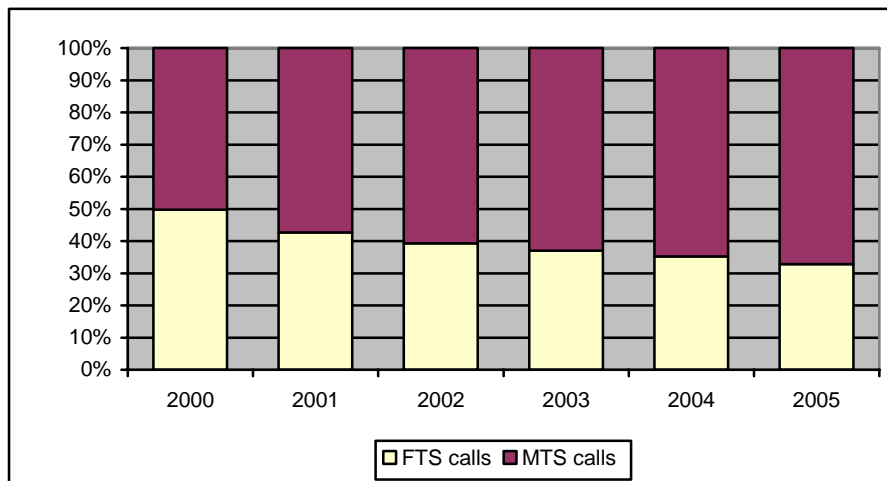
Source: ICP-ANACOM

Fixed-to-mobile calls keep their downward trend, with a negative evolution (-5 per cent on the previous year). This type of calls already stands for only 10 per cent of calls.

Graph 44 – Rate of fixed-to-mobile traffic in the overall incoming traffic (calls)

Source: ICP-ANACOM

It should be mentioned that, since the beginning of the period now being considered, the mobile voice traffic stands for most of the overall voice traffic.

Graph 45 – Distribution of voice traffic with origin in fixed and mobile networks⁵⁰

Source: ICP-ANACOM

Regarding the evolution of voice traffic in minutes, the number of minutes of conversation with origin in mobile networks grew about 8.9 per cent vis-à-vis the previous year, reaching about 11.6 billion minutes.

The number of minutes destined to mobile networks reached 11.9 billion minutes, a

⁵⁰ The year 2005 only includes traffic figures of the first three quarters.

growth of 8.4 per cent versus the previous year.

Table 50 – Voice traffic in minutes

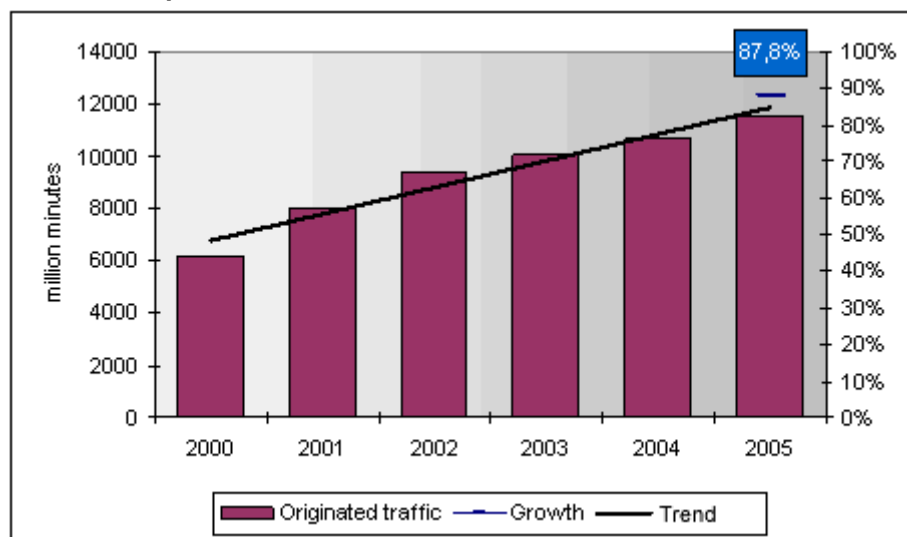
	2000	2001	2002	2003	2004	2005
Outgoing traffic	6,176	7,963	9,358	10,014	10,653	11,598
Own network – own network	3,699	5,240	6,213	6,674	7,172	7,929
Own network – national FTS	861	856	886	864	823	819
Own network – international networks	224	339	468	479	510	537
Own network – other national MTS	1,392	1,528	1,792	1,998	2,147	2,313
Incoming traffic	6,299	8,517	9,770	10,333	11,008	11,935
Own network – own network	3,699	5,240	6,213	6,674	7,172	7,929
Other national MTS – own network	1,020	1,522	1,792	1,999	2,148	2,314
National FTS – own network	1,306	1,389	1,348	1,235	1,176	1,146
International networks – own network	274	366	418	425	512	546

Source: ICP-ANACOM

Unit: million minutes

Between 2000 and 2005, the outgoing traffic grew about 87.8 per cent and the incoming traffic about 89.5 per cent. But this growth was not constant along this period. There was a significant decrease in the growth rates as from 2002. This slowing-down trend was inverted in 2005. The factors that can explain the recent evolution of the penetration rate can also justify this evolution in the number of subscribers.

Graph 46 – Growth in the amount of minutes 2000/2005

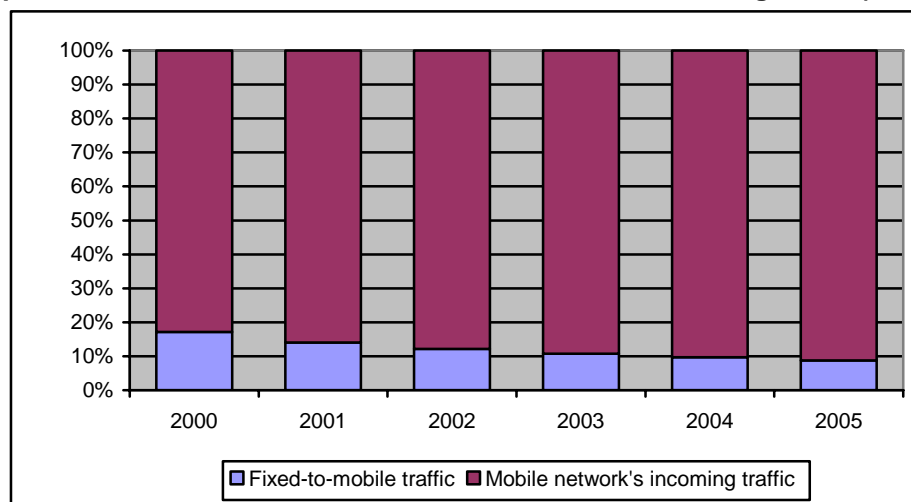


Source: ICP-ANACOM

Just as mentioned in the case with calls, the number of minutes with origin in fixed networks and destination in mobile networks has been losing importance in the

overall mobile networks' incoming traffic. The fixed-to-mobile call's conversation time has again decreased vis-à-vis the previous year (-2.6 per cent).

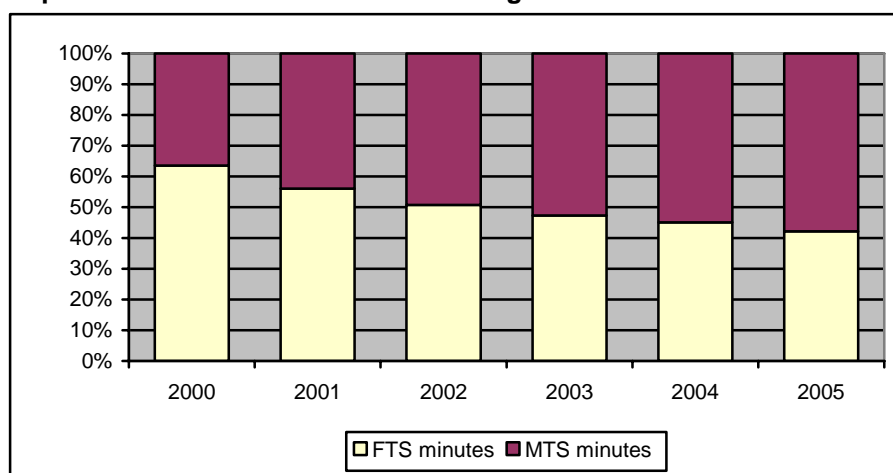
Graph 47 – Rate of fixed-to-mobile traffic in the overall incoming traffic (minutes)



Source: ICP-ANACOM

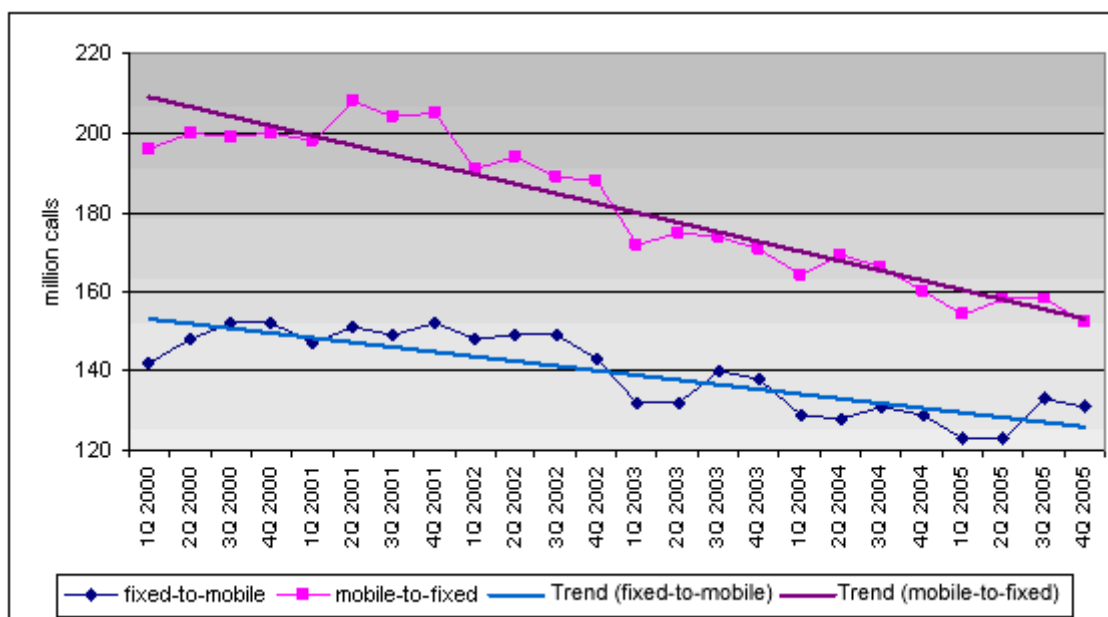
Indeed, this effect led to a growing intensity of voice traffic in mobile networks – and less in fixed ones. This traffic already stands for about 60 per cent of the overall voice traffic.

Graph 48 – Distribution of traffic with origin in fixed and mobile networks

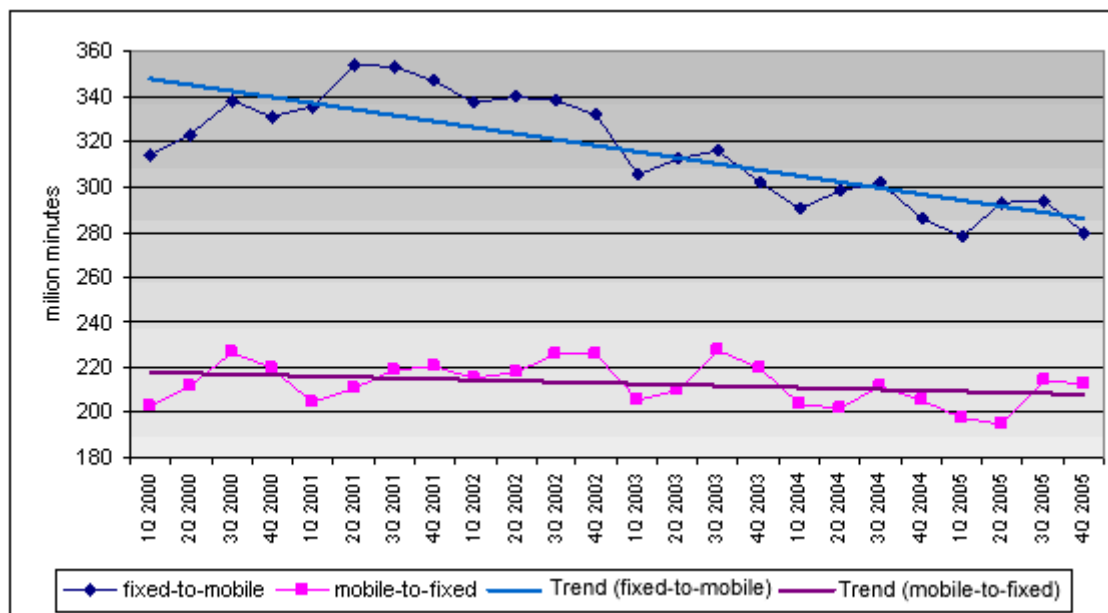


Source: ICP-ANACOM

The decreasing trend of mobile-to-fixed and of fixed-to-mobile traffic has been going on for some years and is related with the phenomenon of the decreasing number of FTS customers.

Graph 49 – Evolution of the amount of mobile-to-fixed and fixed-to-mobile calls and trend

Source: ICP-ANACOM

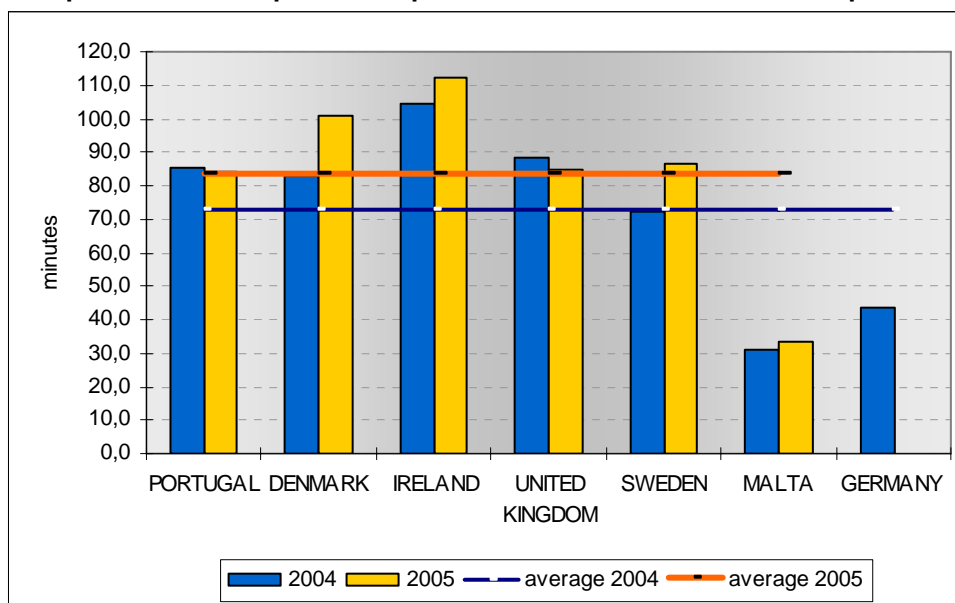
Graph 50 – Evolution of the amount of mobile-to-fixed and fixed-to-mobile minutes and trend

Source: ICP-ANACOM

Mobile voice traffic already stands for most of the voice traffic, even though if the data traffic is taken into account the number of fixed minutes is higher than that of mobile ones.

The graph below shows an international comparison of traffic per subscriber. As can be seen, and according to the available data, the intensity of the service's usage is close to the average of the considered countries.

Graph 51 – Minutes per month per subscriber – international comparisons



Source: ICP-ANACOM and remaining NRAs

Note: In the cases with Denmark and Sweden only 6-month traffic was considered and with the United Kingdom only 9.

Data service traffic

Regarding data services, there is an apparent decrease in traffic to services using the WAP protocol, which could have a connection with the development of 3G services. There is no reliable data on the remaining data services.

Table 51 – Access to WAP mobile portal

Data services traffic	2003	2004	2005
Access to WAP services (via GSM)			
Calls	31,970	26,271	13,474
Minutes	32,368	26,725	13,904
Access to WAP services (via GPRS)			
Sessions	n.a.	102,111	83,310
Mbytes	n.a.	2,214	5,424

Source: ICP-ANACOM

Unit: thousands

II.3.4.4.2 Roaming

In year 2005, roaming in traffic didn't vary significantly, if written messages aren't considered (10.7 per cent).

The average length of roaming in calls was 118 seconds, a similar figure to that of the previous year.

Table 52 – Roaming in traffic

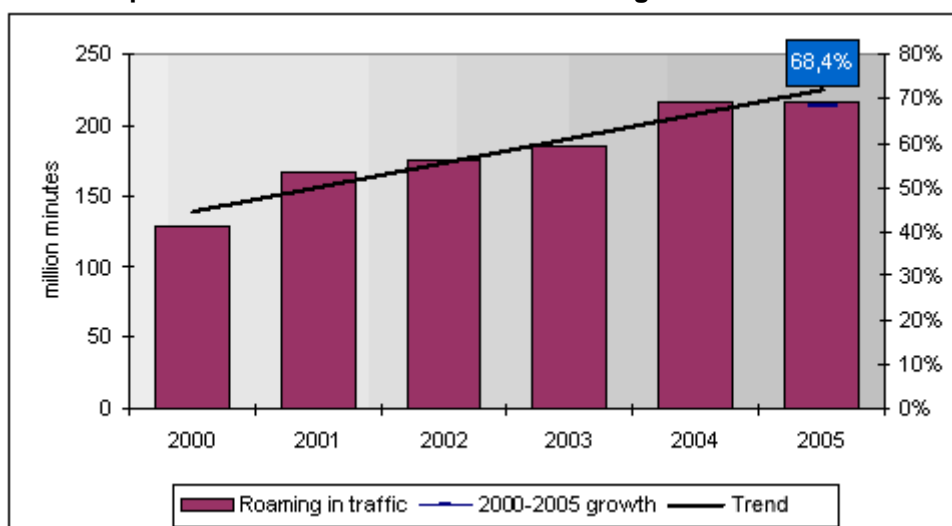
	2000	2001	2002	2003	2004	2005
Roaming voice calls			108,838	119,983	110,929	110,441
Amount of roaming minutes	128,679	166,948	175,292	185,162	216,701	216,706
Roaming written messages				73,465	139,014	153,732
Average length of calls (sec)					117	118

Source: ICP-ANACOM

Unit: thousands / seconds

Note: Only from 2004 one of the subscribers stopped including SMSs in roaming in calls and thus the series aren't comparable between 2003 and 2004.

Graph 52 – Growth in the amount of roaming in traffic 2000/2005



Source: ICP-ANACOM

Roaming out traffic has a positive evolution: about 3.6 per cent in calls and 8.5 per cent in minutes.

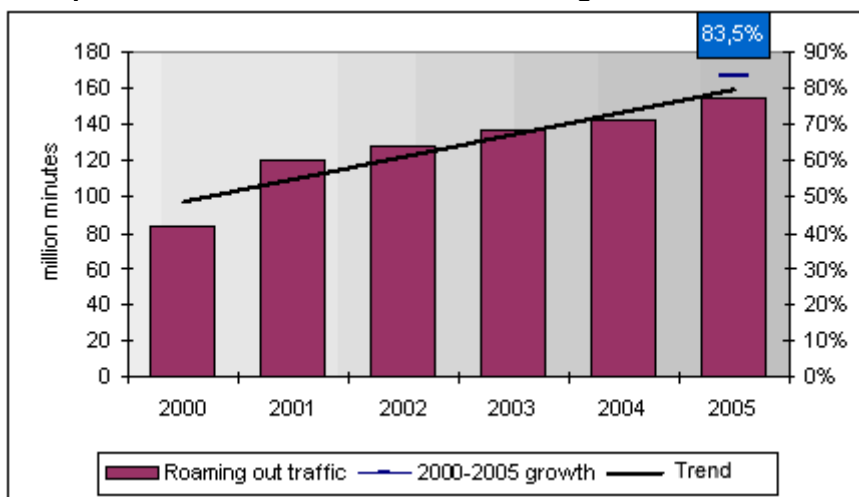
Table 53 – Roaming out traffic

	2000	2001	2002	2003	2004	2005
Roaming voice calls	47,884	46,989	71,800	72,329	75,105	77,814
Amount of roaming minutes	84,310	120,581	128,519	137,623	142,599	154,728
Roamed written messages	n.a.	n.a.	38,026	58,962	74,645	118,424
Average length of calls (sec)	106	108	107	114	114	119

Source: ICP-ANACOM

Unit: thousands / seconds

The most significant variation was in the amount of messages, which had an increase of over 58 per cent. There is a growing trend for the use of SMSs, given the price of this type of calls and the value of terminations in these cases. Noteworthy is once again the fact that receiving roamed messages is cost-free for the roamer, whereas receiving a voice call implies paying a share of the call, which is the termination cost of the operator to which the roamer registered. This and the above mentioned campaigns justify the preferred use of SMSs instead of voice calls.

Graph 53 – Growth in the amount of roaming out traffic 2000/2005

Source: ICP-ANACOM

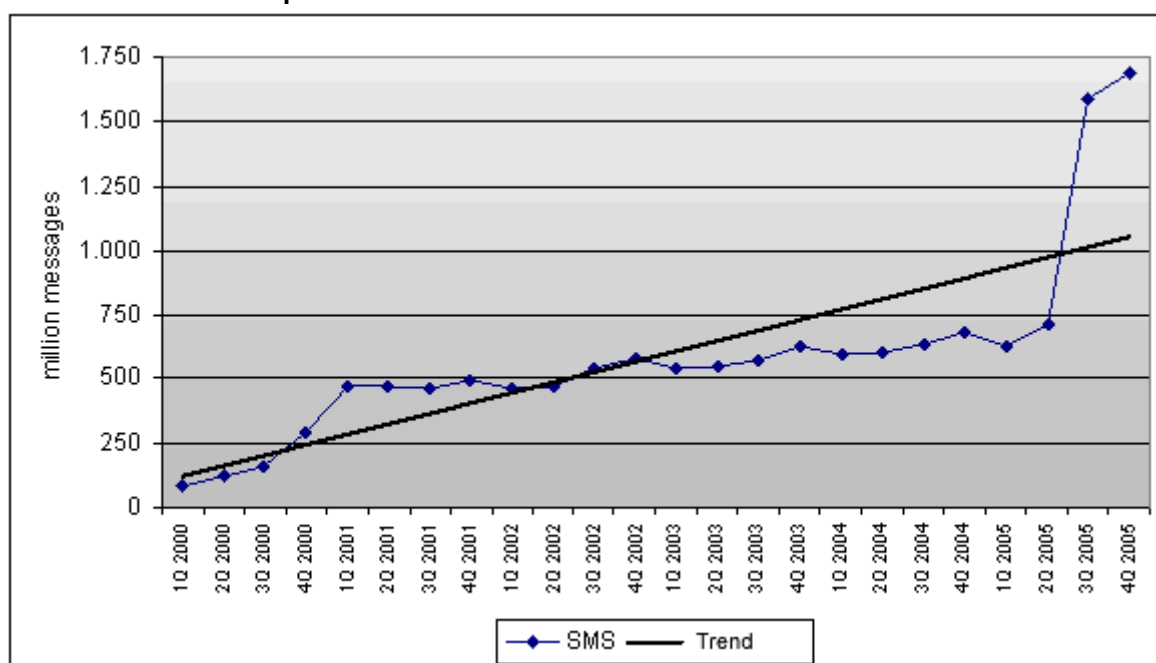
The length of roaming out calls increased in 2005, reaching a peak of 119 seconds per call.

II.3.4.4.3 SMSs

The year 2005 had a very significant increase in the amount of sent written messages, reaching about 4.6 billion messages, an 83.3 per cent increase over the previous year.

This was due to the operators' promotional campaigns to incentive the use of this service.

Graph 54 – Evolution of the amount of SMSs and trend



Source: ICP-ANACOM

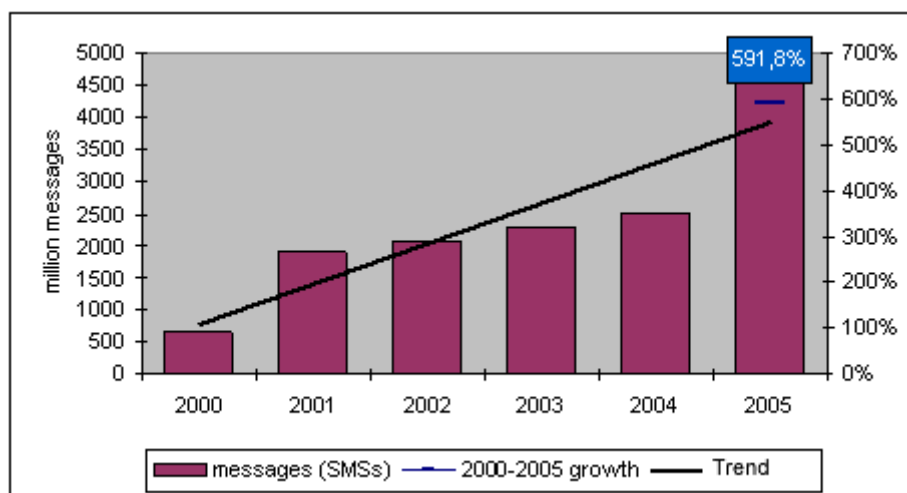
Table 54 – SMSs with origin in own network

2000	2001	2002	2003	2004	2005
550	1,529	2,053	2,296	2,518	4,615
Growth	178.1%	34.3%	11.9%	9.7%	83.3%

Source: ICP-ANACOM

Unit: millions of messages, %

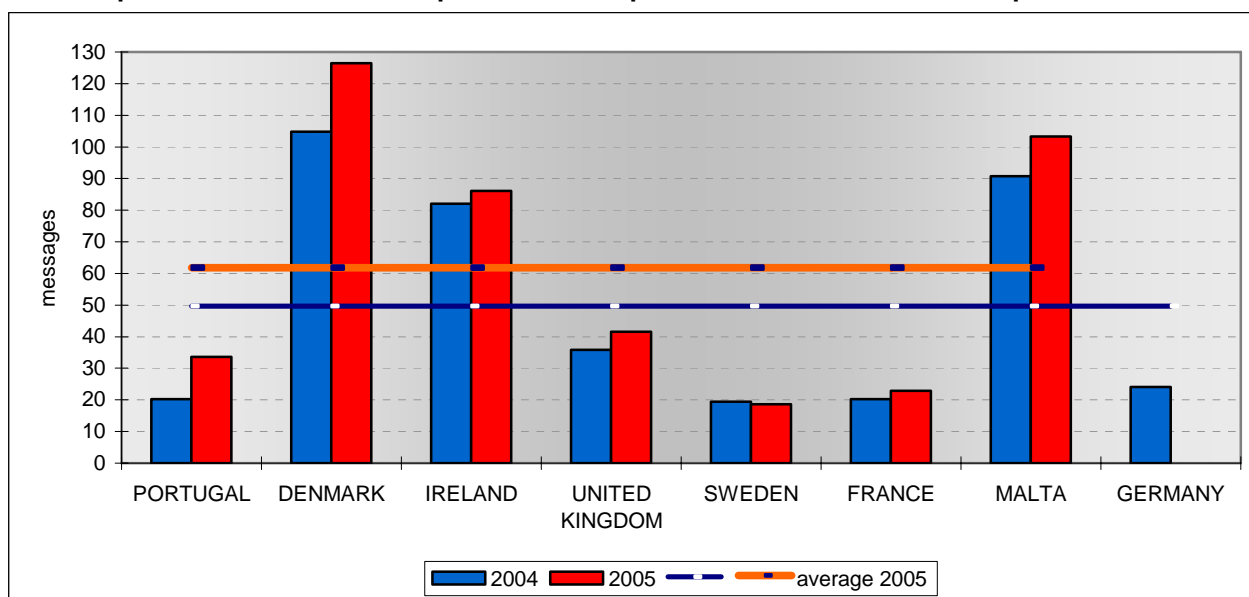
Graph 55 – Growth in sent SMSs – 2000/2005



Source: ICP-ANACOM

According to the available data, the use of SMSs in Portugal is less intensive than in other countries.

Graph 56 – Amount of SMSs per subscriber per month – international comparisons



Source: ICP-ANACOM and remaining NRAs

Note: In the cases with Denmark and Sweden only 6-month traffic was considered for 2005 and with Malta and the United Kingdom only 9.

II.3.4.4.4 ARPU

The estimated average revenue per user should decrease about 9.6 per cent in 2005,

further to an increase in 2004.

Table 55 – Average revenue per user (ARPU⁵¹)

	2000	2001	2002	2003	2004	2005 ⁵²
Average revenue per user (ARPU)	31.41	29.53	26.42	25.24	25.59	23.12
Yearly variation	2.9%	-6.0%	-10.5%	-4.5%	1.4%	-9.6%

Source: ICP-ANACOM, providers' reports and accounts.

Unit: Euros, %.

Table 56 – Average monthly cash cost per user (CCPU⁵³)

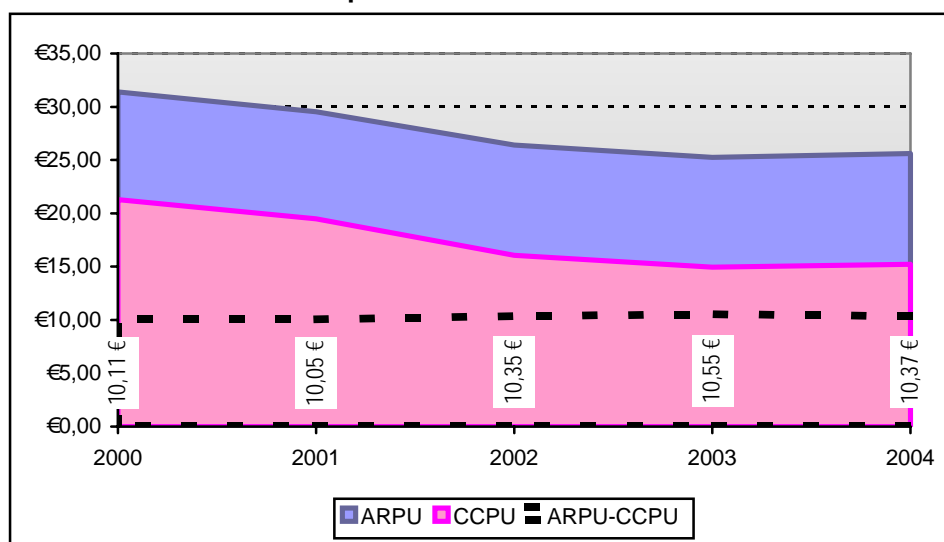
	2000	2001	2002	2003	2004	2005
Average monthly cash cost per user (CCPU)	21.29	19.48	16.07	14.94	15.22	n.a.
Yearly variation	-5.1%	-8.5%	-17.5%	-7.0%	1.9%	n.a.

Source: ICP-ANACOM, providers' reports and accounts.

Unit: Euros, %.

The difference between ARPU and CCPU has been around 10 euros. However, taking into account the foreseeable drop in the ARPU, the estimated difference in 2005 should be below 10 euros.

Graph 57 – ARPU and CCPU



Source: ICP-ANACOM, operators' financial data from press releases.

⁵¹ ARPU - Average Revenue Per User.

⁵² Estimated figure. Reckoning was made based on the following publications: Optimus, Market Report of 1-12-2005; TMN Grupo PT's website

<http://www.telecom.pt/InternetResource/PTSite/PT/Canais/investidores/InformacaoFinanceira/IndicadoresChave/TMN.htm>;

Vodafone Vodafone Plc's website

http://www.vodafone.com/article_wide/0,3041,CATEGORY_ID%253D403%2526LANGUAGE_ID%253D0%2526CONTENT_ID%253D230852,00.html

⁵³ CCPU – Cash Cost Per User – Operational costs minus provisions, amortizations and terminal sales.

II.3.4.5 Service price levels

Below is an international price comparison regarding this service and the evolution of its prices between 2002 and 2005.

Part II – State of communications

II.3.4.5.1 International comparison of STM⁵⁴ prices

According to the available data, the price plans existing in Portugal are below the average in the case with the pre-paid plans. However, this situation changes greatly regarding the post-paid plans. In these cases, the price level of the plans existing in Portugal is above the average for the high consumption levels.

Table 57 – International price comparisons (November 2005) – deviations to average

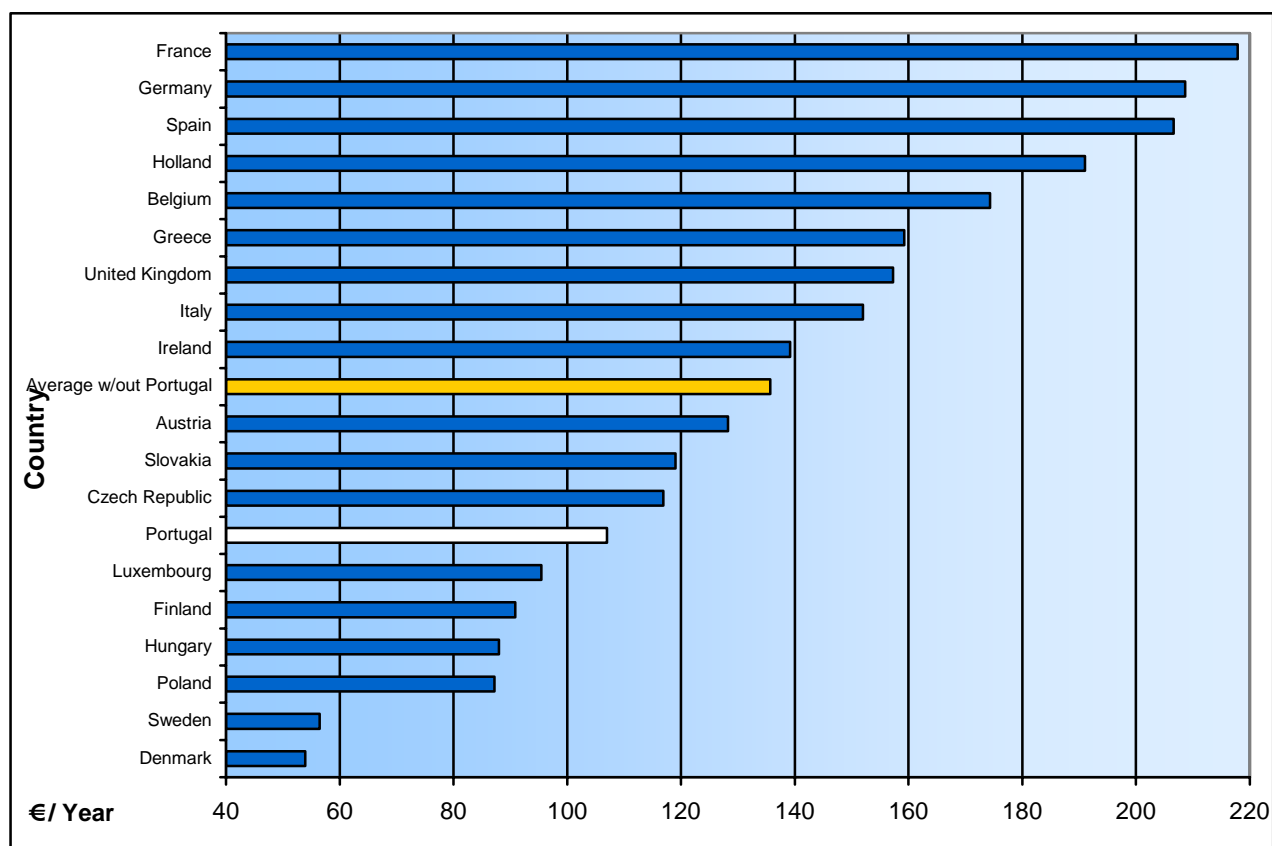
Package \ Profile	Low consumption	Medium consumption	High consumption
Post-paid	-15.9 %	- 34.3%	12.4%
Pre-paid	-21.1%	-23.1%	-25.5%

Source: Teligen/OCDE/ICP-ANACOM.

For the low consumption usage profile, the pre-paid packages offered in Portugal are 20 per cent above the average of the considered countries.

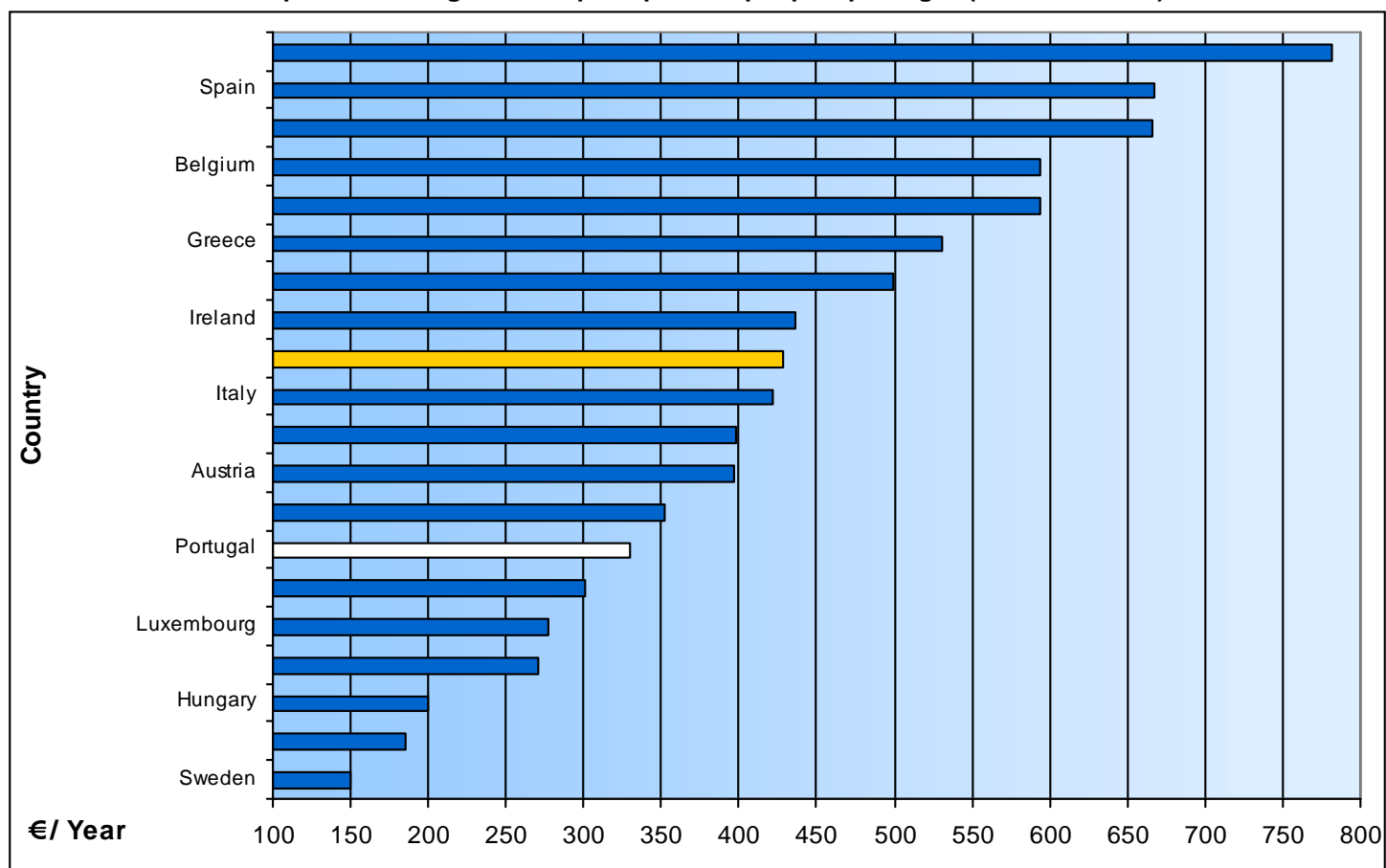
⁵⁴ Methodological note:

The results of the packages herein were collected from the OECD/Teligen database in November 2005 and are in euros, without VAT and not considering PPP (purchase power parity). Of the countries belonging to the OECD, those belonging to the EU were chosen. Considering that the OECD/Teligen, by default, always gives two results per country (regarding the incumbent operator and the second most representative one), the operator with the lowest tariff plan in terms of annual billing for each package and usage profile, for each country, was selected. Deviations are in connection with the average of the selected countries, Portugal excluded.

Graph 58 – Low consumption profile – pre-paid packages (November 2005)

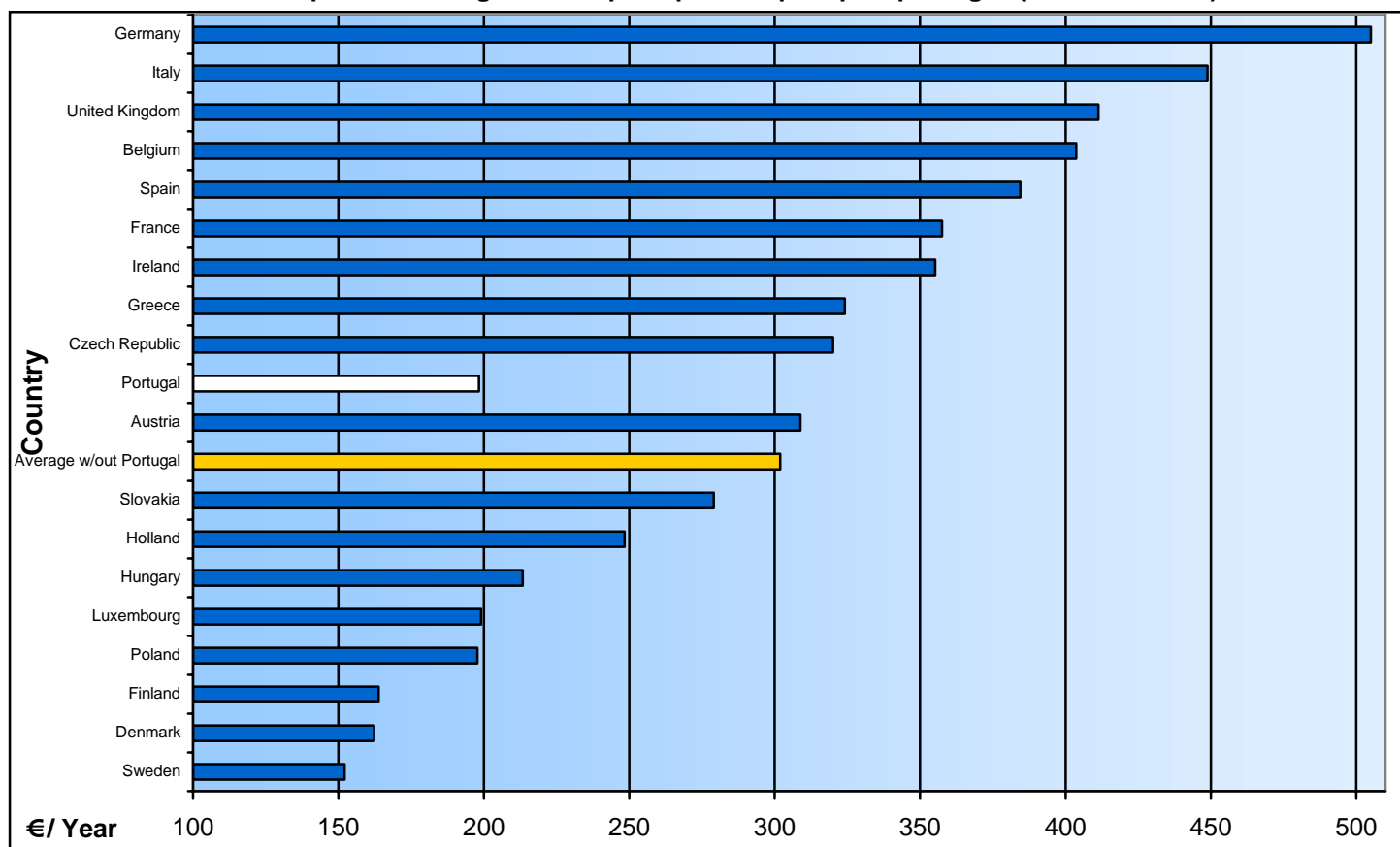
Source: Teligen/OCDE/ICP-ANACOM

In the case with the average consumption profile, the prices in Portugal are around 23 per cent below the average of the selected countries, for the pre-paid packages.

Graph 59 – Average consumption profile – pre-paid packages (November 2005)

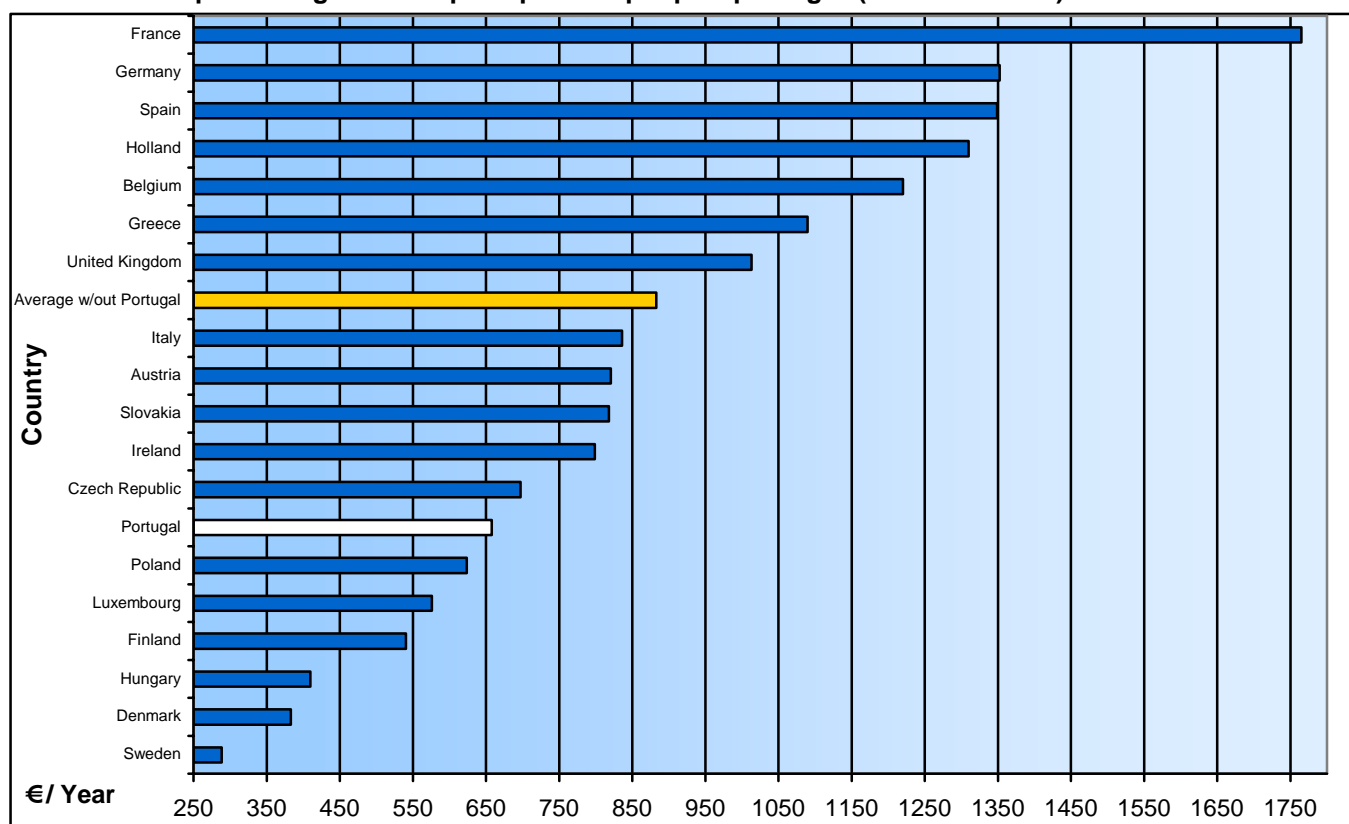
Source: Teligen/OCDE/ICP-ANACOM

Regarding the post-paid packages, the prices practiced in Portugal are about 34.4 per cent below the average.

Graph 60 – Average consumption profile – post-paid packages (November 2005)

Source: Teligen/OCDE/ICP-ANACOM

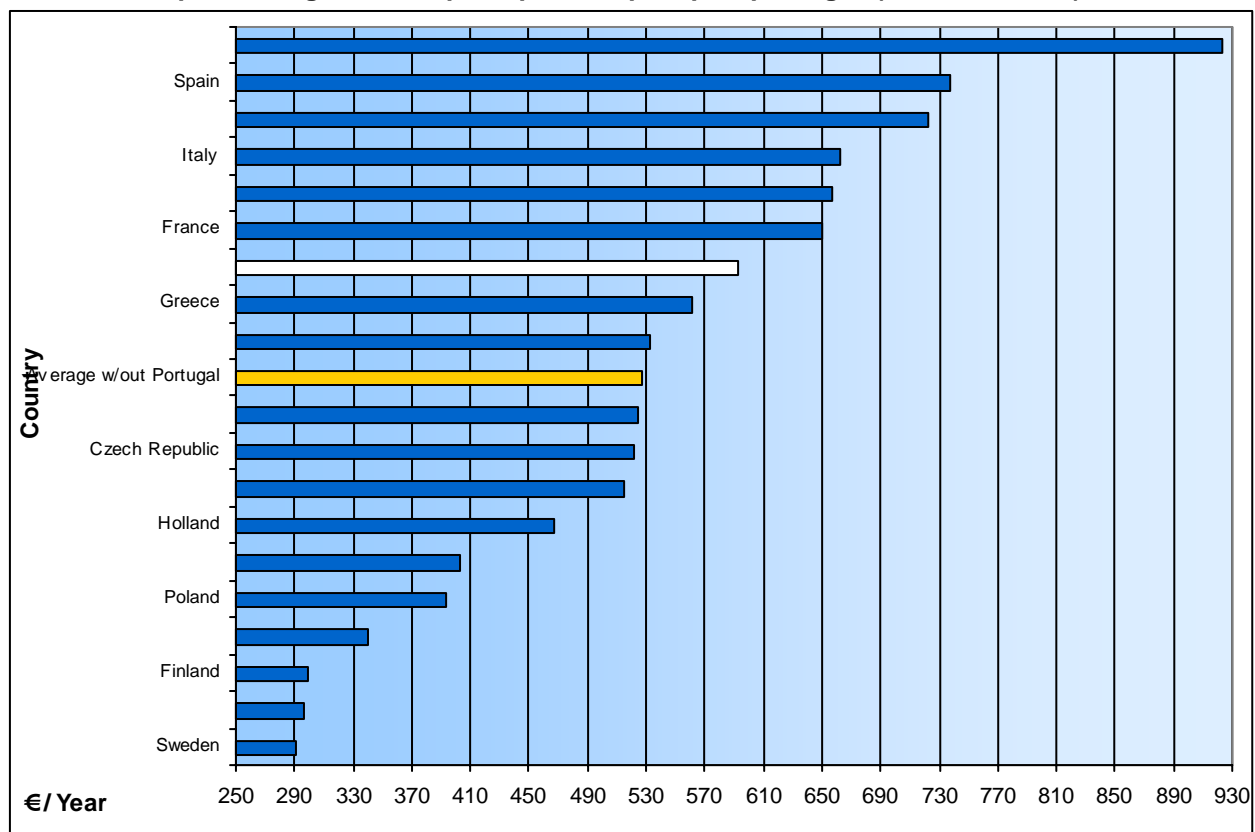
For the high consumption profile, the pre-paid offers existing in Portugal had a price about 25.5 per cent below the average.

Graph 61– High consumption profile – pre-paid packages (November 2005)

Source: Teligen/OCDE/ICP-ANACOM

In the case with the post-paid packages, the deviation to the average is of about 12.4 per cent⁵⁵.

⁵⁵ The comment in section 7 of ICP-ANACOM's Advisory Council's Opinion regards these international comparisons, but refers to data from November 2005, in which Teligen/OECD used, for the reckoning of the packages, outdated offers from the national operators, which hindered Portugal's relative standing in the comparisons. Figures herein are the corrected ones, further to the detection of that inaccuracy.

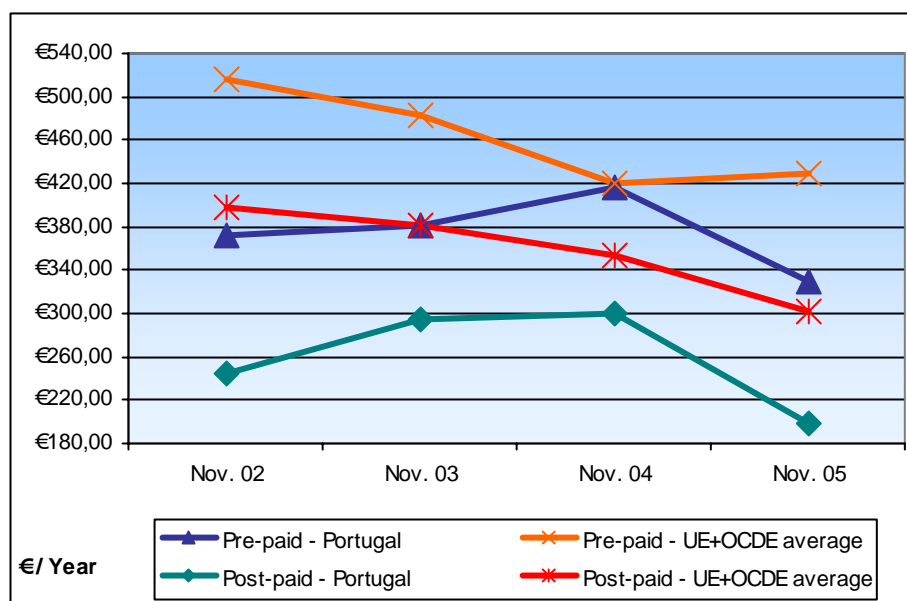
Graph 62 – High consumption profile – post-paid packages (November 2005)

Source: Teligen/OCDE/ICP-ANACOM

Evolution of national prices and comparison with the EU (2002/2005)

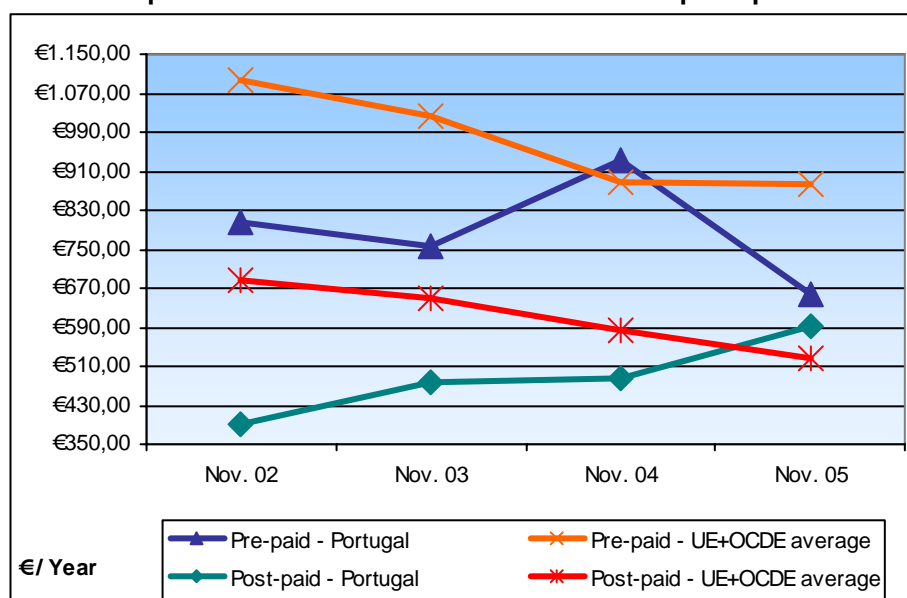
The following graphs show the evolution trends of the service prices in Portugal.

In the case with the low consumption usage profile, the pre-paid plans tend to be below the average, with an important decrease in 2005.

Graph 63 – Price evolution – low consumption basket

Source: Teligen/OCDE/ICP-ANACOM

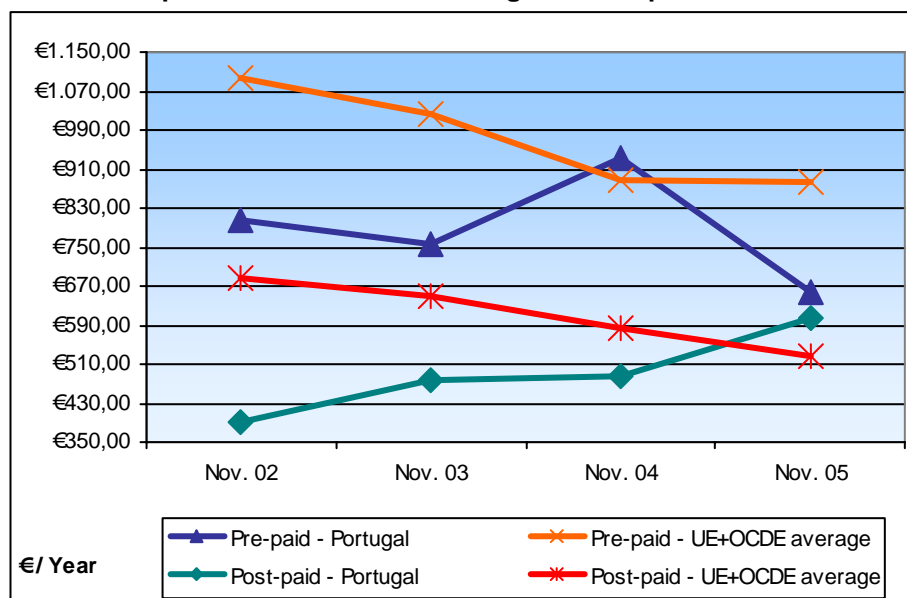
In the medium consumption usage profile, all the plans are below the corresponding average.

Graph 64 – Price evolution – medium consumption profile

Source: Teligen/OCDE/ICP-ANACOM

In the case with the high consumption usage profile, there is an approximation between the pre-paid plan, which fell considerably, and the price of the post-paid plan, which suffered an increase. This plan's price is now above the average.

Graph 65 – Price evolution – high consumption basket



Source: Teligen/OCDE/ICP-ANACOM

II.3.4.6 GSM networks' quality of service

ICP-ANACOM has been making surveys to assess the quality of the mobile networks in Portugal. In 2005, the three usual indicators were analysed – coverage, accessibility and audio quality⁵⁶.

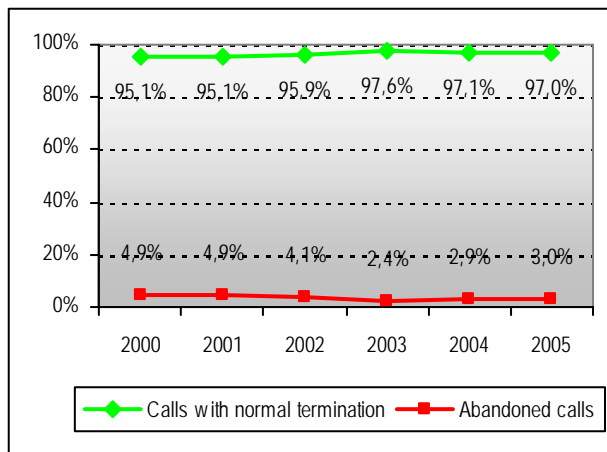
The survey shows that the GSM mobile networks have good coverage and performance levels.

The Accessibility indicator has high levels, maintaining the trend registered in the last years. Of the test calls made in the urban agglomerates and road axels of mainland Portugal, 97 per cent were established with success, with the conversational phase

⁵⁶ Survey on the Quality of Service of Mobile Networks - QoS-GSM 2005, available at <http://www.anacom.pt/template12.jsp?categoryId=186283> (global study) and <http://www.anacom.pt/template12.jsp?categoryId=187984> (rail axels).

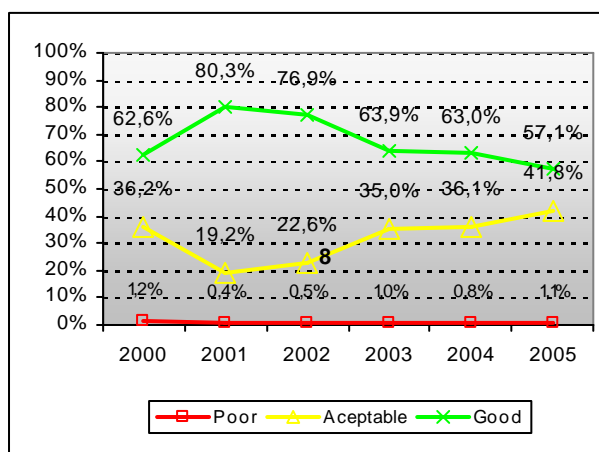
adequately kept, and ended in a normal way (by disconnection) at the end of the pre-defined time period.

Graph 66 – Global accessibility (Mainland)



Source: ICP-ANACOM

Graph 67 – Global audio quality (Mainland)



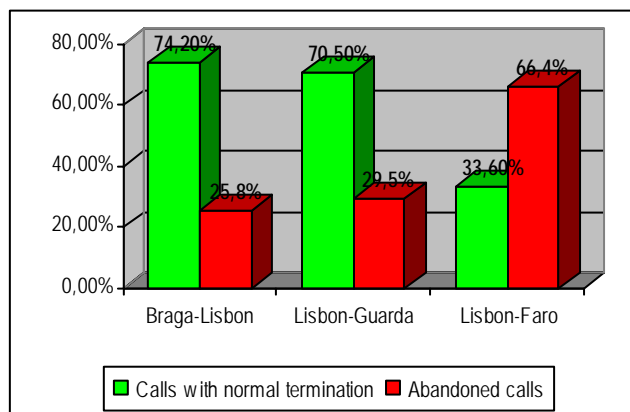
Source: ICP-ANACOM

Regarding the Audio Quality indicator, around 99 per cent of test calls presented positive audio quality values. Only about 1 per cent presented 'poor' or 'bad' levels. However, this indicator kept the downward trend that has been registered since 2002.

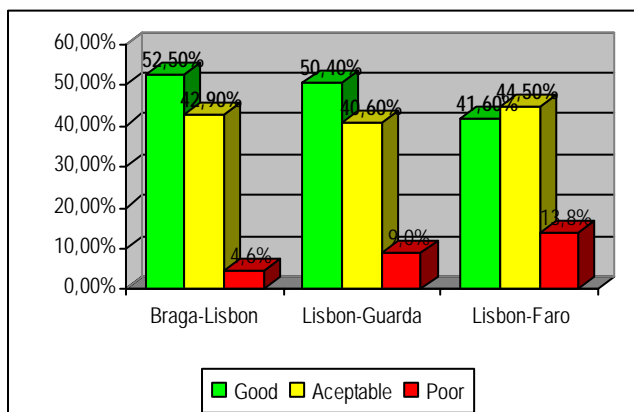
The performance of mobile networks does not show considerable differences between urban agglomerations and road axels regarding the Accessibility indicator.

In the latest years, the Audio Quality indicator decayed more strongly in urban agglomeration than on road axels. As a consequence, on the last studies performed, this indicator presents worse levels in urban agglomerations.

Rail axels were again included in the 2005 study and the results show that GSM networks have a poor performance. Only 61.8 per cent of test calls were established successfully and adequately kept during the conversational phase, and ended normally (by disconnection) at the end of the pre-determined time (110 seconds).

Graph 68 – Accessibility in rail axels

Source: ICP-ANACOM

Graph 69 – Audio quality in rail axels

Source: ICP-ANACOM

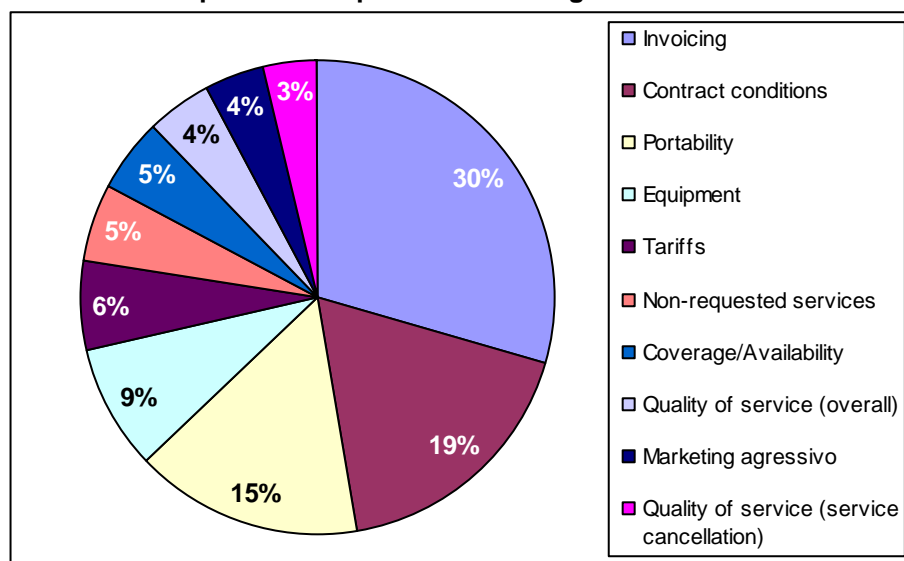
The poor results obtained on rail axels are mainly due to serious coverage deficiencies, sometimes with the total absence of radio signal, especially in the Lisbon-Faro route. On this rail axle, only 57.6 per cent of the attempted test calls were established successfully and only 33.6 per cent of calls were adequately kept and ended normally at the end of the predetermined conversation time (110 seconds).

II.3.4.7 Consumers' evaluation

ICP-ANACOM's Mission Unit for the Handling of Market Requests (UM-TSM - *Unidade de Missão de Tratamento de Solicitações de Mercado*) received during 2005 about 400 complaints concerning the mobile telephone service and corresponding operators.

The following graph shows that about half of those requests were due to invoicing and contractual conditions issues. Portability issues also have a high figure.

Graph 70 – Complaints concerning the MTS – 2005

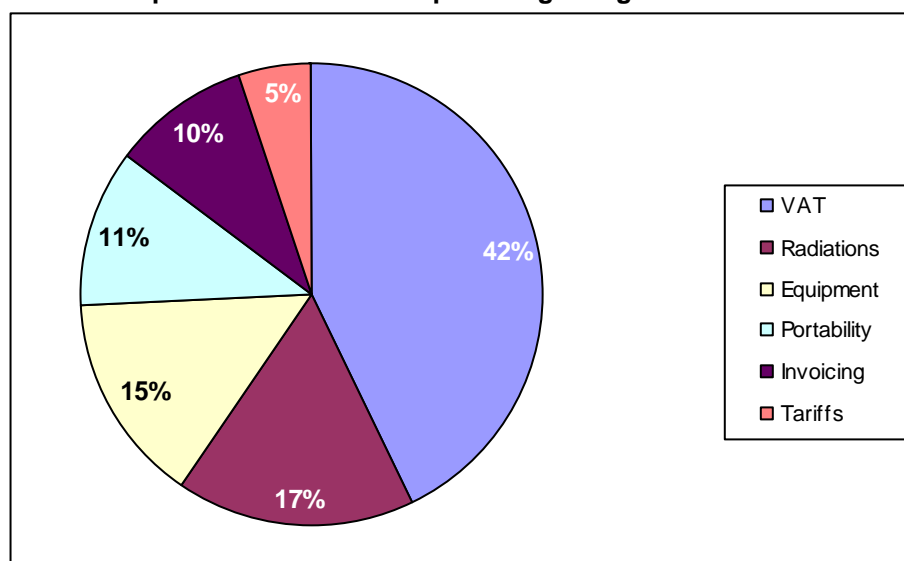


Source: ICP-ANACOM

It should be noted that the MTS only stands for 10 per cent of all complaints received at ICP-ANACOM regarding electronic communications services.

VAT was the main subject of the information requests in connection with the MTS, standing for about 42 per cent of all requests, which amounted to 239 in the year 2005.

Graph 71 – Information requests regarding the MTS – 2005



Source: ICP-ANACOM

II.4 Mobile Trunking Service

This chapter shows the state of the trunking service at the end of 2005, and the evolution that occurred during that period.

II.4.1 Main trends

In the mobile trunking service's activity during 2005, the intensification of the use of the service following the launch of commercial offers using CDMA (Code Division Multiple Access⁵⁷) stands out.

II.4.2 The mobile trunking offer

Below is a more detailed description of the services provided and the evolution during the year 2005. Entities providing these services in Portugal are also described.

II.4.2.1 Mobile Trunking

Mobile trunking is an electronic communications service via radio that is characterized by the establishment of bi-directional voice and data communications within a given closed user group. In this service, frequencies are dynamically shared by several clients in order to make the radio spectrum more profitable, being managed by the operator in order to guarantee the access to all clients. Each client has access to a private network, of a virtual nature, and the entity providing the service is responsible for the radio licences, infrastructure and equipment maintenance.

The mobile trunking service is especially targeted at companies that operate fleets, namely transportation, security and emergency, and construction companies, public and technical services. Its solutions apply to telemetry, remote control and remote

⁵⁷ Access system characterized by the sharing of the same frequency band through the allocation of different codes to each user.

monitoring services, video surveillance, fleet location and management.

II.4.2.2 Mobile trunking providers

In 2005, the trunking service was provided by two licensed entities: Radiomóvel – Telecomunicações, S.A. (Radiomóvel)⁵⁸, and Repart – Sistemas de Comunicação de Recursos Partilhados, S.A. (Repart)⁵⁹.

These entities started their commercial activity in February and October 1994, respectively, having provided the service using the MPT 1327⁶⁰ analogue system established by DTI (Department of Trade and Industry), from the United Kingdom, and the TETRA (Trans European Trunked Radio System)⁶¹ digital technology.

Repart started to operate the TETRA system at the end of 1999, and Radiomóvel launched this offer in 2000. However, since TETRA did not have the expected⁶² evolution, in 2002 Radiomóvel requested the change of its trunking operator licence in order to be authorized to use the CDMA^{Error! Bookmark not defined.} system. For that purpose, its licence was reconfigured, although it kept its status as a mobile trunking provider.

Table 58 – Mobile trunking providers

Radiomóvel - Telecomunicações, S.A.
Repart - Sistemas de Comunicação de Recursos Partilhados, S.A.

Source: ICP-ANACOM

II.4.2.3 New commercial offers launched in 2005

⁵⁸ Radiomóvel's licence was granted in 1993, further to an open competition.

⁵⁹ Repart's licence was granted in 1993, further to a second open competition.

⁶⁰ Technology used since the beginning of the provision of the service providing individual and group calls between users of a given closed group, short data messages and connections to the fixed network.

⁶¹ System used after 1999, considered more advantageous because it is based on a pan-European standard, therefore using harmonized frequencies and, thus, making it possible to use the service in Europe's geographical scope, through roaming. TETRA has also the following advantages: the possibility of manufacturers being able to produce TETRA equipment based on the same specifications (since it is an open standard); greater efficiency in the spectrum management, by using TDMA technology (Time Division Multiple Access – a system characterized by the simultaneous access of several users to a sole radio frequency band by breaking it in time by channels - time slots); capability to support a large set of new services (short group message calls, including the possibility of video transmission), etc..

⁶² Operators faced some problems, such as the lack of terminal equipment at an affordable price, a high cost of the network equipment (due to the limited scale production) and a limited number of equipment distributors.

During the year 2005, a new service was launched in connection with the offer using CDMA technology, named Zapp PTT (push-to-talk), which resembles the traditional walkie-talkie. Besides this service and with the same terminal it is also possible to make voice calls and to send SMSs to any other mobile network.

The main characteristic of the service are the following:

- Unlimited use of closed user group (CUG) calls and of CUG group calls up to ten participants;
- Basic monthly fee: 32.50 euros/terminal;
- Optional services:
 - PTT group calls > 10: 0.06 euros/minute/participant
 - Voice calls (price per minute):
 - CUG Zapp network: 0.026 euros
 - Zapp network: 0.06 euros
 - Fixed network: 0.06 euros
 - On-net SMS messages: 0.08 euros/sms

Besides this offer, there are also Zapp Total and Zapp Privados, with other possible configurations.

II.4.3 Evolution of mobile trunking in 2005

In 2005, the mobile trunking service increased its number of subscribers in around 11.9 per cent, confirming the reversion of the trend registered in 2004. However, the number of subscribers is still below the one of 2000.

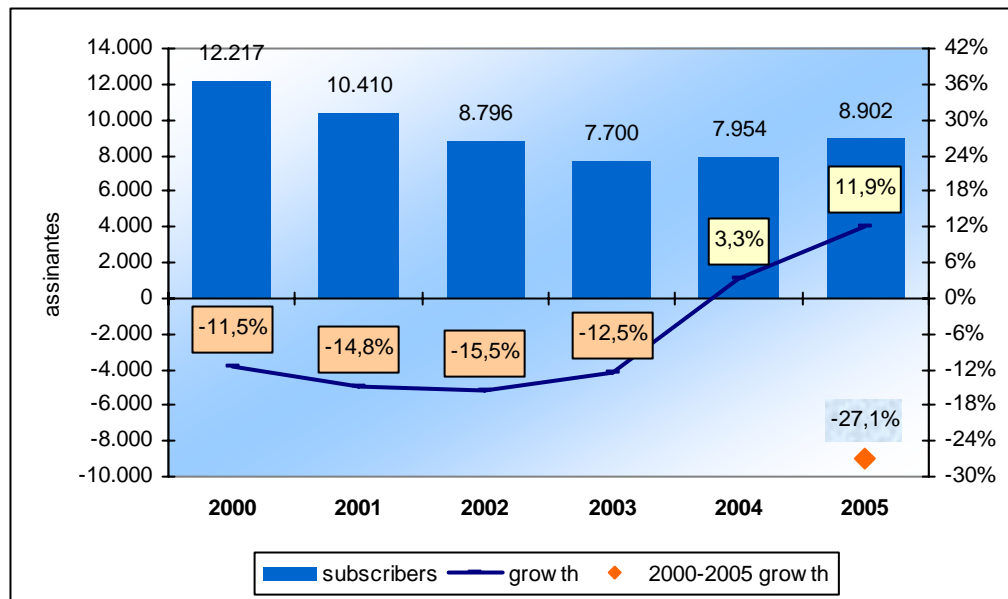
Table 59 – Number of subscribers

	2000	2001	2002	2003	2004	2005
Mobile trunking subscribers	12,217	10,410	8,796	7,700	7,954	8,902
Annual growth rate	-11.5%	-14.8%	-15.5%	-12.5%	3.3%	11.9%
2000/2005 growth						-27.1%

Source: ICP-ANACOM

Unit: 1 subscriber, %

Graph 72 – Evolution of the number of subscribers



Source: ICP-ANACOM

This growth is justified by the introduction of the CDMA system, with a broader and more varied offer than the previous systems.

It should be mentioned that the growth in the number of networks was stronger than that in the number of subscribers.

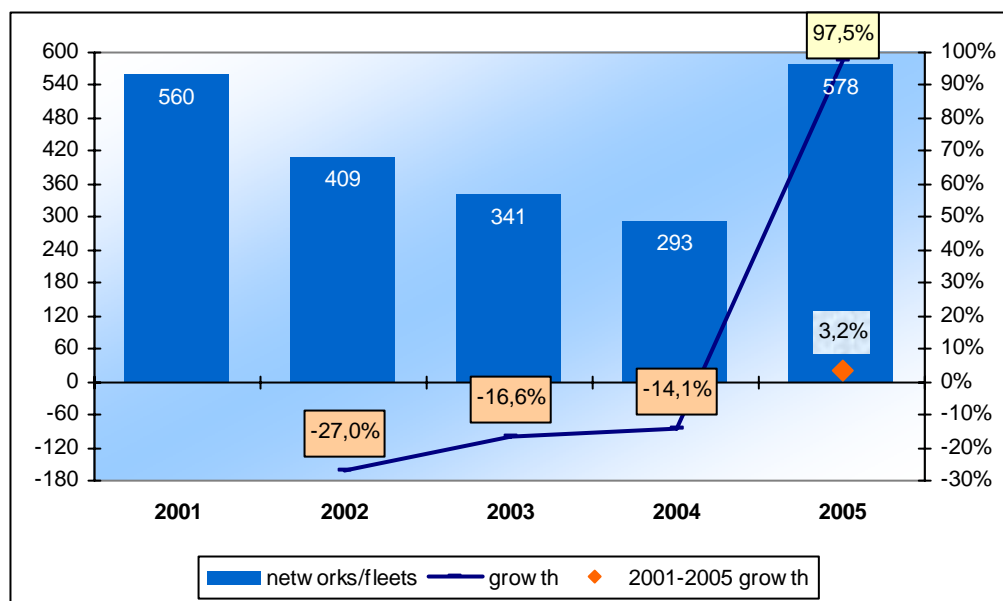
Table 60 – Number of networks / fleets

	2001	2002	2003	2004	2005
Networks / Fleets	560	409	341	293	578
Annual growth rate		-27.0%	-16.6%	-14.1%	97.3%
2001/2005 growth					3.2%

Source: ICP-ANACOM

Unit: 1 network/fleet, %

Graph 73 – Evolution of the number of networks / fleets



Source: ICP-ANACOM

II.5 Internet Access Service

This chapter contains the state of the Internet Access Service at the end of 2005, as well as its recent evolution.

II.5.1 Main items of the evolution in 2005

- The year 2005 was characterized by an important growth in the number of clients of the Internet Access Service. Indeed, at the end of last year there were about 1.48 million customers of this service, a growth of over 19 per cent vis-à-vis the same period of the previous year.
- About 35 per cent of the Portuguese households have Internet connection, 5 per cent more than at the end of 2004. Broadband became the preferred means for Internet access, being in 26 per cent of households, 8.7 per cent than in the previous year.
- 2005 registered the emergence of new broadband offers and the upgrade of already existing offers to throughput capacities equal or above 2 Mbps. By the end of the year these offers already stood for 60 per cent of all installed accesses.
- During the last year, one in each three new accesses was installed by alternative operators (one in each two accesses in the 4th quarter of 2005). The growth in the new operators' marginal share results, namely, from the improvement of the conditions of LLU, which fostered the emergence of very competitive offers, and from the considerable growth of the offers of access through cable modem alternative to Grupo PT. This led to important benefits to consumers, namely, price reduction, increase in the number of packages with several services and generalized offers with higher throughput.
- Last year saw the launch of new offers of Internet access services based on third generation mobile technologies by the three MTS providers.

- Also standing out is the launch of new residential offers based on fixed Internet technologies alternative to ADSL and cable, namely packages using Powerline and FWA technologies.

II.5.2 Internet Access Service's offer

The Internet Access Service can be provided using several technologies. On the other hand, the service is provided with several transmission capacities that translate into the provision of narrow band or broadband services.

According to the legal framework in force, the service is provided by the entities with a general authorization.

The following sections describe in more detail the services provided, the evolution during the year 2005 and the entities providing these services in Portugal.

II.5.2.1 Internet Access Service

This service is essentially provided using the access modes of dial up, dedicated access⁶³, ADSL access, cable modem access and access using the 3rd mobile generation.

Following is a brief description of the main Internet access modes:

- Access using dial-up connection – The packages for this means of access have, for technological reasons, a maximum throughput of 64 kbps (narrow band). This throughput is also affected by the need to convert data between the digital and analogue formats. The connections of the switched type (dial-up) are accessible to any subscriber with a fixed telephone line and a modem, which only need to become a client of one (or several) ISP. The PSTN access

⁶³ Dedicated connection – connection between a user and an ISP with a communication channel that is only used for the Internet connection; the channel is always open, whether the user is online or not.

provides higher throughputs, as well as the integration of voice and data services into a sole access. PSTN accesses can be basic⁶⁴ or primary⁶⁵.

- Access using DSL (Digital Subscriber Lines or xDSL) Technologies – These technologies use sophisticated modulation systems to increase the capacity of data transmission over the copper wire, using frequency bands not used by the voice signal. They may reach average figures considerably above dial-up connections over the analogue telephone line and the dial-up connection over PSTN. The fact that voice and data are carried in different frequencies gives these technologies the advantage of supporting two types of communication simultaneously, with the Internet connection in the “always on” mode. This technology is provided in pre-defined areas where it is possible to have a connection with the minimum physical characteristics needed.

There are several xDSL variants, of which the most used is the ADSL (Asymmetric DSL)⁶⁶. In terms of data throughput capacity, the ADSL offers available in Portugal vary between 256 kbps and 16 Mb. Besides ADSL there are other modes such as the SDSL (Symmetric DSL)⁶⁷, HDSL (High-data-rate DSL) and VDSL (Very-high-speed DSL).

- Access using coaxial cable – The coaxial cable is the main type of cable used by the cable television industry. It is more expensive than the traditional telephone wire but its features give it a much greater data transportation capacity (greater bandwidth) and less susceptibility to electric and radio interference. The Internet access mode via cable television distribution networks, using a cable modem and an expansion card for the computer, means high access velocities, when compared to those provided using a paired copper wire in dial-up. The maximum speeds of the connections are similar to those of an ADSL access, both downstream and upstream. For the

⁶⁴ Basic access (Basic Rate Access 2B+D) – Access of customers to the PSTN, using a copper pair and providing two 64kbps channels (channels B1 and B2) for voice and data transfers, and a 16kbps D channel for signalling, package data transfer and telemetry. The global throughput is 192kbps.

⁶⁵ Primary access - 30B+D access to the PSTN, with a global throughput of 2Mbps. Both the 30 B voice/data channels and the D signalling channel carry 64kbps.

⁶⁶ Digital technology turning analogue or PSTN telephone lines into lines with greater capacity, making it possible to access the Internet at much higher speeds. Data transmission is done asymmetrically, *i.e.*, the velocity of information reception (downstream) is higher than the sending velocity (upstream), which currently is of 1 Mbps, the bandwidth being managed in an intelligent way. It makes it possible to simultaneously use the Internet and the traditional telephone line (for voice and fax service). An ADSL line provides three information channels: a high debit (1.5 to 8Mbps) downstream channel, a medium high debit duplex upstream channel (16 to 640kbps) and a channel for the telephone service.

⁶⁷ Digital technology in which data transmission is done in a symmetrical way.

Internet service to be provided over a network of this kind, it has to support bi-directionality, i.e., it has to have the capacity of receiving and sending data.

- Access using the third mobile generation – The third generation of mobile services was conceived to deploy the convergences between the fixed and the mobile and between the electronic communications and the multimedia, bringing mobile networks closer to the capacity of the fixed networks and giving mobile users the chance to access multimedia services at up to 2 Mbps. Among the third generation mobile telecommunications systems, highlight goes to the UMTS (Universal Mobile Telecommunications System), in the GHz band, identified as the European standard of the global standard family of the international mobile telecommunications systems (IMT2000). UMTS is a technology that uses the WCDMA⁶⁸ (Wideband Code Division Multiple Access) transmission mode, which is based on multiple access by code division.
- Other means of access⁶⁹ – Other technologies that may be used for Internet access are also noteworthy, namely: access using dedicated connections, access using optical fibre, access using FWA and CDMA radio connections, access using power lines (PLC), access using local radio networks and access using satellite connections.

II.5.2.2 New commercial offers launched in 2005

The year 2005 was characterized by the increased interest of providers regarding offers based on the local loop unbundling.

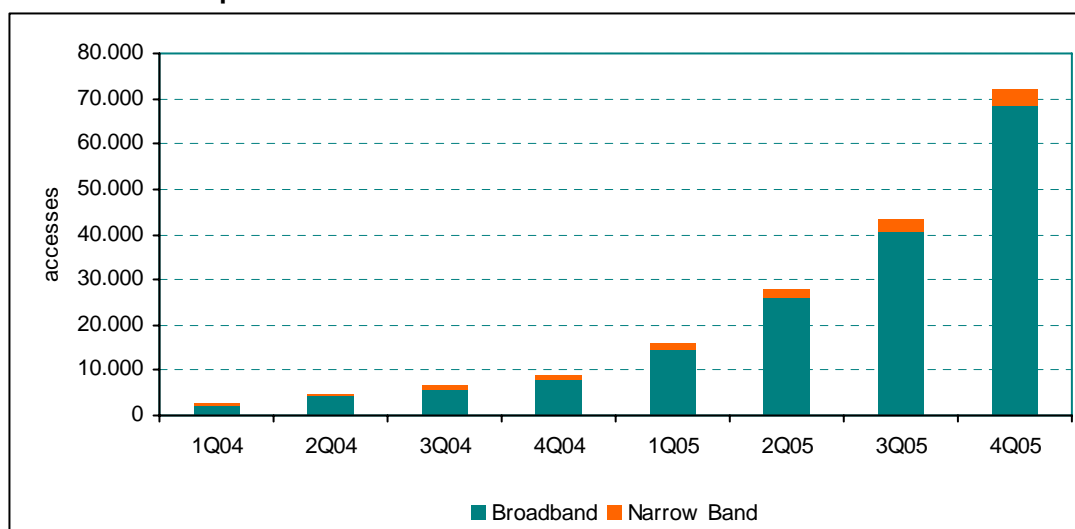
ICP-ANACOM's interventions at the level of the LLU created conditions for greater competition in the broadband market. Using this means, the new operators directly reached the customers' households and developed more competitive voice and broadband offers.

The operators' increased interest can be assessed by the evolution of the amount of unbundled loops, which was, at the end of 2005, about eight times more than that at

⁶⁸ Broadband access system which access discipline to the several users is characterized by the sharing of the same frequency band by using different codes for each one of them.

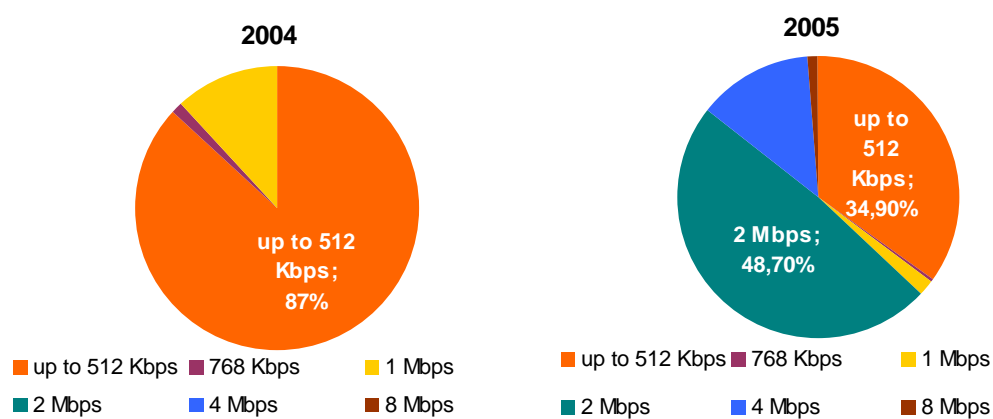
⁶⁹ The 2002 regulation report includes a brief description of the characteristics of the Internet access technologies.

the end of 2004. In December 2004, there were 72,000 unbundled access (of which about 69,000 were broadband), a quarterly growth average of about 70 per cent (next graph).

Graph 74 – Evolution of the number of unbundled accesses

Source: ICP-ANACOM

At the same time, the increased coverage of the *Rede ADSL PT* wholesale offer (bitstream access) contributed, with other factors, to a strong increase of broadband penetration and to the launch of new offers with higher throughputs, as shown on the following graph.

Graph 75 – Evolution of the accesses of the ADSL network by throughput capacity

Source: ICP-ANACOM

In 2005, highlight also goes to the launch of new residential offers based on fixed Internet technologies alternative to ADSL and cable, namely Onitelecom's "ONI220" packages, based on Powerline technology, and AR Telecom's triple-play packages, based on FWA technology.

Lastly, it is important to mention the launch of new offers of Internet access services based on third generation mobile technologies by the three MTS providers.

These mobile operators provided or remade the following offers:

- Optimus's "Kanguru";
- TMN's "GIGA";
- "Vodafone Mobile Connect Card".

which generically include a 3G card (with TMN and Vodafone these cards can also be GPRS) for connection to a portable computer, giving mobile access to broadband Internet (these offers are described in more detail in the sections dedicated to the MTS).

II.5.2.3 Internet Access Service providers

At the end of 2005 there were in Portugal 42 entities registered and authorized to provide Internet Access service (table 74). These entities are also designated ISP - Internet Service Providers.

Among the 42 legally authorized ISPs, 32 were active, two more than at the end of the previous year. Regarding the ten remaining providers, nine still hadn't begun their operations and one ended or suspended the provision of the service.

Table 61 – Number of providers of the Internet Access Service

	2000	2001	2002	2003	2004	2005
Number of Registered Providers	41	51	57	52	38	42
Number of Active Providers	29	30	32	26	30	32

Source: ICP-ANACOM

The following table shows the evolution of the entities authorized for the provision of this service, with highlight to the entries on and exists into/from the market during that same year.

Table 62 – Internet Access Service Providers in 2005

Designation	2004	Entries	Exits	2005
Adianis – Telecomunicações & Multimedia, S.A.	-	X		NA

AR Telecom - Acessos e Redes de Telecomunicações, S.A. ⁷⁰	A			A
AT & T – Serviços de Telecomunicações, Soc. Unip., Lda.	NA			NA
Bragatel — Comp. Televisão por Cabo de Braga, S.A.	A			A
Broadnet Portugal, S.A. ⁷¹	-	X		A
BT Portugal — Telecomunicações, Unipessoal, Lda.	NA			NA
Cable & Wireless Global Limited	NA		X	-
Cabo TV Madeirense, S.A.	A			A
Cabovisão — Sociedade de Televisão por Cabo, S.A.	A			A
CATVP — TV Cabo Portugal, S.A.	A			A
Clixgest — Internet e Conteúdos, S.A. ⁷²	A			A
Colt Telecom – Serviços de Telecomunicações, Unipessoal, Lda.	A			A
Eastécnica V — Comunicações Globais, S.A.	A		X	-
Equant Portugal, S.A.	A			A
Fleximedia — Serviços e Meios Inf. e Comunicação, Lda.	A			A
GC Pan European Crossing España, S.A.	-	X		NA
Hari-técnica Comércio e Indústria de Artigos Eléctricos e Electrónicos, Lda.	NA			A
KPNQwest Portugal — Telecomunicações, Lda.	A			A
Media Capital — Telecomunicações, S.A. ⁷³	A			A
Netacesso — Serviços Internet e Multimédia, Lda.	NA			NA
Netvoice — Comunicações e Sistemas, S.A.	A			A
NFSI – Soluções Internet, Lda.	A			A
Nortenet — Sistemas de Comunicação, Lda.	A			A
Novis Telecom, S.A. ⁷⁴	A			A
Onitelecom — Infocomunicações, S.A.	A			A
Pluricanal Leiria – Televisão por Cabo, S.A.	A			A
Pluricanal Santarém – Televisão por Cabo, S.A.	A			A
PT Acessos de Internet WI-FI, S.A.	A			A
PT Prime — Soluções Empresariais de Telecomunicações e Sistemas, S.A.	A			A
PT.Com – Comunicações Interactivas, S.A.	A			A
Radianz Portugal, Soc. Unipessoal, Lda. (*)	NA			NA
Radiomóvel – Telecomunicações, S.A.	-	X		A
Refer Telecom – Serviços de Telecomunicações, S.A.	A			A
Robot — Telecomunicações, Projectos e Serviços, Lda.	A			A
Swisscom EPWLAN – Serviços de Internet, S.A.	A			A
Telecorreio — Serv. Avançados de Telecomunicações, Lda.	NA			NA

⁷⁰ In September 2005, Jazztel Portugal – Serviços de Telecomunicações, S.A. changed its name to AR Telecom – Acessos e Redes de Telecomunicações, S.A..

⁷¹ After the beginning of 2005, Broadnet Portugal, S.A started to provide the Data Transmission Service/Internet Access Service previously provided by EASTÉCNICA V - Comunicações Globais, S.A. (Broadnet Portugal, S.A holds 100% of Eastécnica V).

⁷² Following Sonaecom capital increase through the issuing of shares held by France Telecom, after October 2005 the France Telecom Group ended its direct participation in the capital of Clixgest — Internet e Conteúdos, S.A. (were it had a 43 per cent stake) with Grupo Sonae having increased its share in the capital of that company in the same proportion.

⁷³ Media Capital, SGPS is an indirect shareholder of Media Capital – Telecomunicações, S.A. (which capital is totally held by the sub-holding Meglo – Media Global, SGPS, S.A.). In November 2005, the Spanish group Prisa acquired 33 per cent of the capital of Grupo Media Capital, SGPS, S.A., becoming its major shareholder.

⁷⁴ Following Sonaecom's capital increase through the issuing of shares held by France Telecom, after October 2005 the France Telecom Group stopped participating directly in the capital of Novis (where it had a 43 per cent share) with Grupo Sonae having increased its share in the capital of that company in the same proportion.

TeleMilénio, Telecomunicações, Sociedade Unipessoal, Lda. (Tele2)	A			A
TVTel Grande Porto — Comunicações S.A.	A			A
Uunet — Portugal, Sociedade Unipessoal, Lda.	A			A
Via Net.Works Portugal – Tecnologias de Informação, S.A.	A			A
Vipvoz – Serviços de Telecomunicações Digitais, Lda.	-		X	NA
Vodafone Portugal — Comunicações Pessoais, S.A.	A			A
Worldbroker Telecomunicações – Sociedade de Telecomunicações e Multimédia, Lda.	-	X		NA
WTS — Redes e Serviços de Telecomunicações, S.A.	NA			NA
Total activas	30	1	1	32
Total não activas	8	4	1	10
Total geral	38	5	2	42

Source: ICP-ANACOM

A — Active NA — Not Active X – Entry or Exit

(*) Entity authorized for the provision of the Internet access service with only data transmission service operation activities

The following table lists the operators of cable distribution networks that were offering broadband Internet services using cable modem access at the end of 2005.

Table 63 – Cable distribution network operators providing Internet Access Service

Bragatel – Companhia de TV por Cabo de Braga, S.A.
Cabo TV Madeirense, S.A.
Cabovisão – Soc. de Televisão por Cabo, S.A.
CATVP – TV Cabo Portugal, S.A.
Pluricanal Leiria – Televisão por Cabo, S.A.
Pluricanal Santarém – Televisão por Cabo, S.A.
TV Tel Grande Porto – Comunicações, S.A.

Source: ICP-ANACOM.

The following table shows the providers offering broadband Internet services using ADSL access.

Table 64 – Internet Access Service Providers with ADSL access offer

CATVP – TV Cabo Portugal, S.A.
Clixgest – Internet e Conteúdos, S.A.
Jazztel Portugal – Serviços de Telecomunicações, S.A.
KPNQwest Portugal – Telecomunicações, Lda.
Netvoice – Comunicações e Sistemas, S.A.
NFSI – Soluções Internet, Lda.
Nortenet – Sistemas de Comunicação, S.A.
Novis Telecom, S.A.
Onitelecom – Infocomunicações, S.A.
PT Acessos de Internet WI-FI, S.A.
PT Prime – Soluções Empresariais de Telecom. E Sistemas, S.A.
PT.Com – Comunicações Interactivas, S.A.
Robot — Telecomunicações, Projectos e Serviços, Lda.
TVTel Grande Porto — Comunicações S.A.
Via Net.Works Portugal – Tecnologias de Informação, S.A.
Vodafone Portugal – Comunicações Pessoais, S.A.

Source: ICP-ANACOM

Regarding the FWA technology, Table 65 identifies the providers licensed to provide Internet Access Services using this technology in the year 2005.

Table 65 – Internet Access Service Providers with FWA offer

Jazztel Portugal – Serviços de Telecomunicações, S.A.
Novis Telecom, S.A.
Onitelecom – Infocomunicações, S.A.
Robot — Telecomunicações, Projectos e Serviços, Lda.
Vodafone Portugal – Comunicações Pessoais, S.A.

Source: ICP-ANACOM

It should be highlighted that, besides the providers of Table 65, providers with licences of a national scope for the International Mobile Telecommunications Systems (IMT2000/UMTS) are also entitled to provide Internet Access Services.

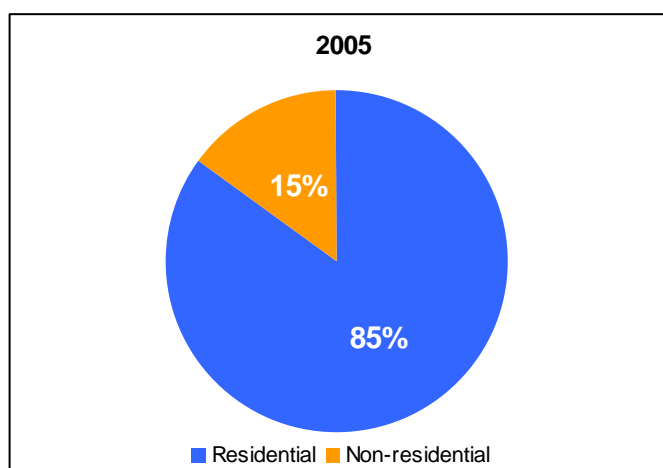
II.5.3 Internet Access Service's customer and usage profiles

Below are some of the characteristics of the Internet's client and usage.

II.5.3.1 Internet Access Service's customer profile

Residential customers are the majority of the Internet Access Service's customers.

Graph 76 – Customers of the Internet Access Service – Residential customer vs. Non-residential customer



Source: ICP-ANACOM

According to the Survey on the consumption of broadband Internet in 2005⁷⁵, the residential customer of the Internet access service lives mainly in areas with more population, in households with a greater number of residents and had an above-the-average income.

⁷⁵ Survey on the consumption of broadband Internet access in Portugal, 2005. The universe defined for this survey was that of individuals of both genders, aged 18 years or older, residing in Mainland Portugal and in the Autonomous Regions of Madeira and Azores. The sample's size was defined so that the maximum error was not higher than 4 per cent for broadband users and 1.5 per cent for the main results (assuming a significance degree of 95 per cent). The sample was stratified by region and habitat, based on the latest General Population Census: 2001 Census. 4,225 interviews were made, including 1,099 interviews to broadband users. The inquiry method was the telephone interview (CATI). The data collection and codification work was performed by Tns Euroteste between 19 December 2005 and 23 January 2006.

Table 66 – Profile of households with Internet

Habitat:	Dec. 2005
Less than 2,000 inhabitants	27.7%
Between 2,000 and 9,999 inhabitants	36.1%
Between 10,000 and 99,999 inhabitants	43.0%
More than 100,000 inhabitants	43.6%
Household Size:	
1 person	9.8%
2 people	19.6%
3 people	46.2%
4 or more people	48.2%
Household Income:	
Up to 349 Euros	0.8%
Between 350 and 749 Euros	12.4%
Between 750 and 1499 Euros	37.2%
Between 1500 euros and 2499 Euros	63.0%
More than 2500 euros	78.1%

Source: ICP-ANACOM/ Survey on the consumption of broadband Internet access in Portugal, 2005

On the other hand, about 74 per cent of students have Internet access from their homes.

Regarding the non-residential segment, data made available by the last Survey on the use of information and communication technology by companies⁷⁶, by INE (National Statistics Institute), show that more than 80 per cent of companies with ten or more workers had Internet access in the first quarter of 2005. Regarding size, only companies with 10 to 49 persons had figures slightly below 80 per cent (78.6 per cent), while the remaining ones had figures above 95 per cent. Regarding economic activity, only the construction and manufacture sectors had figures below 90 per cent – 64 and 77 per cent, respectively.

The following box shows the estimated results of a multinomial model for the characterization of the Internet residential customer.

⁷⁶ Survey made in 2005 by INE, with the cooperation of UMIC – Agência para a Sociedade do Conhecimento, IP (Knowledge Society Agency), following Eurostat's methodological recommendations. The sample is made up of 2,075 companies of the reference universe of the Harmonized Survey to Companies, being made up of companies with 10 or more employees and which economic activity is framed by one of the following CAE (economic activity classification) Version 2.1 sections: D, F, G, H (only groups 551 and 552), I, K, O (only groups 921 and 922). The survey's reference period is January 2005.

Qualitative dependent variable model applied to the characterization of the residential Internet user

This model was estimated based on data from the Survey on the consumption of broadband Internet Access in Portugal.

The estimated model was the multinomial logit (Table 67):

$$\text{odds}(\text{have Internet connection}) = \exp(x_j b + b_0),$$

where x_j is the vector of explaining variables (e.g., age, income, social class) and b is the vector of ratios to be estimated (with b_0 constant).

The interpretation of the odds is the following: $\text{odds} = p/(1-p)$ where p is the probability of the event. It is also possible to convert the odds into probabilities:

$$\text{prob}(\text{have an Internet connection}) = \exp(x_j b + b_0) / [1 + \exp(x_j b + b_0)].$$

In the multinomial logistical regression there are three results: 'no Internet connection', 'narrow band connection' and 'broadband Internet connection'. The chosen base result is the 'no Internet connection'.

From the estimation of the model it was possible to observe the following results:

Table 67 – Results of the estimation of the Logit multinomial model

variable:	Choice of narrow band			*	Choice of broadband		
	Ratio of cond. odds	Standard deviation ⁺	Marginal prob. ⁺⁺		Ratio of cond. odds	Standard deviation ⁺	Marginal prob. ⁺⁺
North*	2.15	0.63	0.05	*	0.46	0.10	-0.04
Centre*	1.91	0.59	0.04	*	0.63	0.15	-0.02
Lisbon and Tagus valley *	2.66	0.81	0.06		1.15	0.27	0.00
Alentejo	2.64	0.97	0.07	*	0.33	0.12	-0.06
Algarve	2.57	0.88	0.06		0.79	0.22	-0.01
Azores	1.42	0.51	0.02		0.83	0.25	-0.01
Madeira							

<i>Less than 100 inhabitants</i>							
100-500 inhabitants	0.96	0.23	0.00		0.98	0.26	0.00
500-1000 inhabitants	1.10	0.31	0.01		0.85	0.28	-0.01
1000-2000 inhabitants	1.04	0.30	0.00		1.47	0.47	0.02
2000-5000 inhabitants	1.28	0.33	0.01	*	1.88	0.53	0.03
5000-10000 inhabitants	0.92	0.27	-0.01	*	2.34	0.70	0.04
10000-30000 inhabitants	1.17	0.29	0.01	*	2.47	0.66	0.04
30000-80000 inhabitants	1.17	0.34	0.01	*	4.02	1.18	0.07
80000-125000 inhabitants	1.02	0.33	0.00	*	3.35	0.98	0.06
125000-500000 inhabitants	0.97	0.37	-0.01	*	3.58	1.26	0.06
Over 500000 inhabitants	0.89	0.34	-0.01	*	2.50	0.89	0.04
Gender	1.68	0.20	0.03	*	2.56	0.28	0.04
Employees	1.08	0.14	0.00		1.19	0.15	0.01
<i>Less than 25 years old</i>							
25-40 years old	0.91	0.15	0.00	*	0.68	0.11	-0.02
40-55 years old*	0.65	0.11	-0.03	*	0.53	0.08	-0.03
55-65 years old*	0.42	0.09	-0.05	*	0.33	0.07	-0.05
More than 65 years*	0.12	0.04	-0.13	*	0.07	0.02	-0.12
Households with 10 year old children	0.98	0.14	0.00		0.98	0.13	0.00
Households with 11-17 year old children	1.31	0.18	0.02	*	1.89	0.24	0.03
Households with children aged above 17 years old *	1.57	0.19	0.03	*	1.73	0.20	0.02
<i>Upper class</i>							
Upper middle class	1.47	0.77	0.02		1.38	0.58	0.01
Middle class	1.06	0.52	0.01		0.51	0.20	-0.03
Lower middle class	0.62	0.32	-0.03	*	0.32	0.13	-0.05
Lower class*	0.25	0.14	-0.08	*	0.11	0.06	-0.10
<i>Below average education</i>							
Up to average education*	2.94	0.58	0.06	*	7.04	1.73	0.09
Incomplete higher education*	9.63	2.18	0.13	*	24.61	6.63	0.15
Complete higher education *	15.97	3.49	0.16	*	38.32	10.16	0.16
Wald χ^2 (df=64)	1082.82						
Pseudo R ²	0.32						
Observations	4596						

Source: ICP-ANACOM

Significant ratios at 5% are marked with *. The standard deviations are strong regarding a general form of heterocedasticity. Dummy base variables are in italic.

***The standard deviation of the odds ratio.**

****Marginal probabilities are reckoned using explicative variables.**

From the analysis of the estimated model's table, one concludes that:

- Algarve, Lisbon and Tagus Valley, and Alentejo have greater probabilities⁷⁷ of having Internet. Although there aren't major differences between regions regarding narrow band Internet accesses, there are great differences regarding broadband. Lisbon and Madeira stand as tie regions were the probability of

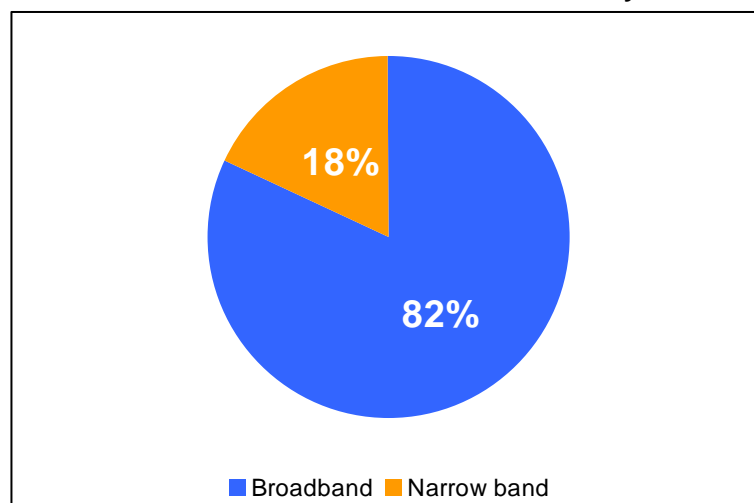
having broadband Internet is higher. North and Alentejo are the regions with lower odds.

- Having narrow band Internet does not seem to depend on the size of the location of the residence (in inhabitants). Having broadband in the household seems to depend on this variable, although in a non-linear way. The probability of having broadband is higher for habitats of 30,000 to 80,000 inhabitants and smaller for the small size ones (less than 2,000 inhabitants).
- The odds ratios of having Internet are greater for men than for women.
- Surveyed younger people, with higher education and from an upper social class have greater odds of having Internet, both narrow band and broadband. Nevertheless, the odds ratios are higher for broadband, which suggests that the latter is more sensitive to demographic factors than having Internet. For example, 'having completed secondary education' is associated to three times more odds of having narrow band Internet, while for broadband, this odd increases seven times (which corresponds to a 9 per cent increase of probabilities).

II.5.3.2 Internet Access Service's usage profile

Most of the users of the Internet Access Service use broadband. At the end of 2005, the proportion of broadband customers in the overall customers was already above 80 per cent.

Graph 77 – Rates of Internet Access Service customers by bandwidth – 2005



Source: ICP-ANACOM

According to INE/Survey on the use of information and communication Technologies by families⁷⁸, about 59 per cent of users access the Internet every day or almost every day.

Regarding the location where they use it, 61 per cent access it from home and 48 per cent at their job. In third place is school or university, with 24 per cent.

According to this study from INE, among the main purposes of using the Internet, highlight goes to sending/receiving e-mail, research of information on goods and services and reading/downloading online newspapers and magazines.

Table 68 – Purposes of Internet use

Activities	
Communication	
To send/receive e-mails	80.5%
To call via Internet/videoconference	10.0%

Other (access to chats, etc.)	38.9%
Information research and use of online services	
To search goods and services	80.8%
To use travelling and lodging services	32.8%
To listen to radio/watch television over the Internet	28.1%
To play or download games, images, music	44.0%
To download software	27.6%
To read/download online newspapers/magazines	51.3%
To search for job or send applications/curricula	12.4%
Purchasing and selling goods and services, bank services	
To use bank services using the Internet – Internet banking	26.2%
Other financial services (e.g., buying shares)	3.3%
To purchase/order goods or services (excluding financial services/shares)	11.5%
To sell goods or services (e.g., through auctions)	2.1%
Connection to civil services	
To obtain information on the websites of the Public Administration	36.7%
To download official forms	25.8%
To fill and send online official forms	28.0%
Using the Internet to interact with public services	43.8%
Education and training	
To pursue formal education activities	18.8%
To attend post-formal education courses	4.1%
To attend courses specifically related to job opportunities	1.9%
Health-related activities	
Search information on health issues (lesions, diseases, nutrition, etc.)	31.3%

Source: INE/ Survey on the use of information and communication technologies by families, 2005⁷⁸

II.5.3.3 Barriers to service subscription

The following table shows the main barriers to having Internet at home.

The main reason for not subscribing to the Internet is lack of interest or lack of utility (38.3 per cent). In second place is not having a computer (34 per cent). The service's price is also a barrier to subscribing (8.6 per cent).

Table 69 – Main barrier to having Internet connection at home

No need / no interest	38.3%
Has no computer	34.0%
Price is too high	8.6%
Has no time	3.5%
Has access at other locations	2.5%

Source: Survey on the consumption of broadband in Portugal, 2005

II.5.4 The evolution of the Internet Access Service in 2005

Below is the evolution of the service's geographical availability, penetration, usage level, prices, quality of service, innovation, and development of competition, in 2005.

II.5.4.1 Geographical availability of this service

Internet Access Service was, in 2005, available in almost all the national territory. Particularly, the dial-up access is available in the entire public switched telephone network.

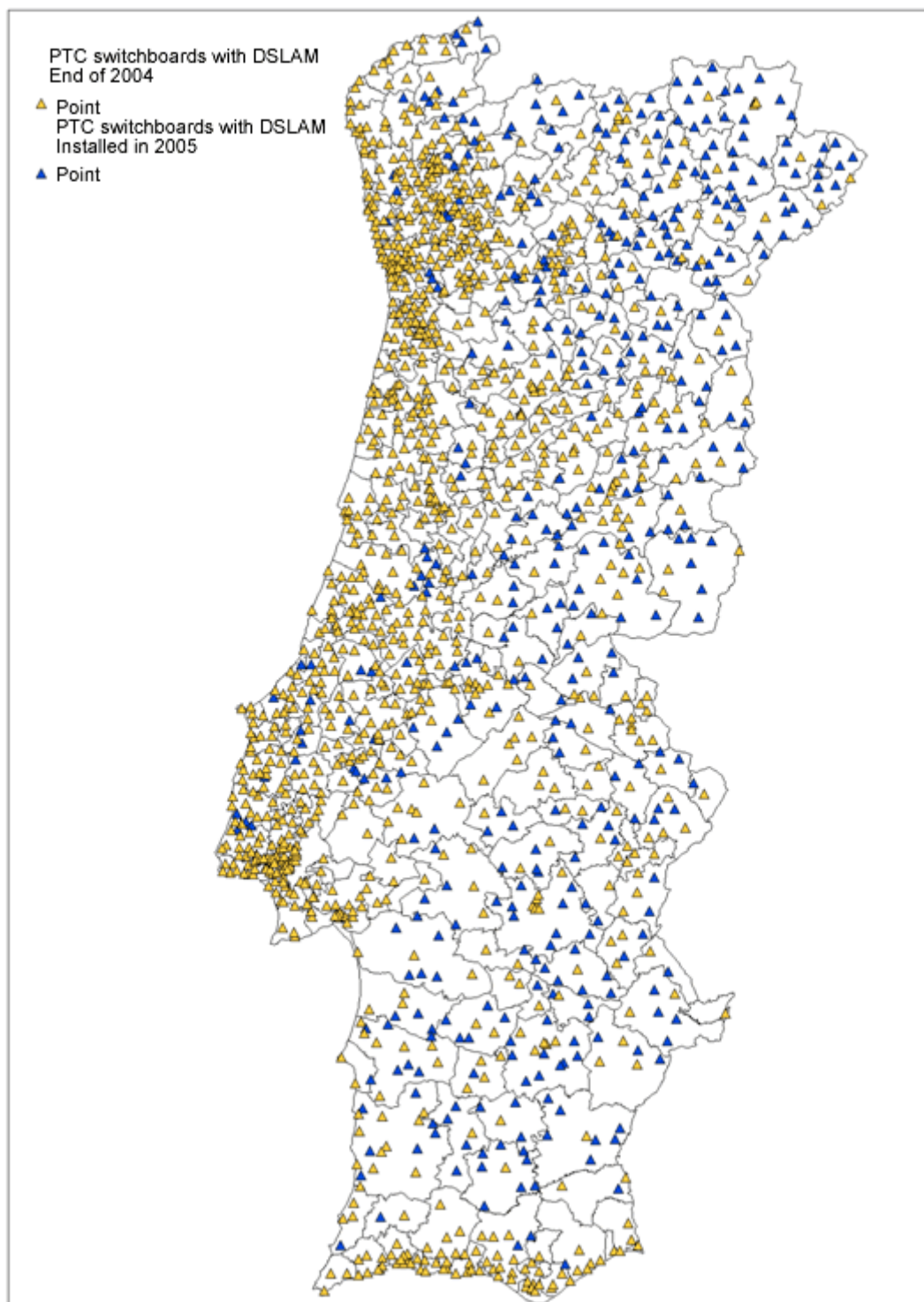
The availability of broadband offers depends on the existence of public switched telephone network switchboards with DSLAM (digital subscriber line access multiplexer) or on existing cable TV distribution networks prepared to provide broadband.

At the end of 2005, there were 1,726 switchboards with DSLAM, 93 per cent of all PT's switchboards. This number of switchboards is about 37 per cent higher than that of the end of the previous year. It should be stressed out that these switchboards serve more than 90 per cent of the customers of the public telephone service at a fixed location,

These infrastructures are concentrated in the regions of Greater Lisbon and Greater Porto, in the North coast and in Algarve. In the interior of the country, the density of switchboards with DSLAM is lower, as is the population density. However, there was a considerable improvement in the country's inner areas.

In the Autonomous Regions of Madeira and the Azores the percentages of switchboards with DSLAM are already quite high, over 97 and 96 per cent, respectively.

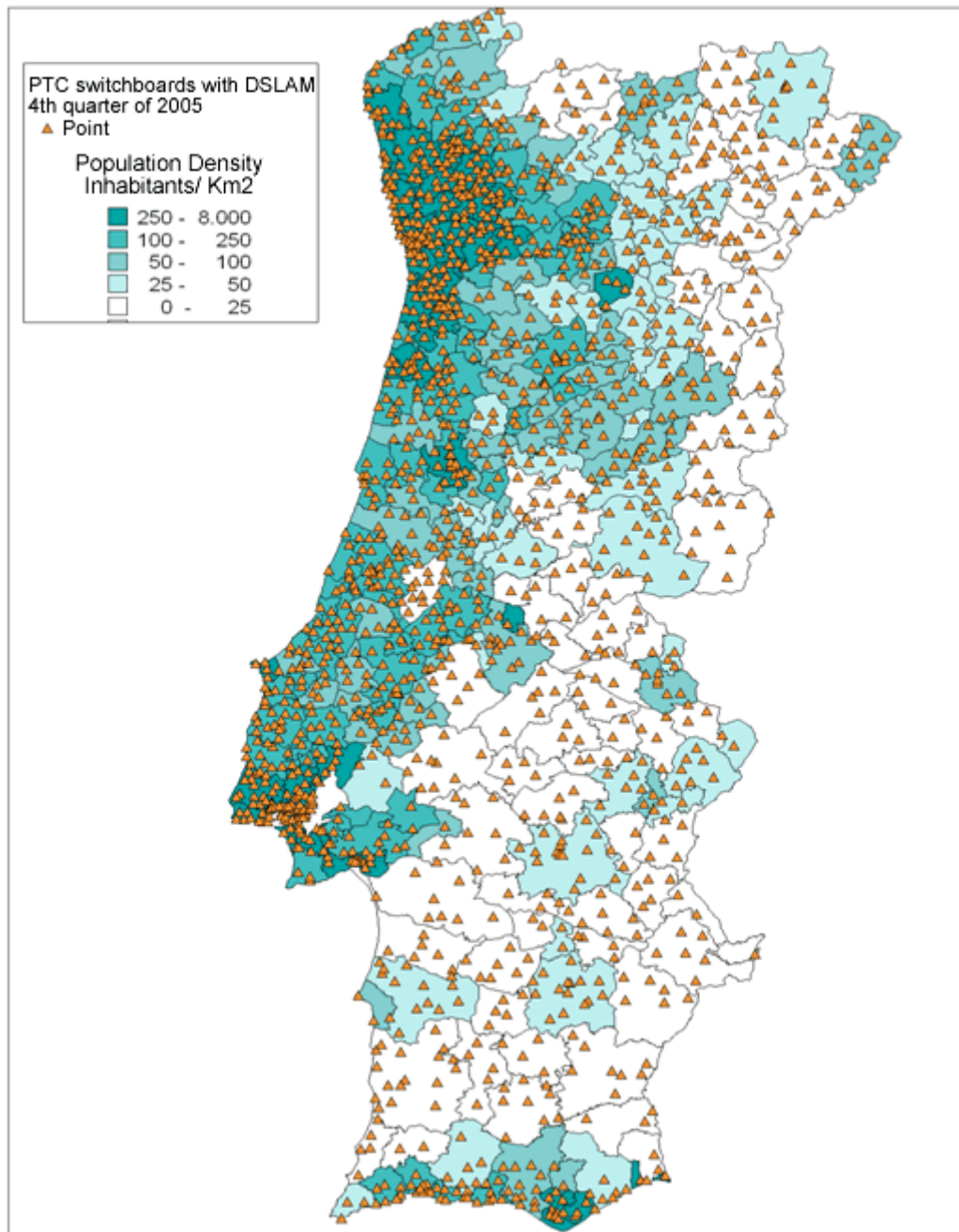
Graph 78 – Distribution by municipality of switchboards with DSLAM at the end of 2004 and 2005



Source ICP-ANACOM

It should be underlined that there are exceptional cases where it may not be possible to provide ADSL services over a given loop, due to its physical characteristics (namely the loop's length, section and conservation state).

Graph 79 – Distribution by municipality of switchboards with DSLAM in September 2005 and population density (Mainland Portugal)



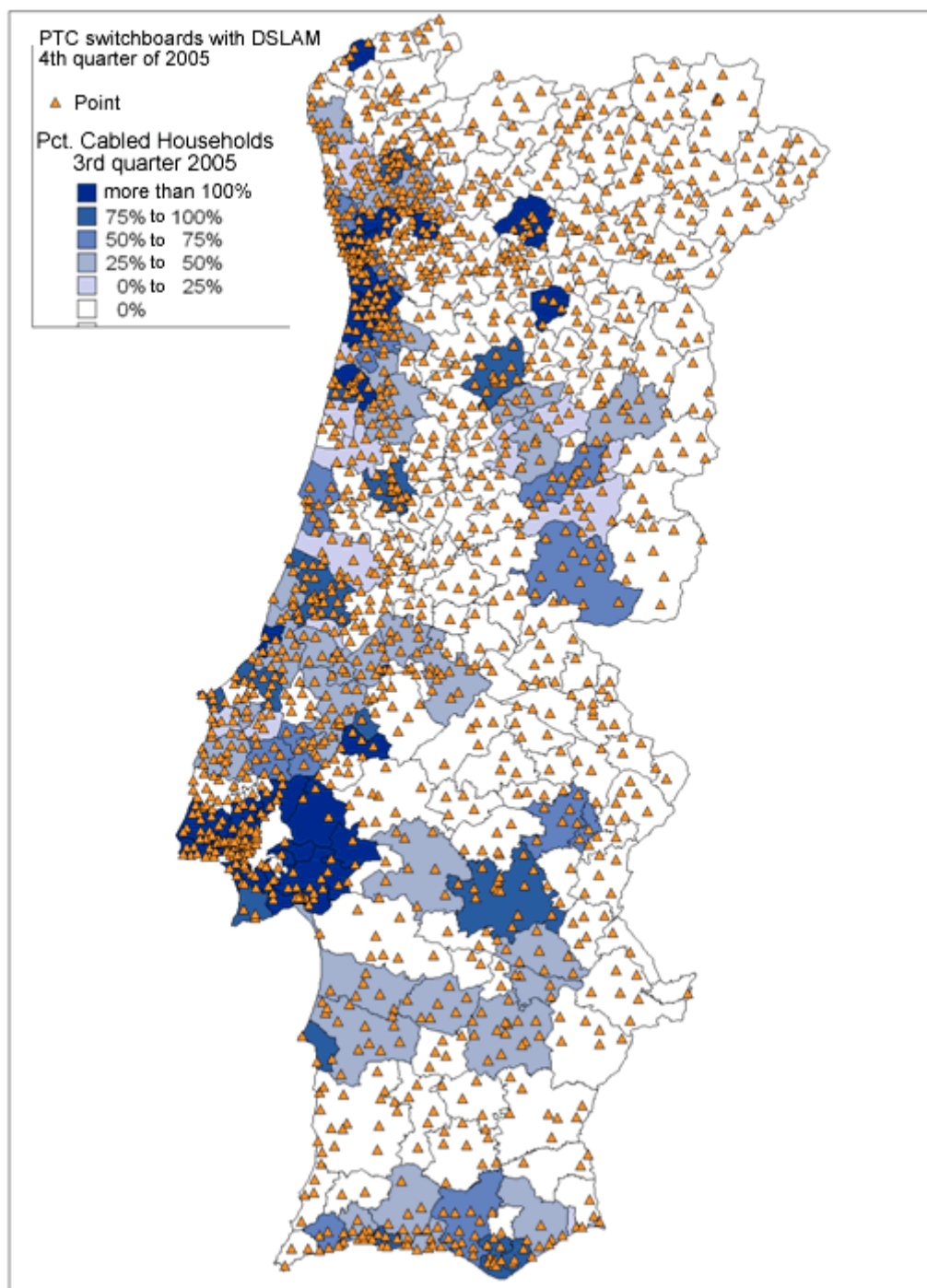
Source: ICP-ANACOM

Regarding broadband Internet access using cable modem, the mainland's cable

distribution networks are concentrated in the Greater Lisbon and Greater Porto areas.

In the case with the autonomous regions, Madeira has a rate of cabled households above 93 per cent, while in the Azores the figure for this indicator is 60 per cent. The rate in the Autonomous Region of Madeira is explained by the Protocol established on 6 August 2004 between the Government of the Republic, the Regional Government of Madeira, ICP-ANACOM and Cabo TV Madeirense, S.A., with the objective of guaranteeing the conditions needed for the citizens of the Autonomous Region of Madeira to be able to have access, for free, to the broadcasts of the general non-conditioned access channels available in the Mainland, namely, RTP1, RTP2, SIC and TVI.

Graph 80 – Distribution by municipality of switchboards with DSLAM in 2005 and rate of cabled households (Mainland Portugal)



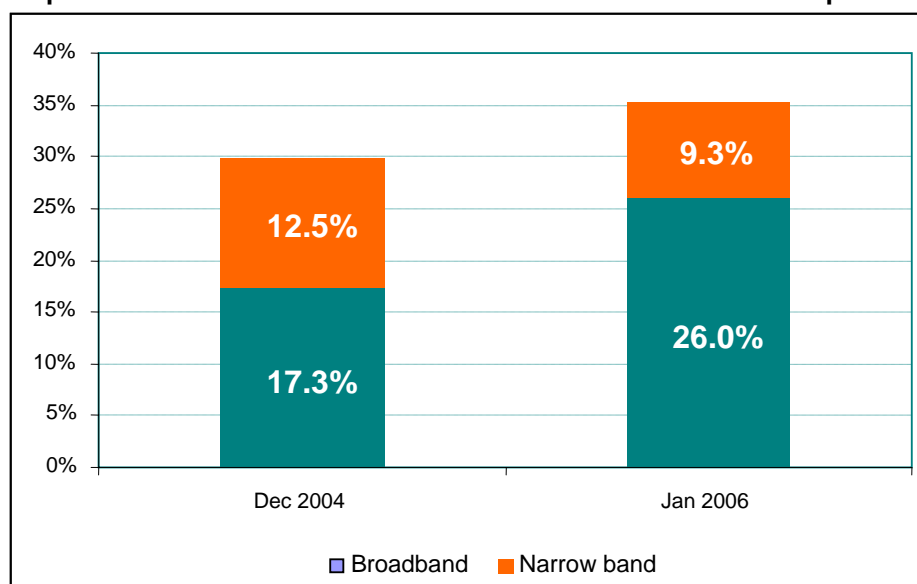
Source: ICP-ANACOM

Considering the previously mentioned data, broadband access density follows the territory's population density.

II.5.4.2 Service's penetration

About 35 per cent of Portuguese households have internet connection, 5 per cent more than at the end of 2004. Broadband became the preferential means of Internet access, being in about 26 per cent of homes, 8.7 per cent more than in the previous year.

Graph 81 – Evolution of the Internet Access Service's residential penetration rate



Source: ICP-ANACOM, Survey on the consumption of broadband – January 2006 and December 2004

In the residential segment, the data provided by the Surveys on the consumption of broadband Internet in Portugal, promoted by ICP-ANACOM in December 2004⁷⁹ e 2005, show regional asymmetries in Internet penetration.

Indeed, in spite of the generalized growth between 2004 and 2005, the Lisbon and Algarve areas have much higher rates than regions such as the Azores or Alentejo. However, the approximation between the maximum and minimum rates should be stressed; the difference between the region with greater penetration and the region with lowest penetration went from 16.5 per cent in 2005 to 13.4 per cent in 2005.

Table 70 – Internet connection by households, by NUTS II regions

Regions	2004	2005
North	24.4%	30.6%
Centre	25.0%	35.9%
Lisbon and Tagus Valley	36.5%	42.5%

Alentejo	20.8%	30.0%
Algarve	26.8%	40.1%
Azores	21.1%	29.1%
Madeira	24.0%	32.5%

Source: ICP-ANACOM, Survey on the consumption of broadband Internet in Portugal, 2004 and 2005

II.5.4.3 Service's usage level

Below is the evolution of the service's usage levels measured in terms of customers, accesses and revenues.

II.5.4.3.1 Customers: narrow band/broadband

As shown on the following table, by the end of 2005 there were about 1.4 million customers of the Internet Access Service, 19 per cent more than at the end of 2004.

There was also a transition from narrow band to broadband, this type of access reaching 1.2 million customers at the end of 2005, 43 per cent more than in the same quarter of the previous year. Regarding dial-up access, in December 2005 there were around 271,000 customers, a little more than two thirds of the customers at the end of the previous year. Thus the proportion of broadband clients in the overall number of clients reached 82 per cent, a figure that is 14 per cent above that of 2004.

Table 71 – Total number of clients (accumulated)

	2000	2001	2002	2003	2004	2005
Customer's total	n.a.	n.a.	n.a.	n.a.	1,243,124	1,482,613
Broadband access	27,215	99,316	262,789	503,128	848,769	1,212,034
Dial-up access	n.a.	n.a.	n.a.	n.a.	394,355	270,578

Source: ICP-ANACOM

Unit: 1 customer

II.5.4.3.2 Customers: ADSL/cable modem

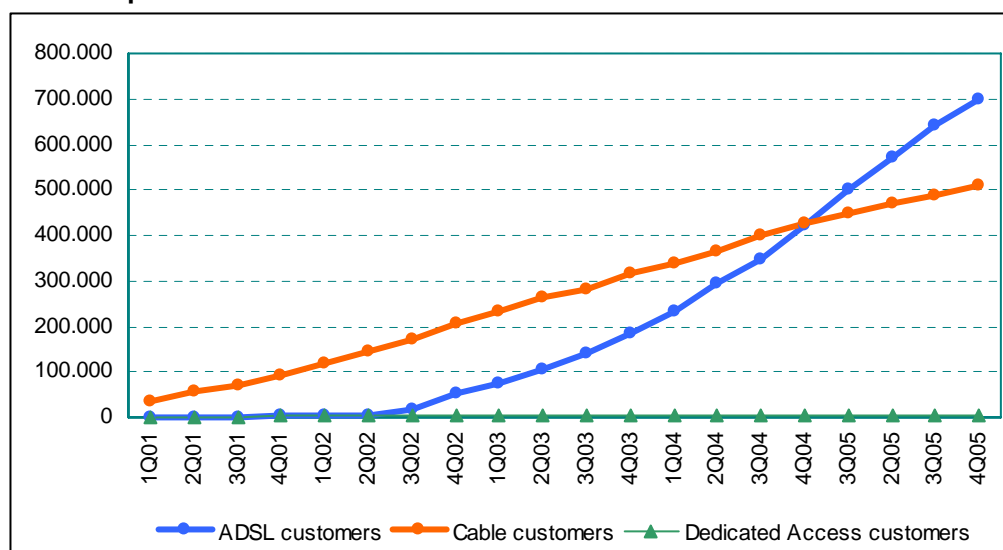
ADSL is the main responsible for the growth of Internet in Portugal in 2005. Between the end of 2004 and the end of 2005, three out of each four new broadband customers chose ADSL access, resulting in a year-to-date growth of 66 per cent. The predominance of ADSL is explained by the greater geographical availability of this kind of access and by the deployment of offers based on the local loop unbundling.

Regarding access using cable modem, although it is no longer the predominant access technology, it still registers high growth rates. In 2005, Internet access using cable modem had an annual growth rate above 20 per cent.

Table 72 – Number of clients of broadband access modes

	2000	2001	2002	2003	2004	2005	Var. 2005/2004
Customer's total	27,215	99,316	262,789	503,128	848,769	1,212,034	42.8%
ADSL access	n.a.	2,886	52,005	184,344	420,631	697,652	65.9%
% of broadband total	n.a.	2.9%	19.8%	36.6%	49.6%	57.6%	-
Cable modem access	2,154	93,721	207,486	315,577	425,308	511,635	20.3%
% of broadband total	92.4%	94.4%	79.0%	62.7%	50.1%	42.2%	-
Dedicated access	2,061	2,709	3,298	3,207	2,830	2,747	-2.9%
% of broadband total	7.6%	2.7%	1.3%	0.6%	0.3%	0.2%	-

Source: ICP-ANACOM

Graph 82 – Evolution of the number of broadband access customers

Source: ICP-ANACOM

Residential/Non-residential customers

At the end of 2005 there about 1.25 million active residential customers of the Internet access service, a figure about 16 per cent higher than that of the end of 2004. During the same period, there were about 228,000 non-residential customers, 44 per cent more than in the end of 2004.

Table 73 – Number of residential and non-residential customers in 2004 and 2005

	2004	2005
Total customers	1,243,124	1,482,613
Residential customers	1,084,073	1,254,307
Residential customers	159,051	228,305

Source: ICP-ANACOM

II.5.4.3.3 Broadband accesses

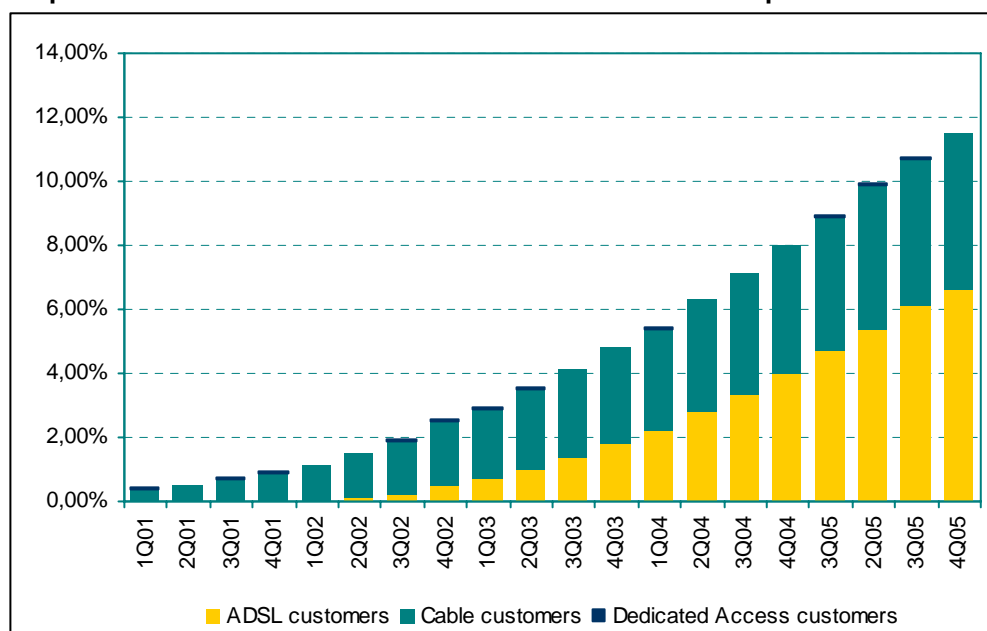
The following table shows the evolution of the number of broadband access in Portugal, where the previously mentioned ADSL predominance is already noticeable.

Table 74 – Number of broadband accesses

	2000	2001	2002	2003	2004	2005
Total accesses	27,831	99,590	263,932	503,967	852,759	1,219,384
ADSL accesses	n.a.	2,886	52,810	184,860	424,169	706,665
Cable modem accesses	25,154	93,836	207,486	315,577	425,308	509,501
Dedicated accesses	2,677	2,868	3,636	3,530	3,282	3,218

Source: ICP-ANACOM

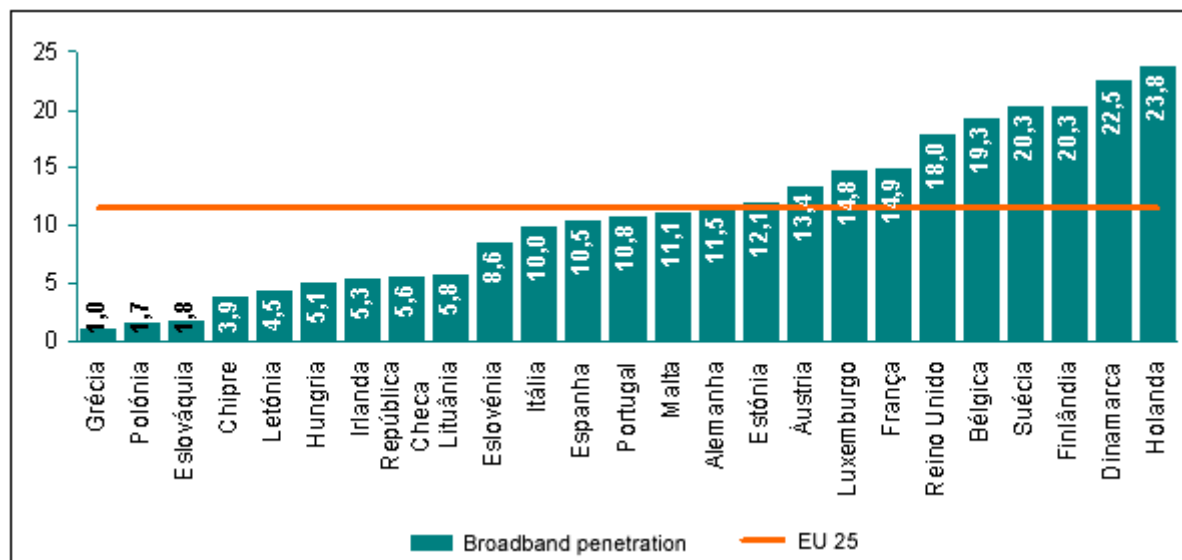
The following graph shows the evolution in the number of accesses per 100 inhabitants in Portugal since 2000. At the end of 2005 this indicator was at 11.6 per cent, 4.5 per cent above the figure for the same quarter of the previous year.

Graph 83 – Evolution in the number of broadband accesses per 100 inhabitants

Source: ICP-ANACOM

According to the European Commission, the penetration rate of broadband accesses in Portugal reached 10.8 per 100 inhabitants in the 3rd quarter of 2005. This figure was close to the EU average (11.5 per cent).

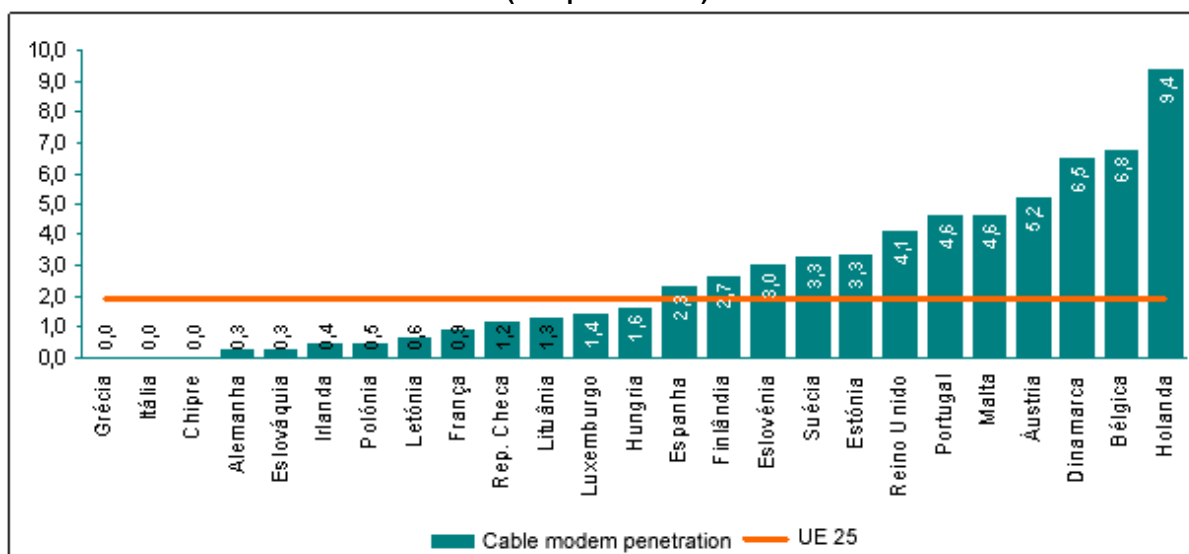
**Graph 84 – Number of broadband accesses per 100 inhabitants in the EU25
(3rd quarter 2005)**



Source: European Commission, 11th Implementation Report.

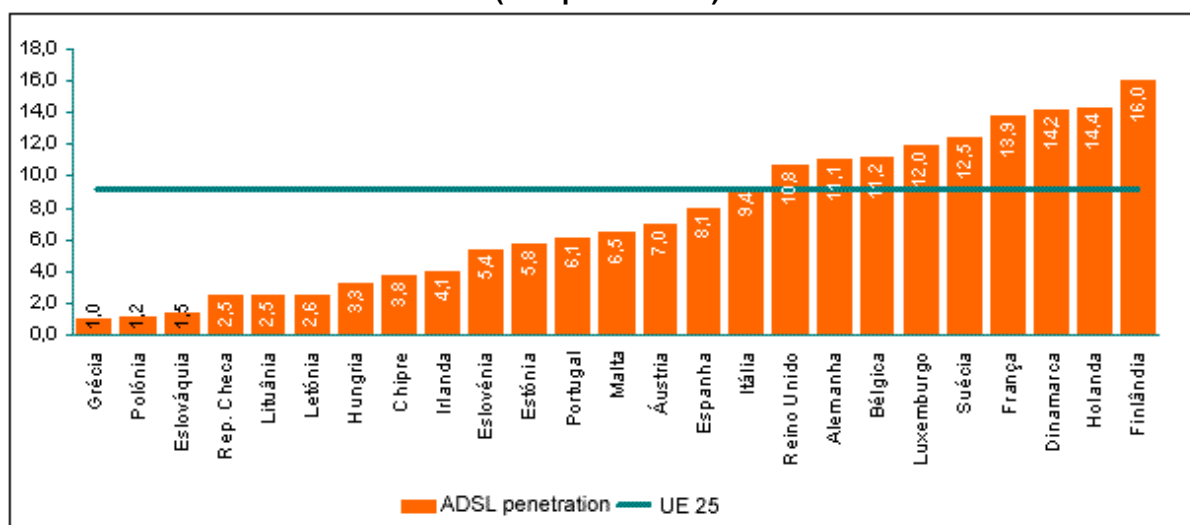
It should be mentioned that cable modem access penetration is considerably high in Portugal (4.6 per cent) when compared to the EU average (1.9 per cent). Regarding ADSL, in spite of its fast growth, its penetration in Portugal is about 3.1 per cent below the European average.

**Graph 85 – Number of cable modem accesses per 100 inhabitants in the EU25
(3rd quarter 2005)**



European Commission, 11th Implementation Report.

Graph 86 – Number of broadband accesses using ADSL per 100 inhabitants in the EU25 (3rd quarter 2005)



Source: European Commission, 11th Implementation Report.

II.5.4.3.4 Sector's revenues⁸⁰

In 2004, the revenues of the Internet access service registered, as in previous years, a high growth rate. It's noteworthy mentioning the strong growth of revenues from the ADSL access, which in the year 2004 were two and a half times higher than in the previous year.

Table 75 – Sector's revenues

	2000	2001	2002	2003	2004
Internet access service	82,139	140,429	220,825	302,011	362,677
Dial-up access	n.a.	80,228	119,033	120,287	78,099
ADSL access	n.a.	1,178	12,172	54,482	134,984
Cable modem access	n.a.	15,106	44,803	67,574	105,160
Other types of Internet access	n.a.	24,196	25,646	31,806	32,628
Other revenues	n.a.	19,721	19,170	27,863	11,807

Source: ICP-ANACOM

Unit: Thousand euros

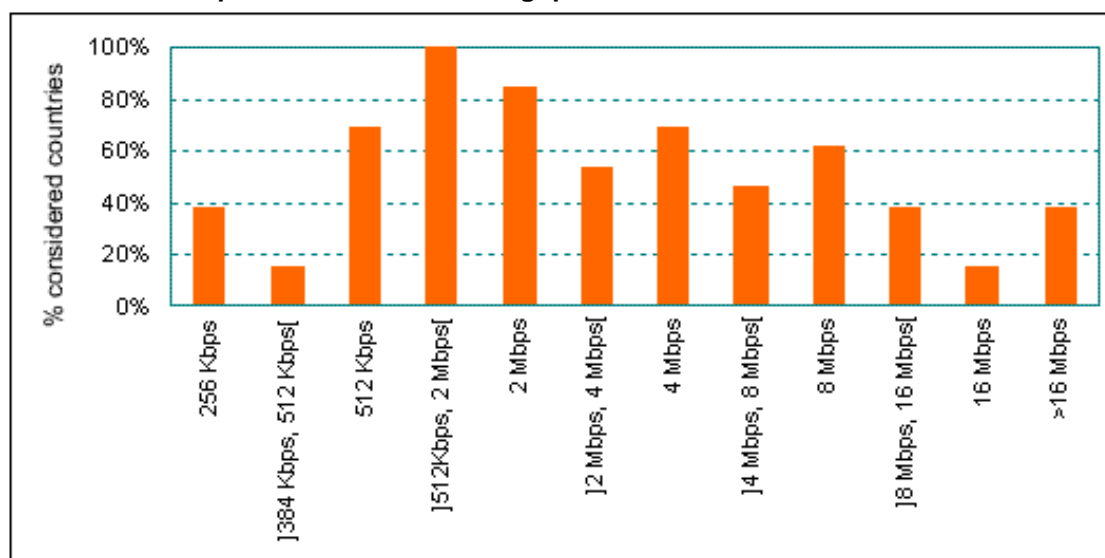
II.5.4.4 Diversity and innovation in broadband offers

Based on the fixed broadband residential offers available in 13 European countries⁸¹, we intended to verify up to what extent did the entities providing broadband access services in Portugal were satisfying consumers' needs in terms of the offers' availability and diversity.

It was registered that in Portugal, as with the remaining countries, there are ADSL-based (LLRO and PTC's wholesale offer) and cable modem-based offers. Furthermore, there are package offers in Portugal that include Internet using powerline (Onitelecom) and FWA (AR Telecom) technologies. In other countries offers were identified using optical fibre (e.g. Sweden). In Ireland there is an FWA offer.

Regarding throughput speeds, the download throughputs offered in Portugal are similar to those of other countries. However, in Portugal there are no download throughputs between 512 kbps and 1 Mbps, and between 2 Mbps and 4 Mbps (*exclusive*), which are relatively common in other countries. Also, there are no offers with throughputs above 16 Mbps.

Graph 87 – Download throughputs in the considered countries



Source: ICP-ANACOM

Regarding upload speeds, there is a considerably smaller availability of upload throughputs than in the remaining countries.

Regarding the applying tariffs, and as in other countries, in Portugal there are package offers (TV, FTS, terminal equipment, PC, etc.). There were also time-based and non time-based offers, which are also quite common in the studied countries.

The items of these tariffs are also similar to those existing in other countries: activation prices, installation prices, equipment prices (e.g. modems), flat-rate monthly fees (access+traffic⁸²), prices per minute (in the case with the time-based offers), and prices for traffic exceeding the defined limits. It is also common to find offers including e-mail and space for hosting websites. In many cases, the ISP imposes contracts with a minimum sojourn time of 12 months.

There is some linearity in the rate between the prices and the download throughput, and also the upload throughput.

It is usual to have promotional offers with no subscription /activation/installation prices, reduced or no monthly fees in the first months after subscribing to the service, offers of terminal equipment, content offer, etc..

The following types of tariff discrimination were also identified: residential/non-residential; student/non-student.

Regarding traffic limits, all the studied countries have offers with traffic limit.

There are three types of traffic limits: (1) traffic in MB (total; in peak hours; download/upload); (2) traffic in hours; (3) fair use policy (limits not defined/published).

Portugal is the sole country among those considered with a considerable set of offers (namely the incumbent operator's offers) discriminating the traffic limits according to their origin (national/international)

When the traffic limits are exceeded, the following penalties are identified: (1) given amounts are charged by amount of traffic or time; the offer's data transmission throughputs are reduced to a stage below or to levels similar to narrow band; (3) the user is invited to subscribe to another offer (in some cases, ISP provide optional tariffs for users to buy additional traffic blocks)

In Portugal, the operator charges certain amounts by MB when the traffic limits are exceeded.

II.5.4.5 Price level of the broadband Internet Access Service

This section contains some of the results of the international broadband price comparison made by ICP-ANACOM in November 2005⁸³. According to the collected data it was concluded that:

- Broadband's minimum price in Portugal is 21.7 per cent below the average of the considered countries and is similar to that of Holland and Belgium, countries with a higher broadband penetration. The minimum price of the incumbent operator in Portugal is the 6th lowest among the incumbent operators of the 13 considered countries.

Table 76 – Broadband minimum monthly fee – November 2005

Broadband monthly fees	Minimum price			Minimum price – Incumbent Op.		
	Absolute minimum price			Absolute minimum price		
	Price	Ranking	Tr.Lim.	Price	Ranking	Tr.Lim.
Germany	17.07	10		18.91	7	
Austria	15.75	7	*	16.58	2	*
Belgium	12.36	1	*	24.75	10	*
Denmark	21.39	12		25.68	12	
Spain	15.90	9	*	29.90	13	*
France	12.46	2		23.33	9	*
Holland	12.56	3	*	18.45	5	
Ireland	15.66	6		16.52	1	
Italy	15.79	8		16.63	3	
Luxembourg	22.70	13	*	25.22	11	*
Portugal	12.74	4		18.91	6	
United Kingdom	18.73	11		22.47	8	*
Sweden	14.74	5		17.36	4	
Total/Average w/out Portugal	16.26			21.32		
% deviation of Portugal vs. average	-21.7%			-11.3%		

* Offer with traffic limit. It was not always possible to identify the traffic limits.

Source: ICP-ANACOM

Unit: Euros w/out VAT

- Comparing the minimum broadband prices by download throughput practiced in Portugal with the average price in the considered countries, prices in Portugal are below the average, except with the 256 kbps, which price stands 31.9 per cent above the average. Regarding 2 Mbps, Portugal even has the lowest price of the analyzed offers. It should be mentioned that the relatively low number of offers at 8 Mbps and 16 Mbps, and the price dispersion of these offers make it impossible to draw safe conclusions on the level of prices in Portugal. Indeed, it would be enough to exclude the highest price of each of these access classes to considerably change Portugal's relative standing.

Table 77 – Minimum broadband price by access speed – November 2005

Broadband monthly fees	256 kbps			2 Mbps			4 Mbps			8 Mbps			16 Mbps		
Germany				23.26	6										
Austria	15.75	3	*	24.95	7		40.00	8	*				74.17	2	*
Belgium	12.36	1	*				20.45	1	*	42.98	6	*			
Denmark	+			21.39	5		53.63	9		85.86	7				
Spain				42.00	11		29.95	7		+					
France							25.00	4		23.33	3	*			
Holland				25.17	8		27.69	5		41.97	5				
Ireland				28.93	9	*									
Italy				16.63	2		24.13	2							
Luxembourg				36.78	10	*									
Portugal	18.84	4	*	16.12	1	*	28.10	6	*	34.71	4	*	69.83	1	*
United Kingdom				18.73	4		24.97	3		22.47	2	*			
Sweden	14.74	2		17.93	3					19.57	1				
Average w/out Portugal	14.28			25.58			30.73			39.36			74.17		
% deviation of Portugal vs. average	31.9%			-37.0%			-8.5%			-11.8%			-5.8%		

* Offer with traffic limit. It was not always possible to identify the traffic limits.

+ Offers which prices are excessively high or excessively low.

Source: ICP-ANACOM

Unit: Euros w/out VAT

- If instead of the minimum price, only the simple average of the minimum prices practiced by the several ISP for the several transmission speeds is considered, Portugal falls slightly in the rankings of the several throughput speeds, although the signs of the differences regarding the average are kept unchanged.

Table 78 – Average broadband price by access speed – November 2005

Broadband monthly fees	256 kbps		2 Mbps		4 Mbps		8 Mbps		16 Mbps	
Germany	-		26.41	5	-		-		-	
Austria	15.75	3	35.35	9	61.25	8	-		74.17	2
Belgium	12.36	1	-		24.27	1	42.98	4	-	
Denmark	25.68	5	35.00	8	53.63	7	85.86	7	-	
Spain	-		58.49	11	62.98	9	150.57	8	-	
France	-		-		27.09	4	25.42	2	-	
Holland	-		25.17	3	27.69	5	51.51	6	-	
Ireland	-		34.25	7	-		-		-	
Italy	-		16.63	1	26.63	3	-		-	
Luxembourg	-		41.91	10	-		-		-	
Portugal	23.79	4	25.38	4	33.29	6	46.87	5	69.83	1
United Kingdom	-		27.89	6	24.97	2	22.47	1	-	
Sweden	14.82	2	22.76	2	-		27.80	3	-	
Average w/out Portugal	17.15		32.38		38.56		58.09		74.17	
% deviation of Portugal vs. average	38.7%		-21.6%		-13.7%		-19.3%		-5.8%	

Source: ICP-ANACOM

Unit: Euros w/out VAT

- The prices of the incumbent operator's 256 kbps, 2 Mbps and 4 Mbps offers in Portugal are, respectively, 12.1 per cent, 13.8 per cent and 16.5 per cent below the prices of the incumbent operators of the considered countries;

Table 79 – Minimum broadband price by access speed of the incumbent operator – November 2005

Broadband monthly fees	256 kbps			2 Mbps			4 Mbps			8 Mbps		
Germany				25,81	2	*						
Austria				45,75	8							
Belgium							33,02	3				
Denmark	25,68	3		42,88	7		53,63	4		+		
Spain				+			+			+		
France										27,51	1	
Holland										62,98	4	
Ireland				35,00	5	*						
Italy							30,79	1				
Luxembourg				40,87	6	*						
Portugal	18,91	2	*	29,40	4	*	32,69	2	*	50,41	3	*
United Kingdom				22,47	1	*						
Sweden	17,36	1		26,08	3					31,31	2	
Average w/out Portugal	21,52			34,12			39,14			40,60		
% deviation of Portugal reg. the average	-12,1%			-13,8%			-16,5%			24,2%		

* Offer with traffic limit. It was not always possible to identify the traffic limits.

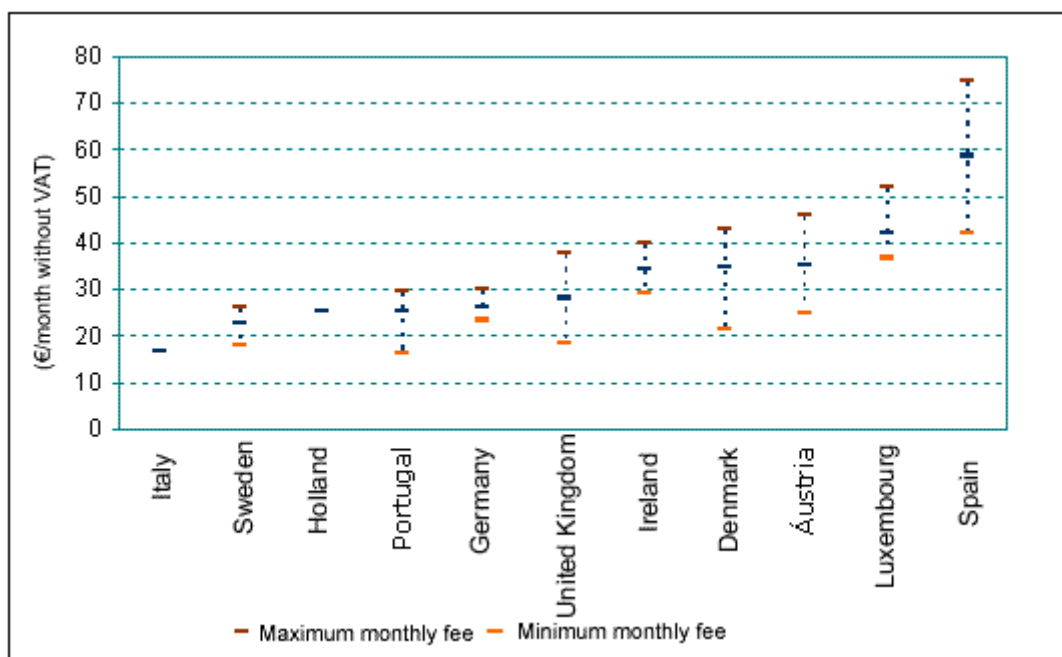
+ + Offers which prices are excessively high or excessively low.

Source: ICP-ANACOM

Unit: Euros w/out VAT

- Portuguese people currently using the Internet mostly use 2 Mbps offers. The minimum price of the 2 Mbps offers practiced in Portugal is the lowest among the considered countries. It is the offer of a CATV operator. In Portugal, most alternative operators' 2 Mbps offers have prices between 18 euros (without VAT) and 26 euros (without VAT). Considering the variation interval and the average price of the 2 Mbps offers in the considered countries, it was concluded that the prices practiced in Portugal are close, or even below, the European average patterns.

Graph 88 – Average variation interval of the prices of the 2 Mbps offers



Source: ICP-ANACOM

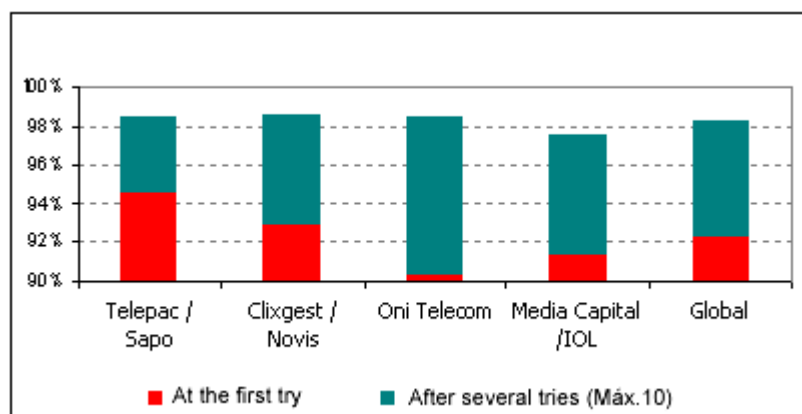
II.5.4.6 Quality of service

In 2005, ICP-ANACOM conducted for the first time, survey on the quality of the Internet access services provided by ISP in Portugal⁸⁴.

On a first phase of the study, conducted between June and July 2005, analysis was made to the narrow band (dial-up) offers, for the residential market segment, provided by the four biggest Portuguese ISPs providing this kind of access, which stand for 90 per cent of the market.

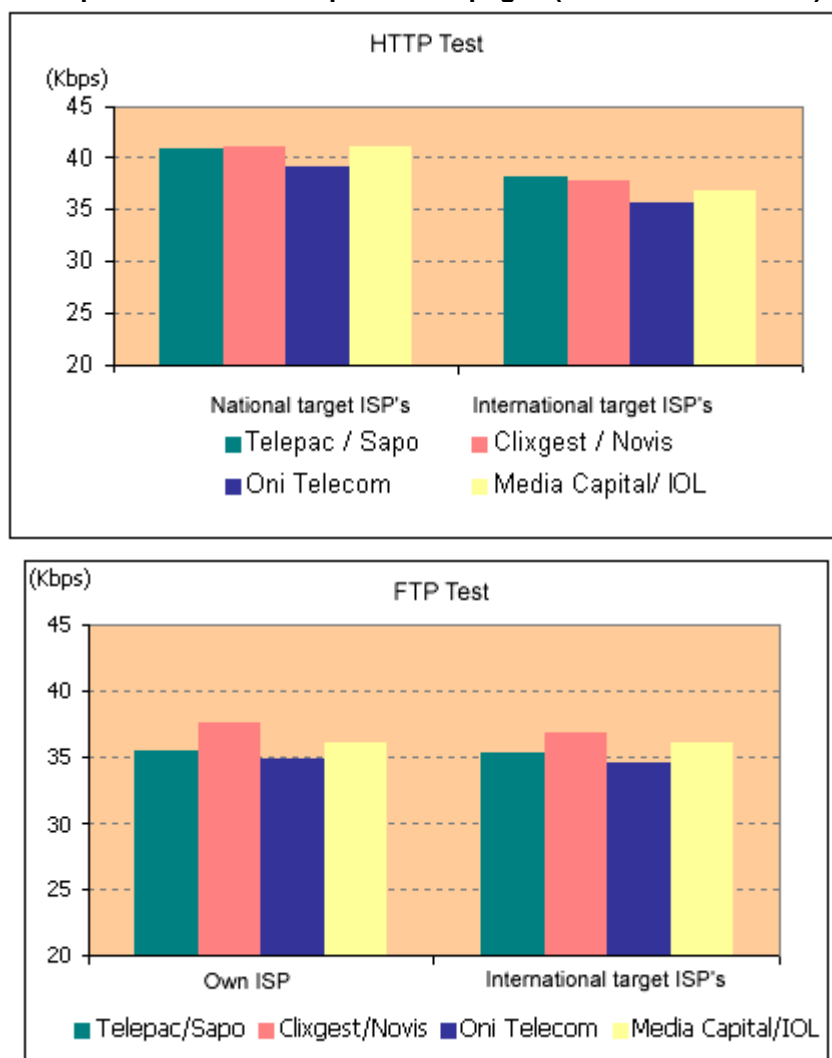
The study was based on 1) service availability/reliability indicators; and 2) throughput indicators (upload and download speeds). The results of this first phase were considered globally good, with very small differences among the several operators, for the analysed availability/reliability and throughput indicators.

Graph 89 – Rate of successful dial-up connections



Source: ICP-ANACOM

Graph 90 – Download speed of all pages (HTTP and FTP tests)



Source: ICP-ANACOM

Furthermore, it is possible to conclude that the indicators' variations registered during the day and along the week are of low importance for any of the analysed operators,

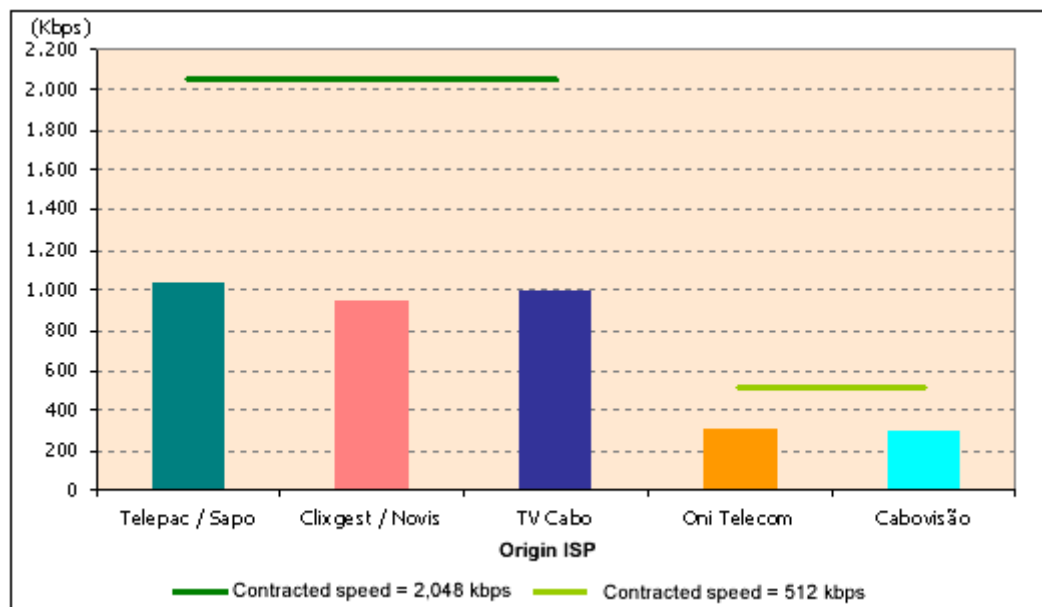
although it is possible to observe that, generally, the lowest values were recorded on week days and in the 12:00h to 18:00h time period. It was also possible to observe that the throughput indicators have slightly lower values for international connections, thus showing some constraints in the international bandwidth provided by national operators.

The second phase of the project, conducted between September and October 2005, aimed to analyse the broadband offers (ADSL and cable) provided by the five biggest Portuguese ISPs providing this type of access, and standing for more than 90 per cent of the offer available in the market. This phase's sole base was the measurements of throughput indicators, where once again the reception (download) and transmission (upload) speeds were assessed.

The results obtained on this second phase of the project are as follows:

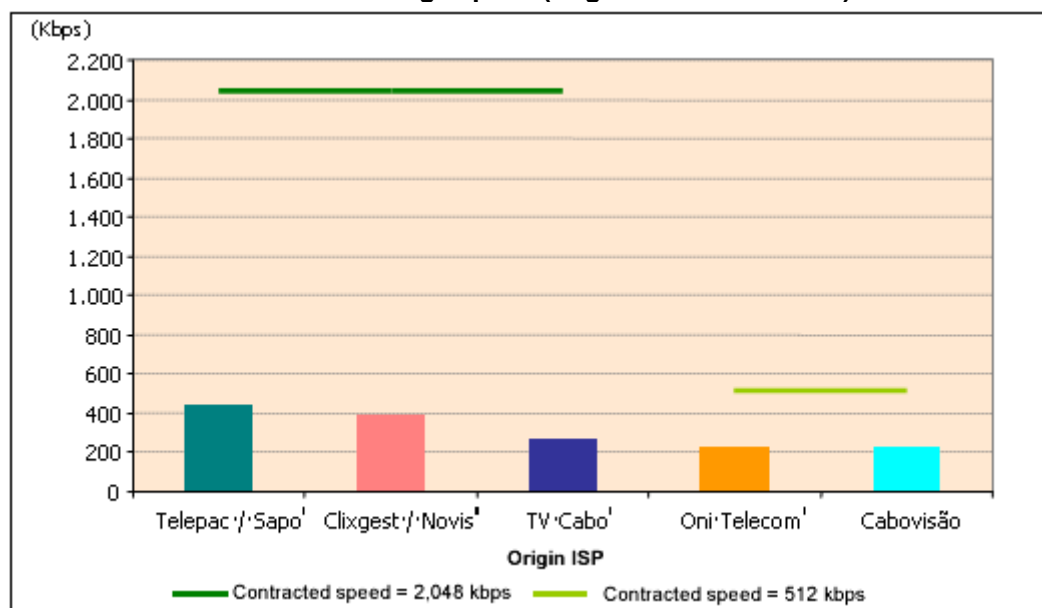
- Regarding download, although most operators had good results, these were clearly higher when the target ISPs are national, which, once again, comes to show constraints in the international bandwidth provided by operators.

**Graph 91 – User's perception of HTTP reception:
download average speed (target national ISP)**



Source: ICP-ANACOM

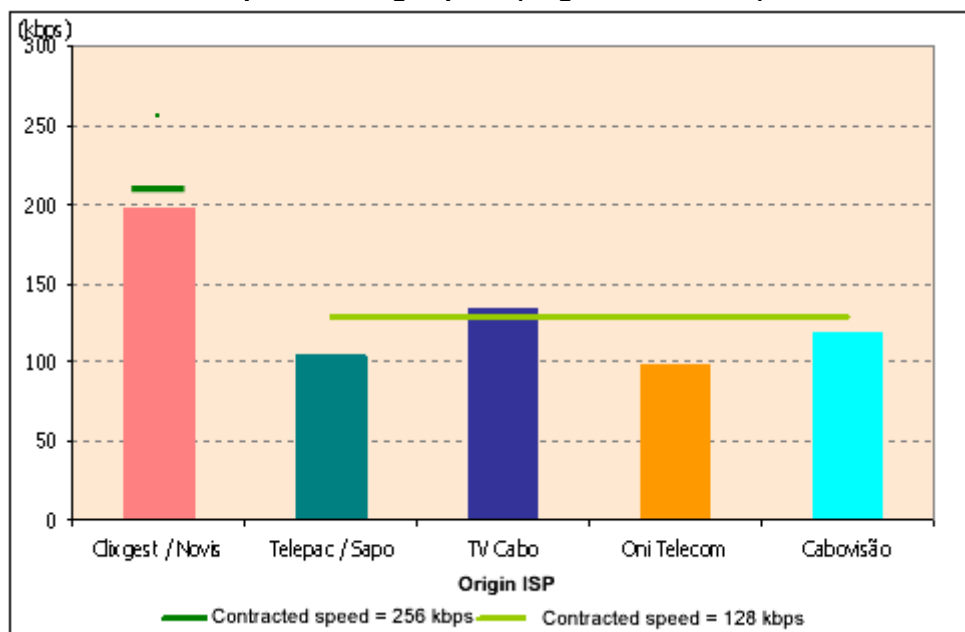
**Graph 92 – User's perception of HTTP reception:
download average speed (target international ISP)**



Source: ICP-ANACOM

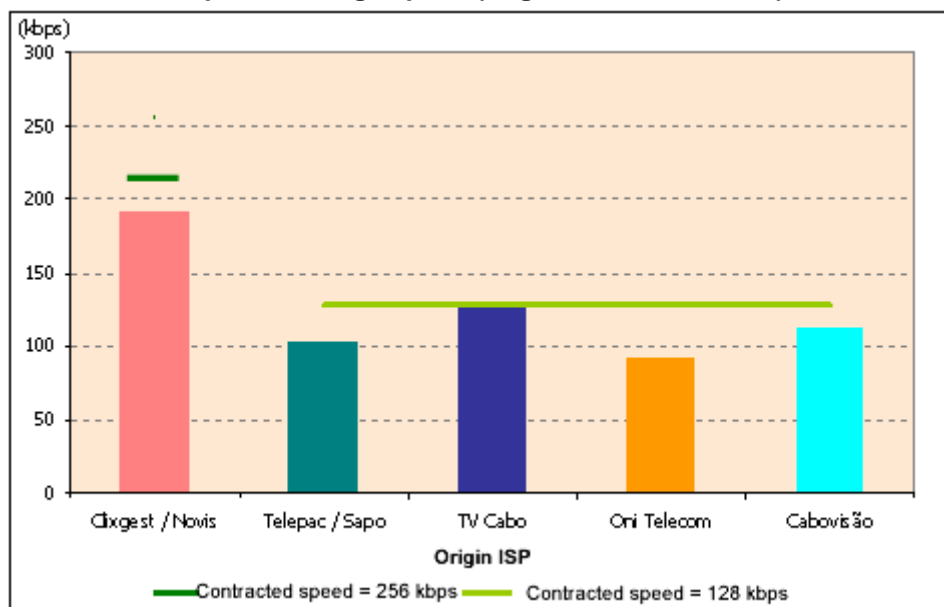
- Regarding upload, results are also satisfactory. Contrary to the previous case, no major differences were registered among the results obtained for national and international target ISP.

**Graph 93 – User's perception of FTP reception:
upload average speed (target national ISP)**



Source: ICP-ANACOM

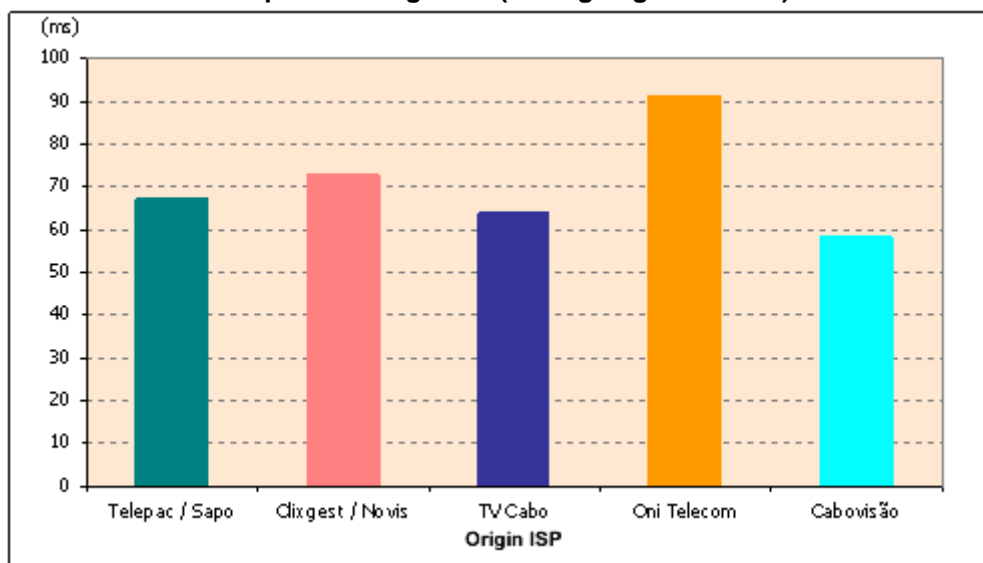
**Graph 94 – User's perception of FTP reception:
upload average speed (target international ISP)**



Source: ICP-ANACOM

- The Ping indicator, which measures the latency time, *i.e.*, communication's instantaneity (which is particularly relevant when using interactive applications – online games, for example) between the user and the standard website, has good results in the cases with most operators.

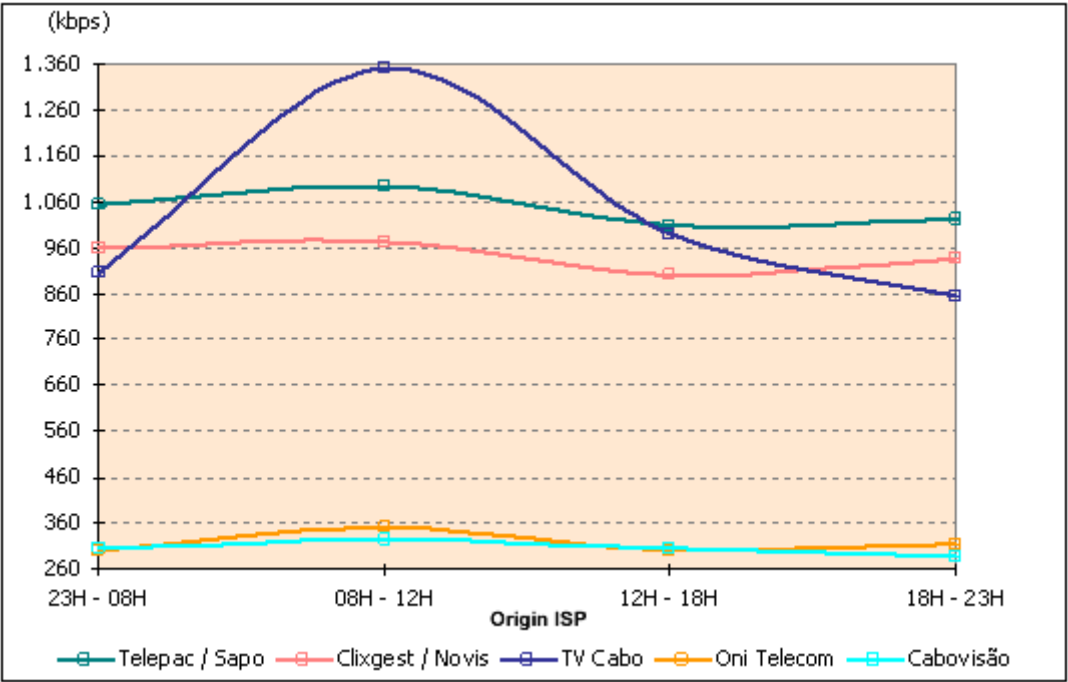
Graph 95 – Ping Time (average figures in ms)



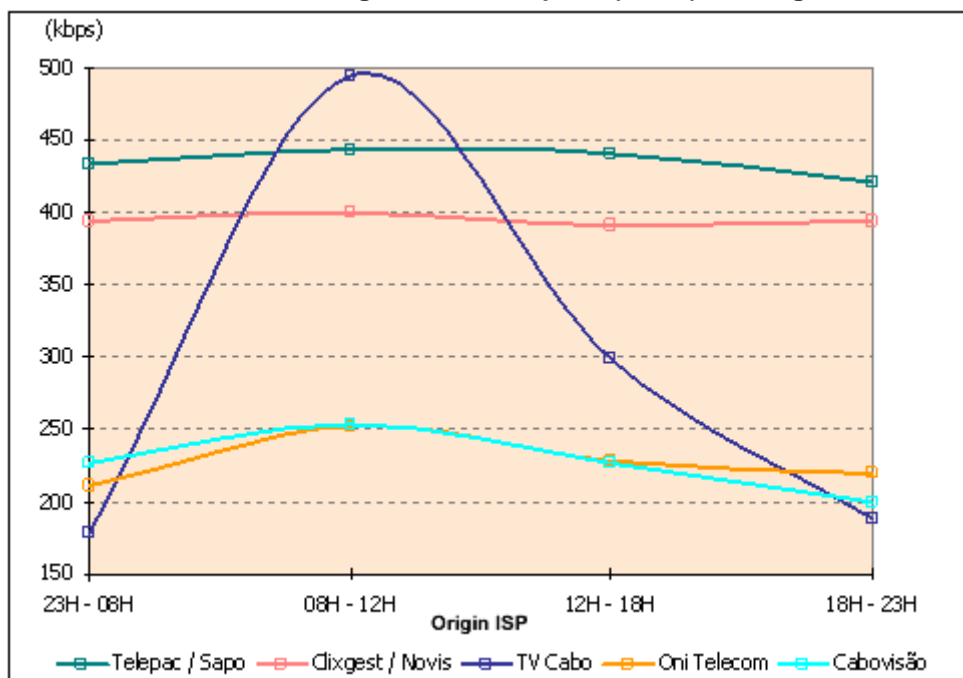
Source: ICP-ANACOM

- Lastly, the indicator variations recorded between week days and weekends are of little importance, or even non-existent, some indicator variations along the day notwithstanding, mainly in the download speed ones: FTP, HTTP and Ping.

Graph 96 – Variation of the average download speed (HTTP), for target national ISP



Source: ICP-ANACOM

Graph 97 – Variation of the average download speed (HTTP), for target international ISP

Source: ICP-ANACOM

II.5.4.7 Consumers' evaluation

According to the results of the Survey on the use of broadband Internet access in Portugal 2005, consumers' perception of the quality of broadband services is generally positive. With respect to the expectation created by the service, 21 per cent of broadband consumers consider that the service is better than expected, while 65 per cent consider that the performance fulfils the expectations.

Table 80 – Evaluation of the service regarding broadband consumers' expectations⁸⁵

Much better than expected	2.6%
Better than expected	17.8%
As expected	65.2%
Worse than expected	8.0%
Much worse than expected	0.8%
Doesn't know/Doesn't answer	5.7%

Source: Survey on the use of broadband in Portugal, 2005⁷⁵

Analysing in detail some of the features of the service, it is possible to observe that the levels of satisfaction with the service's throughput and reliability are high, above 83 per cent. Satisfaction regarding invoicing transparency is slightly lower.

Table 81 – Evaluation of the service regarding the service's throughput, reliability and invoicing transparency

	Speed	Reliability	Billing/Invoicing
Very satisfied	17.6%	32.0%	28.2%
Satisfied	67.7%	51.1%	48.3%
Unsatisfied / Not satisfied	9.3%	10.6%	10.0%
Very unsatisfied	2.6%	3.1%	3.3%
Doesn't know / Doesn't answer	2.8%	3.2%	10.3%

Source: Survey on the use of broadband in Portugal, 2005

Regarding complaints, 36 per cent of those interviewed have already filled a complaint with their operator. The table below shows that more than 40 per cent of those interviewed that filled a complaint were not satisfied with the way their problem was solved, which is a high figure.

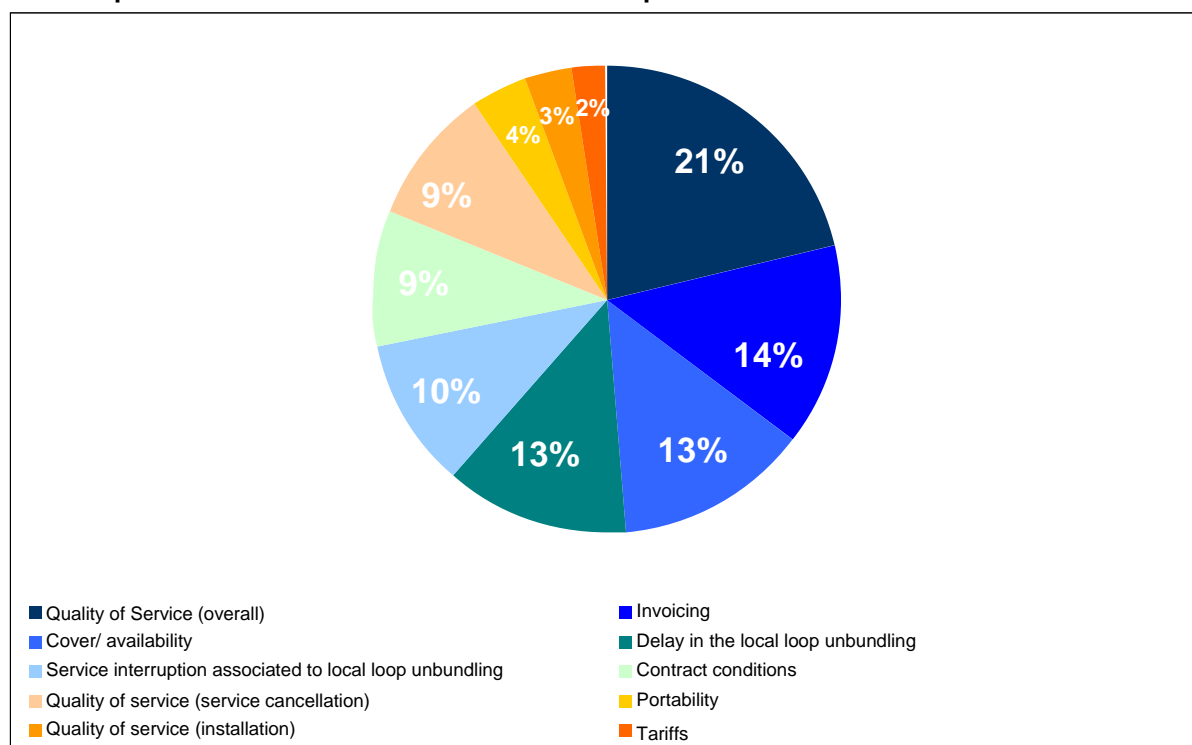
Table 82 – Evaluation of complaint solving⁸⁶

Very satisfied	17.0%
Satisfied	38.0%
Unsatisfied / Not satisfied	25.0%
Very unsatisfied	17.4%
Doesn't know / Doesn't answer	2.5%

Source: Survey on the use of broadband in Portugal, 2005

It should be mentioned that ICP-ANACOM's UM-TSM (Mission Unit for the Handling of Market Requests) received during 2005 about 2,110 complaints regarding the Internet Access Service and corresponding providers.

Most of these requests concern the service's global quality (21 per cent) and invoicing (14 per cent). The figures concerning coverage and availability (13 per cent) and the issues relating to the delay in the local loop unbundling (13 per cent) are also a considerable proportion of the complaints that were put forward.

Graph 98 – Distribution of the number of complaints received at ICP-ANACOM – 2005

Source: ICP-ANACOM

II.5.4.8 Development of competition

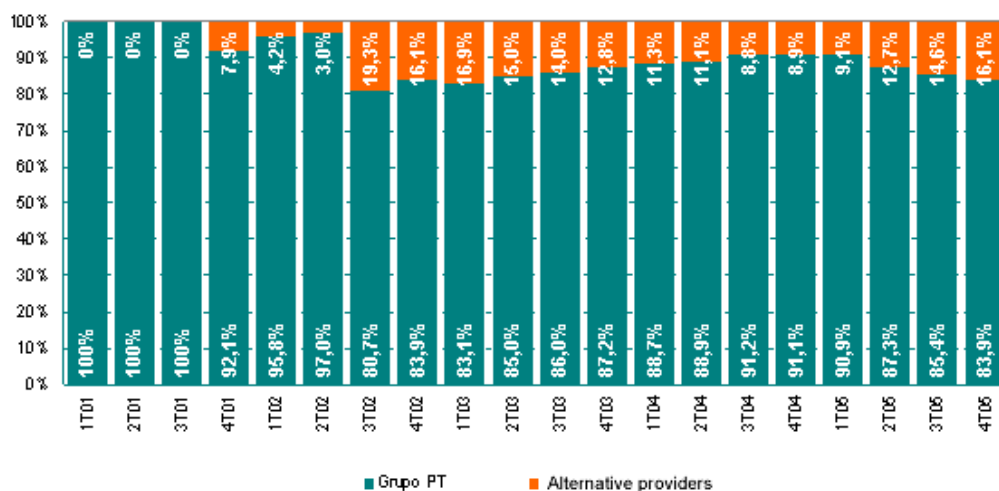
As shown on the following table, there was in 2005 an inversion in the growth trend of Grupo PT's broadband shares. At the end of the year the alternative operators' market share was 23 per cent, about 4.2 per cent above that of 2004.

Table 83 – Grupo PT's market shares of broadband subscribers

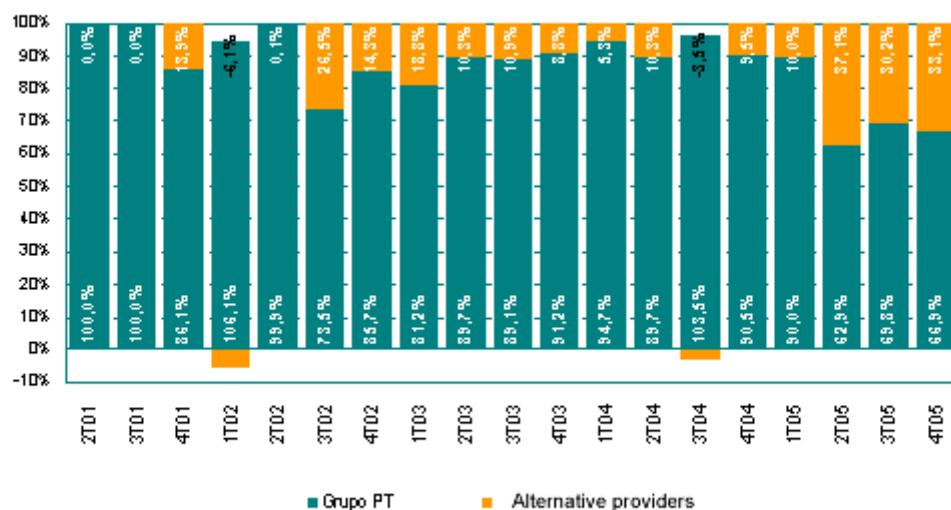
	2000	2001	2002	2003	2004	2005
Customers total	71.5%	66.0%	70.5%	78.3%	81.2%	77.0%
ADSL access customers	n.a.	92.1%	83.9%	87.2%	91.1%	83.9%
Cable modem access customers	74.6%	66.1%	67.6%	73.5%	71.8%	67.8%
Dedicated access customers	33.4%	34.9%	40.7%	41.0%	44.9%	45.3%

Source ICP-ANACOM

This trend is reflected on both main access technologies, with highlight to the 7.2 per cent raise in the new operators' share in the ADSL access. Contribution to the expansion of the new operators' broadband share came from the growth in the number of unbundled loops, reflecting the operators' purpose of reaching consumers directly, and the improvement of the LLRO.

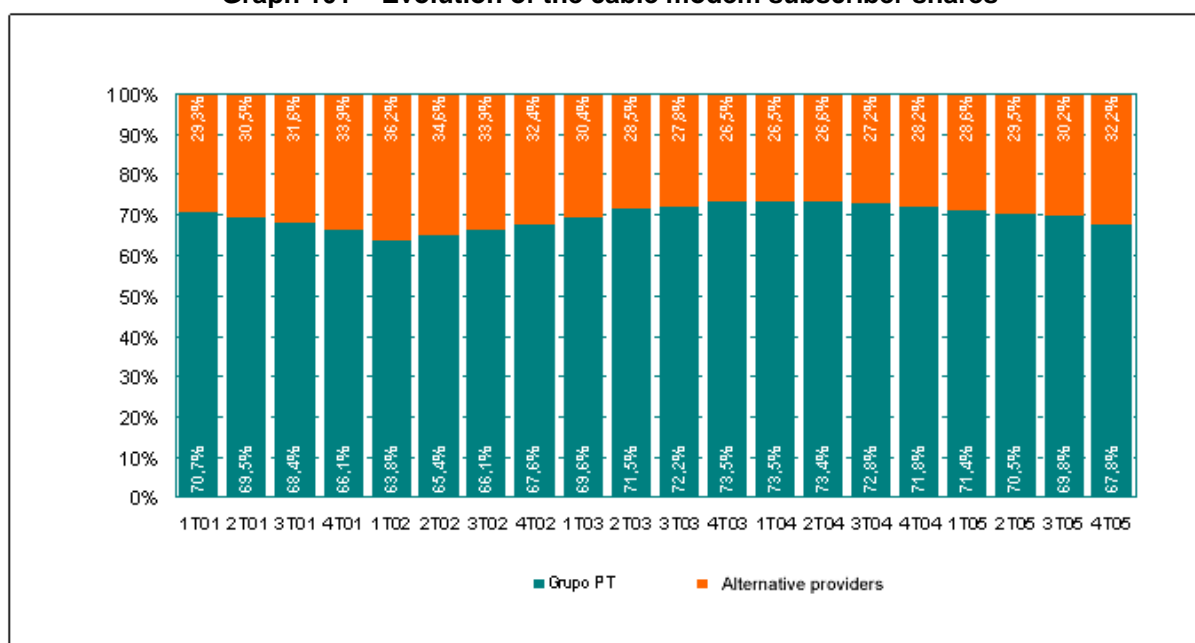
Graph 99 – Evolution of ADSL access subscriber shares

Source: ICP-ANACOM

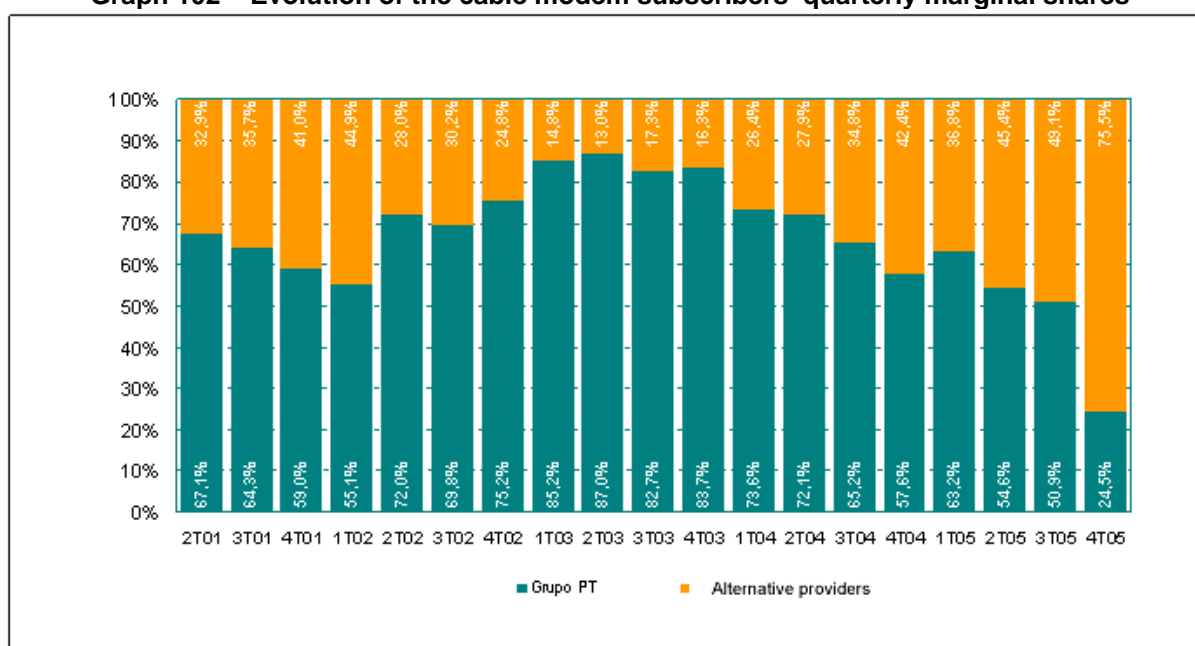
Graph 100 – Evolution of the ADSL access subscribers' quarterly marginal shares

Source: ICP-ANACOM

Concerning access using cable modem, in 2005 about 52 per cent of new clients were the alternative providers', against 33 per cent in 2004.

Graph 101 – Evolution of the cable modem subscriber shares

Source: ICP-ANACOM

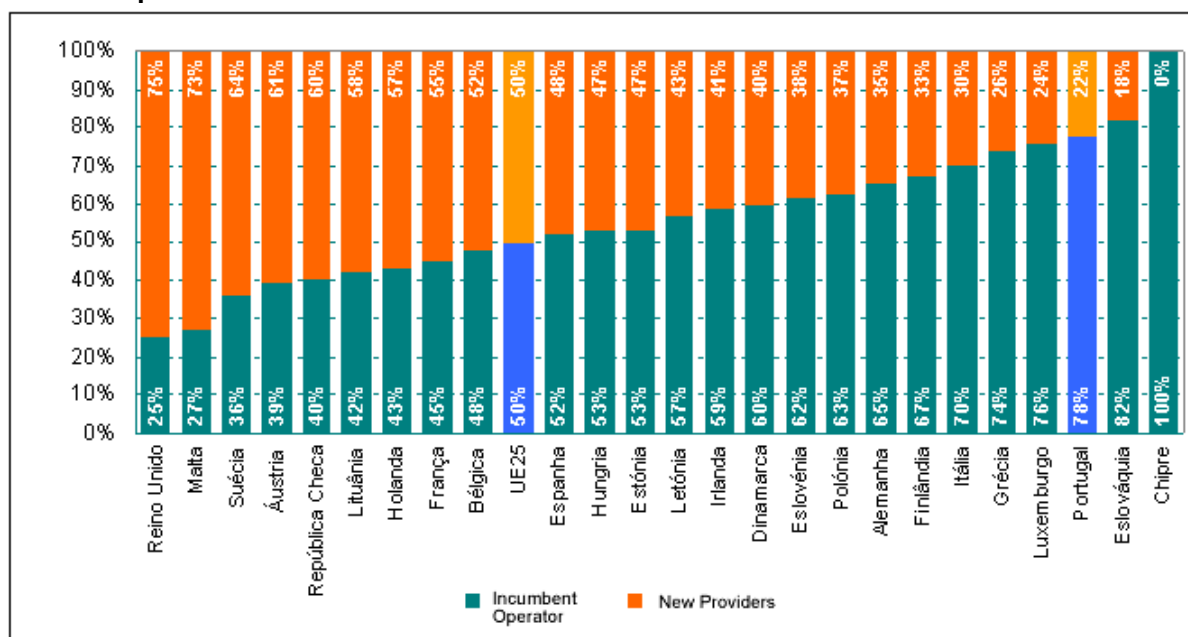
Graph 102 – Evolution of the cable modem subscribers' quarterly marginal shares

Source: ICP-ANACOM

Comparing the aforementioned results with the shares of the incumbent operators in the EU, in the 3rd quarter of 2005 the share of the incumbent operator in Portugal (78 per cent) is above the European average. This may be the result of Portugal being the only country in the EU where the incumbent is the main holder of the cable

distribution network, a technology which, as previously mentioned, still stands for more than 40 per cent of the installed accesses – with more than two thirds (67.8%) belonging to Grupo PT (TV Cabo and Cabo TV Madeirense)

Graph 103 – Broadband access shares in the Internet Access Service in the EU25



Source: European Commission, 11th Implementation Report.

Lastly, in the case with dial-up, Grupo PT's share at the end of 2005 stood at 28 per cent.

II.6 Other data transmission services (ODTS)

This chapter contains the state of the remaining ODTS by the end of 2005, and their evolution during that year.

II.6.1 Main items of ODTS's evolution in 2005

- The services provided using frame relay protocols had a positive growth in 2005, following the trend registered in the previous years. However, this type of access registered a decrease in its growth rate.
- A 7 per cent increase was registered in the number of installed dedicated accesses using other package data transmission services. However, there is a decrease in switched accesses. This trend has been registered since 2001 and may be partly due to the migration to frame relay-type accesses and to dedicated accesses.

II.6.2 ODTS' offer

The services provided and their evolution during the year 2005 are described in more detail below, as well as the entities providing these services in Portugal.

II.6.2.1 Service's description

This chapter approaches the data transmission services (DTS) based on other protocols besides IP, and the package data transmission services are the main focus of the analysis, given their importance.

The following data is divided into two groups: the services provided using the frame relay protocol and the services provided using other types of protocols (here designated as "other package data transmission services").

Below are the entities offering these services, main offers, and this service's evolution during the year 2005.

II.6.2.2 ODTS providers

At the end of 2005 there were 18 active entities authorized to provide ODTS.

Table 84 – ODTS providers in 2005

AT&T – Serviços de Telecomunicações, Sociedade Unipessoal, Lda.
Azertia – Tecnologias de Informação Portugal, S.A.
AR Telecom – Acessos e Redes de Telecomunicações, S.A.
Bloomberg L.P.
Clixgest – Internet e Conteúdos, S.A.
Equant Portugal, S.A.
Hari-técnica – Comércio e Indústria de Artigos Eléctricos e Electrónicos, Lda.
KPN Eurorings B.V.
NFSI Telecom, Lda.
Novis Telecom, S.A.
Onitelecom – Infocomunicações, S.A.
PT Prime – Soluções Empresariais de Telecomunicações e Sistemas, S.A.
Radianz Portugal – Sociedade Unipessoal, Lda.
Refer Telecom – Serviços de Telecomunicações, S.A.
Reuters Europe, S.A. – Sucursal em Portugal
Robot – Telecomunicações, Projectos e Serviços, Lda.
MCI International (Portugal) Telecomunicações, Lda.
Tele Larm Portugal - Transmissão de Sinais, Lda.

Source: ICP-ANACOM

Of these 18 companies, 16 provide ODTS by packages, while seven also provided services using frame relay. Larm Portugal – Transmissão de Sinais, Lda. provided services using another type of protocol for data transmission.

II.6.3 Evolution of the ODTS in 2005

The services provided using frame relay protocols had a positive growth in 2005, following the trend registered in the previous years. However, this type of access registered a decrease in its growth rate.

Table 85 – Frame relay accesses

	2000	2001	2002	2003	2004	2005
Number of accesses	9,460	13,916	15,318	16,683	19,494	19,811

Source: ICP-ANACOM

On the other hand, during the last year there was a 7 per cent growth in the number of the ODTS's installed dedicated accesses. However, there is a fall in the switched accesses. This trend has been recorded since 2001 and may be partly due to the migration to frame relay-type accesses and to dedicated accesses.

Table 86 – ODTS's package accesses

	2000	2001	2002	2003	2004	2005
Dedicated accesses	17,877	21,342	21,041	20,412	20,033	21,379
Switched accesses	5,086	5,638	4,970	4,560	4,537	4515

Source: ICP-ANACOM

In 2004⁸⁷, there was an increase in these services' revenues, namely resulting from the increase in the number of frame relay accesses.

Table 87 – OSTD revenues

	2000	2001	2002	2003	2004
Revenues	140,721	158,242	179,677	175,116	212 295
Growth rate	20.2%	12.5%	13.5%	-2.5%	21.2%

Source: ICP-ANACOM.

Unit: Thousand euros, %.

II.7 Cable television distribution service (CDS)

This chapter contains the state of the CDS at the end of 2005, as well as its evolution between 2000 and 2005.

II.7.1 Main items of CDS's evolution in 2005

- The development of the cable distribution networks reached a maturity phase. The growth rate of the amount of cabled households reached 4.2 per cent in 2005, a figure corresponding to about 151,000 cabled households. After the high growth rates recorded in the beginning of the decade, the service is already available in the more heavily populated areas. Investments in the last 5 year period have privileged the areas that were already cabled, those close to these ones, and some urban of the country's inland areas.
- At the end of 2005 there were about 1.4 million subscribers to the CDS, 57,000 more subscribers than in the previous year, a 4.3 per cent growth rate. Again, there is a slowing down in growth vis-à-vis the beginning of the decade. The development of alternative networks for television access must have conditioned the increase in the number of subscribers to this service.
- Grupo PT's subscriber share reached 78.2 per cent in 2005. After a considerable fall between 2000 and 2002, the group's subscriber share stabilized around 79 per cent.
- In 2005 the number of subscribers to the satellite television distribution service rose to 394,000. The satellite television distribution service (DTH – *direct to home*) had registered in 2005 a year-to-date growth of 5.1 per cent, which, in absolute terms, stands for 19,000 new subscribers. DTH's growth was stronger than that of cable networks and its geographical distribution partly complements the cable distribution services. This service is a low cost alternative to the installations of cable networks.
- At the end of 2005, two offers were launched based on IPTV. Although they use other technologies than those used by cable television networks operators, these services have similar features to cable television. On the

other hand, new offers were already announced for television distribution using the DVB-T (digital video broadcast-terrestrial) telecommunications standard, and the DVB-H (digital video broadcasting-handheld) technology. Thus, there is a forecasted increase of competition in this sector.

II.7.2 CDS's offer

The activity of the cable distribution network operators is to install and operate cable distribution networks⁸⁸ for the transmission and re-transmission of information, namely comprising the distribution of television and audio broadcastings, their own or from third parties, codified or not, as well as the provision of services of addressed nature and of data transmission. These entities may also rent their network's transmission capacity for the provision, by third parties, of public use telecommunications services.

This chapter deals specifically with the CDS, with corresponding sections of this report dealing with the addressed communications services using cable networks, namely the telephone and Internet access services⁸⁹.

In 2005, vis-à-vis the previous years, no changes were made to the full accessibility regime that characterized the access to and the operation of this activity. The already existing cable distribution network operators continued to pursue their activities in the scope of the established legal framework and their authorizations⁹⁰, granted by geographical zone (which correspond to the limits of one or more municipalities, except in the case with non-profit organizations, which area may be smaller).

The services provided and the entities offering these services in Portugal are described below.

II.7.2.1 CDS

In general, the cable distribution networks operators provide similar television services:

- Basic service – package with an average of 50 channels, including the four national open channels, generalist channels, entertainment, information, documentary, movies, for children, history, health channels, etc.. This service implies the payment of an installation price and a monthly fee. Some operators provide packages with a lower number of channels, named mini-basic, at lower prices.
- Premium/supplementary service – this service offers conditioned access channels that are subject to the payment of an additional amount, such as *Sport TV*, movie channels, and *Disney Channel*, among others, needing the installation of a channels' sign decoder (set-top-box). Most operators sell channel packages (for example: *Sport TV + Disney Channel*) at lower prices.
- Digital TV – service offered in areas covered by digital head-ends providing, further to the installation of a power box (replaces TV box), the access to the new digital services, namely:
 - Near video-on-demand – possibility of watching movies by demand, depending on the provided titles and schedules;
 - TV Guide (EPG – electronic program guide) – information on the channels' programming during the next seven days;
 - Journal – current news;
 - Interactive programming and multi-camera football – access to interactive channels and programs;
 - Commerce and banking – presentation of several products/services, including characteristics and prices.

It should be mentioned that Cabo Portugal (CATVP) launched in June 2001, in partnership with Microsoft, the so-called Interactive Digital Television. Further to the installation of a *smart box*, a digital terminal developed by Octal TV, clients had the possibility of accessing interactive digital services, similar to the ones currently provided using the Digital TV service, and also the access to the Internet service named *web TV* service. Thus the smart box included an Internet card that made it possible to provide this service although with some limitations. Even though it allowed website browsing, it was not possible to access e-mail addresses or make

downloads. This offer's termination was announced by CATVP in March 2004. To those that were already customers, CATVP formally announced that the ending of the service would occur on 1 July 2004.

Besides cable technology, television reaches consumers based on the following platforms:

- Analogue hertz lan television – television broadcasting in Portugal was initially made with this platform. Currently consumers have access to the four *free-to-air* channels, without further payments. There are two networks, PT's, mostly supporting broadcastings from RTP and SIC, and RETI, which belongs to TVI.
- Satellite television (DTH) – as an alternative to cable and for non-cabled areas, cable television operators have been providing, since 1998, a satellite service. In order to have this service, the customer needs a satellite dish, a receiver/decoder and an access card. This offer enlarged the geographical coverage of the paid television services, while the corresponding number of subscribers has been growing considerably. Currently the commercial offer of television is identical to that of cable. However, interactivity, and thus the Internet service, is not possible.

II.7.2.2 New commercial offers

At the end of 2005, two new offers of TV distribution services were launched. Although they use different technologies from those used by the cable television networks operators, these services have characteristics that are similar to cable television. The following table describes these offers' main conditions:

Table 88 – New offers

	SmarTV (Clix/Novis)	TV.Net.Tel (AR Telecom)
Technology	ADSL2+ Almost unlimited bandwidth (>20Mb) that makes it possible to support several services, namely, telephone, television and Internet. Video transmission is done over copper wire.	Digital Tmax [®] Network Supports integrated television, Internet and fixed telephone, with digital transmission of the signal (high sound and image quality, without interference or noise), via FWA wireless technology. Depends on the roll-out of a new network of building-to-building

		telecommunications.
Equipment	<ul style="list-style-type: none"> - <i>TV Box</i> - Modem router ADSL2+ - optional: wireless modem router ADSL2+ 	<ul style="list-style-type: none"> - <i>Set-top-box</i> (STB) receiver - Multimedia modem (MTA) - Base telephone with cord - Optional: equipment to install a wireless network connecting several domestic equipment (computer, telephone, TV, etc.)
Service	Digital television + home video + broadband Internet + fixed telephone	Digital television + broadband Internet + fixed telephone
Digital television	Television over ADSL including the main national and international channels, allowing for the customizations of the channels' package (via optional channels)	Channels selected by criteria of national and international audience and thematic diversity.
(Home video) *	Interactive service for choosing, renting and watching movies. Service paid depending on the movie.	
ADSL Internet	<i>Clix</i> ADSL service with the current characteristics and prices.	High performance broadband (HPB) service, with high symmetry and low latency.
Fixed telephone	Without subscription fee.	Without subscription fee (lard plan)
Additional services	<u>Home video</u> Possibility of choosing, renting and immediately watching movies on the TV set and with all the features of a DVD. Variable price depending on the movie.	<u>Videoconference</u> Possibility of communication (video and voice) with others through the television device/set.
Extra features	<u>Electronic program guide (EPG)</u> Feature for seeing the transmission schedule of the several channels' contents.	
Packages	<ul style="list-style-type: none"> - <i>SmarTV Light</i> (15 channels + 10 optional ones) - <i>SmarTV Total</i> (35 fixed channels + 5 optional ones) - <i>SmarTV Mix</i> (40 optional channels) 	<ul style="list-style-type: none"> - <i>Light</i> (10 channels), 2Mb <i>pay-per-use</i> - <i>Light</i> (10 channels), 2Mb <i>always-on</i> - <i>Light</i> (10 channels), 5Mb <i>always-on</i> - <i>Plus</i> (27 channels), 2Mb <i>pay-per-use</i> - <i>Plus</i> (27 channels), 2Mb <i>always-on</i> - <i>Plus</i> (27 channels), 5Mb <i>always-on</i>
Base prices (packages) **	<p><i>SmarTV Light</i> Installation: €70 Activation: €49.90 Monthly fee: €14.90 Equipment (monthly fee): €2.50</p> <p><i>SmarTV Total</i> Installation: €70 Activation: €49.90 Monthly fee: €21.40 Equipment (monthly fee): €2.50</p> <p><i>SmarTV Mix</i> Installation: €70 Activation: €49.90 Monthly fee: €22.90 Equipment (monthly fee): €2.50</p>	<p><i>Light</i> (10 channels), 2Mb <i>pay-per-use</i> Installation: free Activation: €25 Monthly fee: €10 Minimum call consumption: €5 Equipment (annual fee): €30</p> <p><i>Light</i> (10 channels), 2Mb <i>always-on</i> Installation: free Activation: €25 Monthly fee: €20 Minimum call consumption: €5 Equipment (annual fee): €30</p> <p><i>Light</i> (10 channels), 5Mb <i>always-on</i> Installation: free Activation: €25 Monthly fee: €35 Minimum call consumption: €5 Equipment (annual fee): €30</p> <p><i>Plus</i> (27 channels), 2Mb <i>pay-per-use</i> Installation: free Activation: €25 Monthly fee: €22 Minimum call consumption: €5 Equipment (annual fee): €30</p>

		<i>Plus (27 channels), 2Mb always-on</i> Installation: free Activation: free Monthly fee: €35 Minimum call consumption: €5 Equipment (annual fee): €30 <i>Plus (27 channels), 5MB always-on</i> Installation: free Activation: free Monthly fee: €50 Minimum call consumption: €10 Equipment (annual fee): €30
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Source: <http://smartv.clix.pt> and <http://www.artelecom.pt>.

* Novis/Clix offer's home video service is considered a multiple play component because that is how the offer is publicized and marketed. In fact, however, this is an additional service/feature, similar to the videoconference feature included in AR Telecom's offer, which, by itself, does not seem to change a *triple play* offer into a *multiple play* offer.

** Does not include optional services / features / equipment; or extra services / features / calls / Internet traffic blocks / Internet capacity or speed; or launch promotions.

While the Novis service is an IPTV offer, the service provided by AR Telecom uses its own technology, named Tmax. Tmax is a digital, wireless and with a high transmission capacity technology that is based on the DVB-T telecommunications standard and on the IP standard. Until the end of June 2006, the company expects to provide this service in Lisbon and Porto.

Lastly, it should be mentioned that new television distribution offers have already been publicized based on the 3rd generation mobile services and on the DVB-H (Digital Video Broadcasting – Handheld) standard. The DVB-H standard is based on DVB-T, and makes it possible to use interactive services and to have programs on demand.

II.7.2.3 Active operators

Below is the list of entities providing CDS, with reference to those that were active in the beginning of 2005, those that remained active at the end of that year, and the market entries and exits occurred during that period.

Table 89 – CDS providers 2005

Name	At the beginning	Entries	Exits	At the end
Associação de Moradores do Litoral de Almancil*	A			A

Associação de Moradores da Urbanização Quinta da Boavista *	NA			NA
Bragatel — Comp. Televisão por Cabo de Braga, S.A.	A			A
Cabo TV Açoreana, S.A.	A			A
Cabo TV Madeirense, S.A.	A			A
Cabovisão — Sociedade de Televisão por Cabo, S.A.	A			A
CATVP — TV Cabo Portugal, S.A. ⁹¹	A			A
Entrónica – Serviços na Área de Telecomunicações, Lda.	NA			A
Pluricanal Leiria — Televisão por Cabo, S.A.	A			A
Pluricanal Santarém — Televisão por Cabo, S.A.	A			A
TVTel Grande Porto — Comunicações S.A.	A			A
Total activas	9	-	-	10
Total of non active	2	-	-	1
Global total	11	-	-	11

Source: ICP-ANACOM

Legend: A – Active; NA – Not Active

* Cable distribution networks not accessible to the public.

Note 1: The company AR Telecom – Acessos e Redes de Telecomunicações, S.A. started the commercial offer of the television signal distribution services to which it is entitled since April 2005.

Note 2: Novis Telecom, S.A. is entitled to provide the television and video signal distribution service since November 2005.

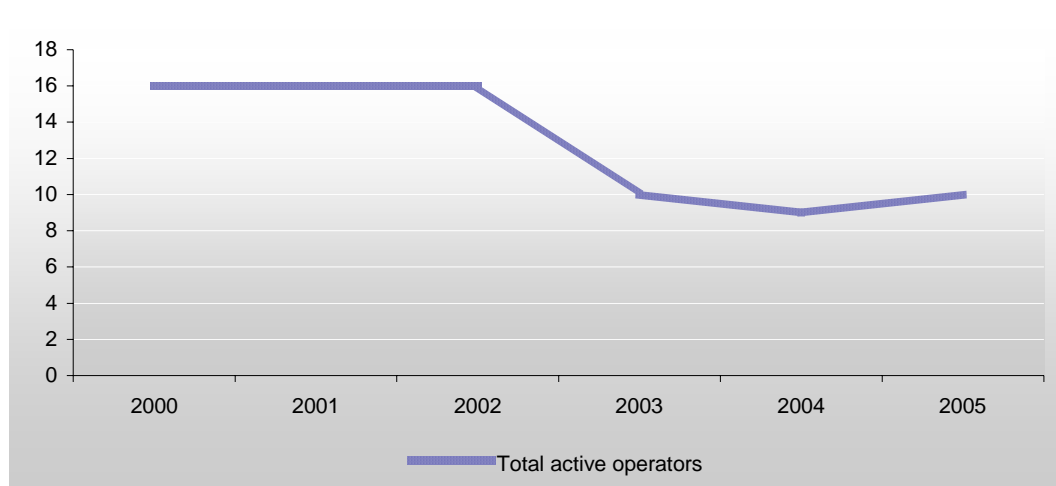
Since the authorizations of the cable distribution network operators were granted by geographical area (municipality) until the end of 2003, the following table shows the list of entities operating in each region⁹². It should be stressed that the fact that the operators are operating in certain regions does not imply that they are present in every municipality of those regions.

Table 90 – Cable distribution network operators authorized to operate, by NUTS II

NUTS II	Active operators
North	Bragatel, Cabovisão, CATVP, TVTEL
Centre	CATVP, Cabovisão, Puricanal Leiria, Pluricanal Santarém
Lisbon	Cabovisão, CATVP
Alentejo	Cabovisão, CATVP, Pluricanal Santarém
Algarve	Associação de Moradores do Litoral de Almancil, Cabovisão, Associação de Moradores da Urbanização Quinta da Boavista, CATVP
Autonomous Region of Madeira	Cabo TV Madeirense
Autonomous Region of the Azores	Cabo TV Açoreana

Source: ICP-ANACOM

Between 2000 and 2005, no important changes were registered on the number of operators in these markets. In fact, the reduction of the number of active operators that occurred in 2002 resulted from the replacement of CATVP's regional companies that operated in the Mainland by one sole company. The accruals recorded in more recent years are explained by the authorizations granted to residents' associations, which networks are of small size and not available to the public.

Graph 104 – Evolution of the number of active operators

Source: ICP-ANACOM

II.7.3 The profile of the cable television user

The following sections characterize the cable television user, according to the Survey on the consumption of broadband 2005.

II.7.3.1 The profile of the cable television user

The cable distribution user mostly resides in the autonomous regions and in the more heavily populated urban areas.

Table 91 – Percentage of homes with CDS by geographical location

North	Centre	Lisbon	Alentejo	Algarve	Azores	Madeira
47.2%	42.4%	67.9%	44.0%	47.7%	70.8%	80.2%

Source: Survey on the consumption of broadband in Portugal, 2005

Table 92 – Percentage of homes with CDS by habitat size

Less than 2,000 inhabitants	Between 2,000 and 9,999 inhabitants	Between 10,000 and 99,999 inhabitants	More than 100,000 inhabitants
36.9%	50.8%	68.5%	74.3%

Source: Survey on the consumption of broadband in Portugal, 2005

On the other hand, the highest the interviewee's socio-economic level, the highest the probability that they have access to the CDS.

Table 93 – Rate of homes with access to the CDS by social-economic level

Classes A e B	Class C1	Class C2	Class D
68.7%	63.7%	51.4%	41.4%

Source: Survey on the consumption of broadband in Portugal, 2005

There is also a positive correlation between the interviewee's education level and the percentage of homes with CDS.

Table 94 – Percentage of homes with access to CDS by education level

Primary	12th grade	Higher
45.9%	57.6%	66.0%

Source: Survey on the consumption of broadband in Portugal, 2005

II.7.3.2 Barriers to service subscription

Geographical location and income level are the main barriers to subscribing the service.

In fact, the service is available in the urban areas of Lisbon, Porto, Algarve, littoral North and the autonomous regions. In the remaining regions, namely in the country's inland, there are no cable distribution networks available. These regions also have lower income levels.

These factors are the main barriers to the subscription of this service. However, there are other cable distribution technologies available in these areas.

II.7.4 The evolution of CDS in 2005

Below are a set of elements on the evolution of the CDS in 2005: geographical availability and penetration, service's usage level, prices and quality of service.

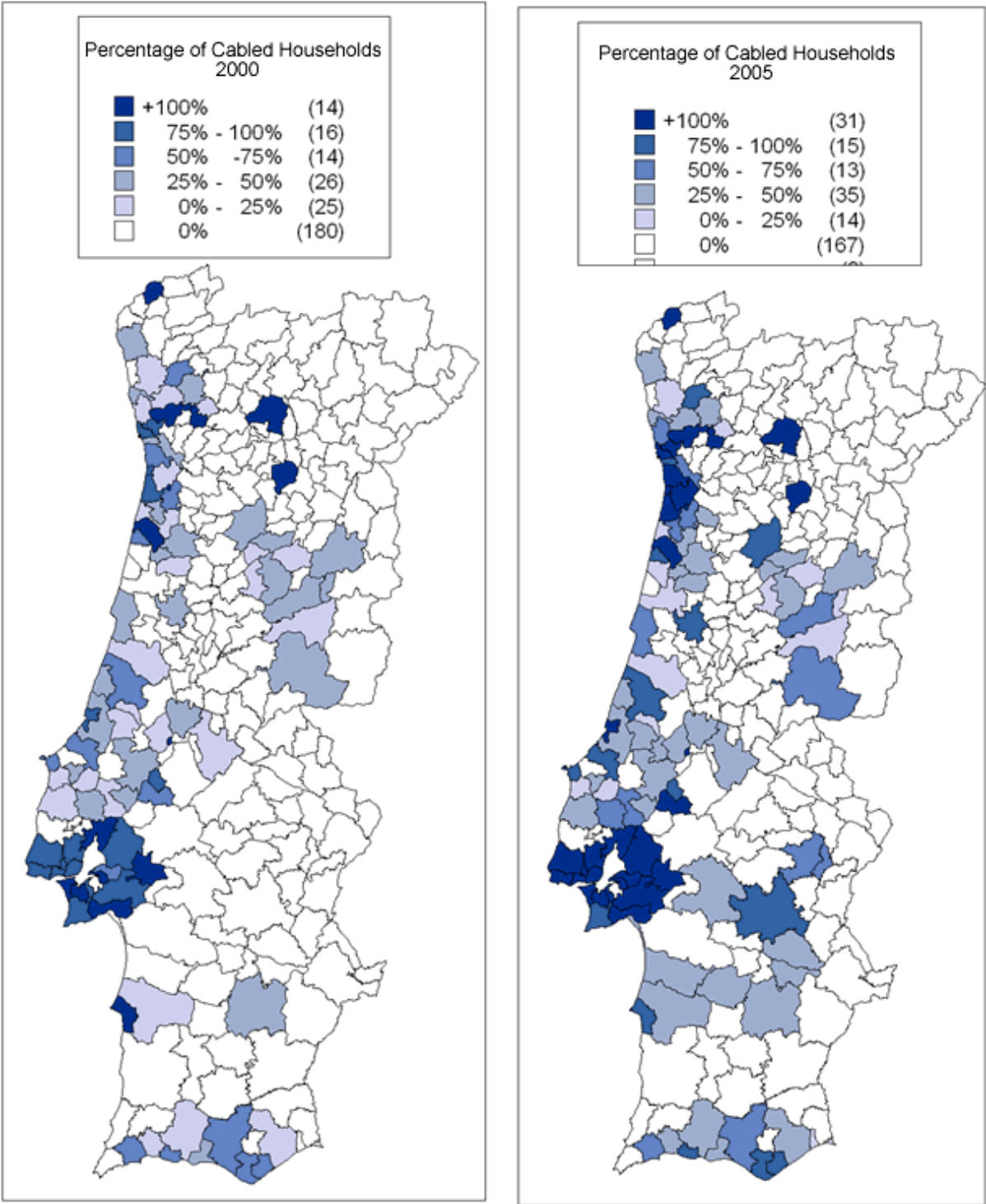
II.7.4.1 Geographical availability of the service (cabled households)

Below is the geographical distribution of cabled households and the evolution of cable household penetration in time.

II.7.4.1.1 Evolution of cabled households

The maps below show the CDS's geographical availability in two different moments: the end of 2000 and the end of 2005.

Graph 105 – Geographical distribution of cabled households



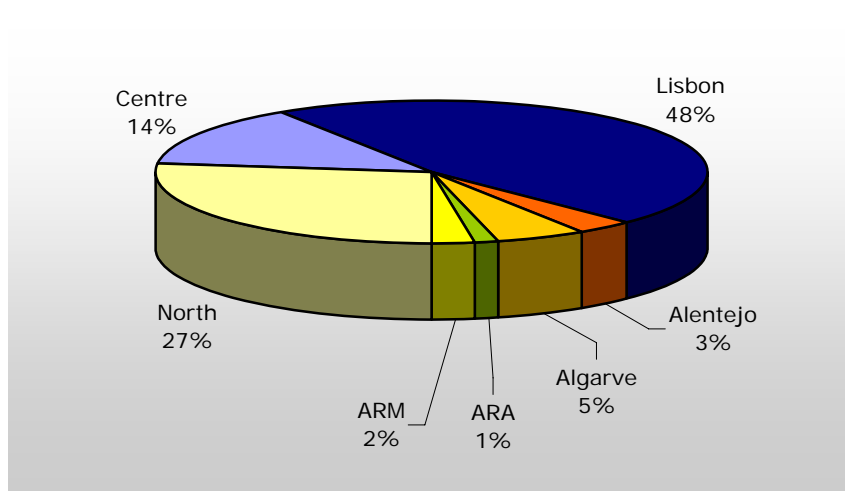
Source: ICP-ANACOM

The graphs above show that cable distribution network operators installed their networks in the most populated areas, namely in Greater Lisbon, Greater Porto, in the Setúbal peninsula, in the North coast and in the Algarve.

The evolution between 2000 and 2005 occurred mainly in areas where the service already existed or in surrounding areas.

The Autonomous Regions of Madeira and the Azores also have a very important number of cabled households.

Graph 106 – Distribution of cabled households by NUTS II – 2005



Source: ICP-ANACOM

The following table supports the conclusions stated above:

Table 95 – Cable households

	2000	2001	2002	2003	2004	2005
North	640,572	768,769	860,514	909,163	970,301	1,016,627
Centre	399,222	438,007	463,671	478,942	501,291	528,166
Lisbon*	1,237,157	1,454,240	1,611,412	1,661,194	1,701,300	1,757,371
Alentejo	70,503	83,304	118,695	122,067	123,632	128,024
Algarve	128,931	149,388	172,169	177,487	184,748	196,946
Autonomous Regions of the Azores	50,532	52,690	53,243	54,227	55,403	55,888
Autonomous Regions of Madeira	73,714	77,436	81,036	84,792	86,943	91,570
Total	2,600,631	3,023,834	3,360,740	3,487,872	3,623,618	3,774,592

Source: ICP-ANACOM

* The provision of the service by more than one operator in the same region may imply multiple cabling of the same household. This fact has been gaining importance, namely in the Lisbon area, leading to figures above 100 per cent for this indicator.

In this period, an average of 235,000 households was cabled per year, which corresponds to an average yearly growth rate of 8 per cent. The growth rate of the

number of cabled households reached 4.2 per cent in 2005, about 151,000 new cabled households.

The current geographical distribution of this service is explained by the following factors:

- This business' economy favours the installation of networks in more populated areas and with a much higher economic level, and the intensive exploitation of the already installed infrastructures. Regarding the latter, this service's spatial development is not different from other network industries demanding high initial investments and with cost structures with a high rate of costs;
- The inter-relation between the incumbent operator's strategy and the strategies of the new operators. The incumbent operator started the installation of its networks in urban areas of greater dimension. The new operators, on a first phase, started to operate in smaller size urban areas and/or in municipalities where the incumbent operator was not yet installed or where its presence was less significant. Later, the operators started providing services in surrounding areas of those where they became installed and in less populated areas, and currently there are several areas with more than one operator;
- The emergence and development of the DTH service as a more economic alternative to the provision of a television distribution service in less populated or remote areas.

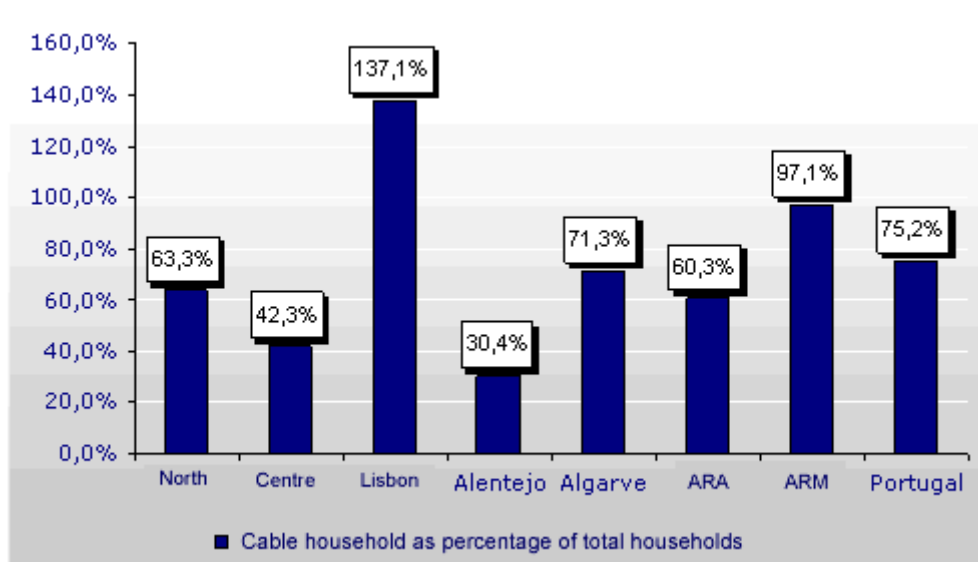
Regarding the slowing down in the growth of cabled households, this is due to the following factors:

- Service saturation in the most populated geographical zones;
- A strategy that favours revenue increase from the operation of the already installed infrastructure against the spatial development on the network, as shown in the following sections;
- The slowing down in the number of subscribers;
- The emergence and commercial success of replacements for this service, namely DTH.

II.7.4.1.2 Cabled household penetration versus total households

Cabled households stood for about 75.2 per cent of all Portuguese households, 3 per cent more than in the previous year.

Graph 107 – Percentage of cable households by NUTS II – 2005



Source: ICP-ANACOM

Note: The provision of the service by more than one operator in the same region may imply multiple cabling of the same household. This fact has been gaining importance, namely in the Lisbon area, leading to figures above 100 per cent for this indicator.

Between 2000 and 2005, the service penetration, measured in terms of cabled households, grew about 23 per cent. After the high growths recorded at the beginning of the period, this service's penetration growth slowed down to about 2 to 4 per cent/year since 2003.

Regarding the regional distribution of this growth, the most important increases were registered in the Lisbon, Algarve and North regions. It should be mentioned that in some cases this growth results from the entry of new operators in previously cabled areas. This is, for example, the situation of most municipalities of the Setúbal peninsula, of some municipalities of Greater Porto, most of the municipalities of the region between rivers Douro and Vouga and the municipalities of Braga, Lagoa and Portimão.

Table 96 – Cabled household penetration versus total households

NUTS II	2000	2001	2002	2003	2004	2005
North	39.9%	47.9%	53.6%	56.6%	60.4%	63.3%
Centre	32.0%	35.1%	37.1%	38.4%	40.2%	42.3%
Lisbon*	96.5%	113.4%	125.7%	129.6%	132.7%	137.1%
Alentejo	16.8%	19.8%	28.2%	29.0%	29.4%	30.4%
Algarve	46.7%	54.1%	62.4%	64.3%	66.9%	71.3%
Autonomous Regions of the Azores	54.6%	56.9%	57.5%	58.5%	59.8%	60.3%
Autonomous Regions of Madeira	78.2%	82.1%	86.0%	89.9%	92.2%	97.1%
Total	51.8%	60.2%	67.0%	69.5%	72.2%	75.2%

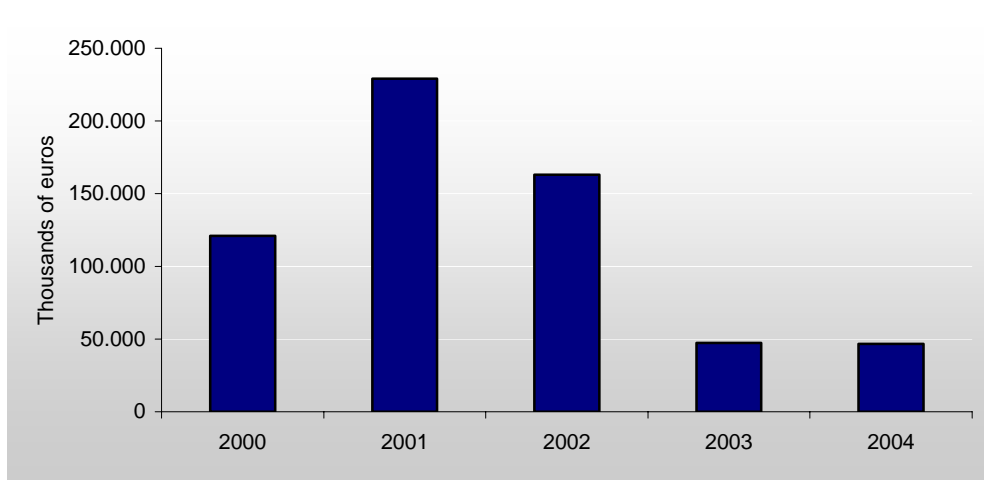
Source: ICP-ANACOM

* The provision of the service by more than one operator in the same region may imply multiple cabling of the same household. This fact has been gaining importance, namely in the Lisbon area, leading to figures above 100 per cent for this indicator.

The main reasons for this indicator's recent evolution are the same that justify the evolution of cabled households.

These factors had impact on the investment in network infrastructure and affected this indicator's evolution.

Graph 108 – Investment in cable distribution networks

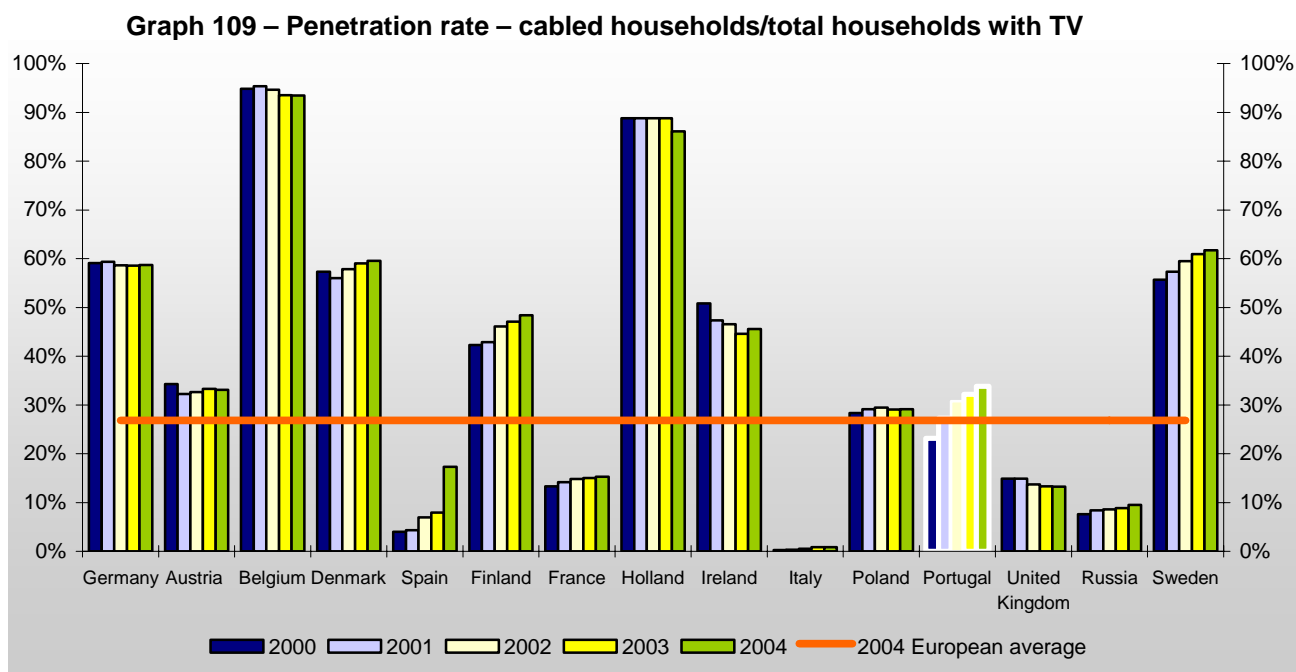


Source: ICP-ANACOM

According to the statistical data of Institut de l'Audiovisuel et des Télécommunications en Europe (IDATE)⁹³, Portugal has a cabled household penetration rate above the Europe average. Regarding the growth in the number of cabled households, Portugal had the third highest average annual growth rate among the considered countries.

It should be remembered that the considerable differences among the several considered countries is mainly due to the fact that in some countries the cable

infrastructure has been used since very early as the main medium for distributing television channels (e.g. in Belgium and Holland, where television reception was, already in 1995, mostly done via cable), while in other countries television broadcasting was initially made with analogue hertzian television, with the installation of cable networks only occurring much later.



Source: IDATE.

Note: Figures for 2004 are estimated by IDATE.

II.7.4.2 Service's usage level (subscribers)

Below are the number of subscribers and their penetration, and the number of television distribution service customers using the DTH technology.

II.7.4.2.1 Evolution of the number of subscribers

At the end of 2005 there were about 1.4 million subscribers to the cable television distribution service, 57,000 more than in the previous year.

Table 97 – Number of CDS subscribers

Subscribers	2000	2001	2002	2003	2004	2005
North	192,367	246,581	291,281	314,911	317,728	327,636
Centre	113,888	137,218	155,652	161,764	161,211	167,996
Lisbon*	499,391	592,939	644,387	678,338	675,943	707,391
Alentejo	16,429	22,827	35,159	35,111	36,327	38,111
Algarve	31,053	38,401	47,549	49,245	48,826	50,988
Autonomous Region of the Azores	31,635	35,483	36,680	37,881	38,751	40,047
Autonomous Region of Madeira	40,127	45,893	51,156	56,461	62,365	66,073
Total	924,890	1,119,342	1,261,864	1,333,711	1,341,151	1,398,242

Source: ICP-ANACOM

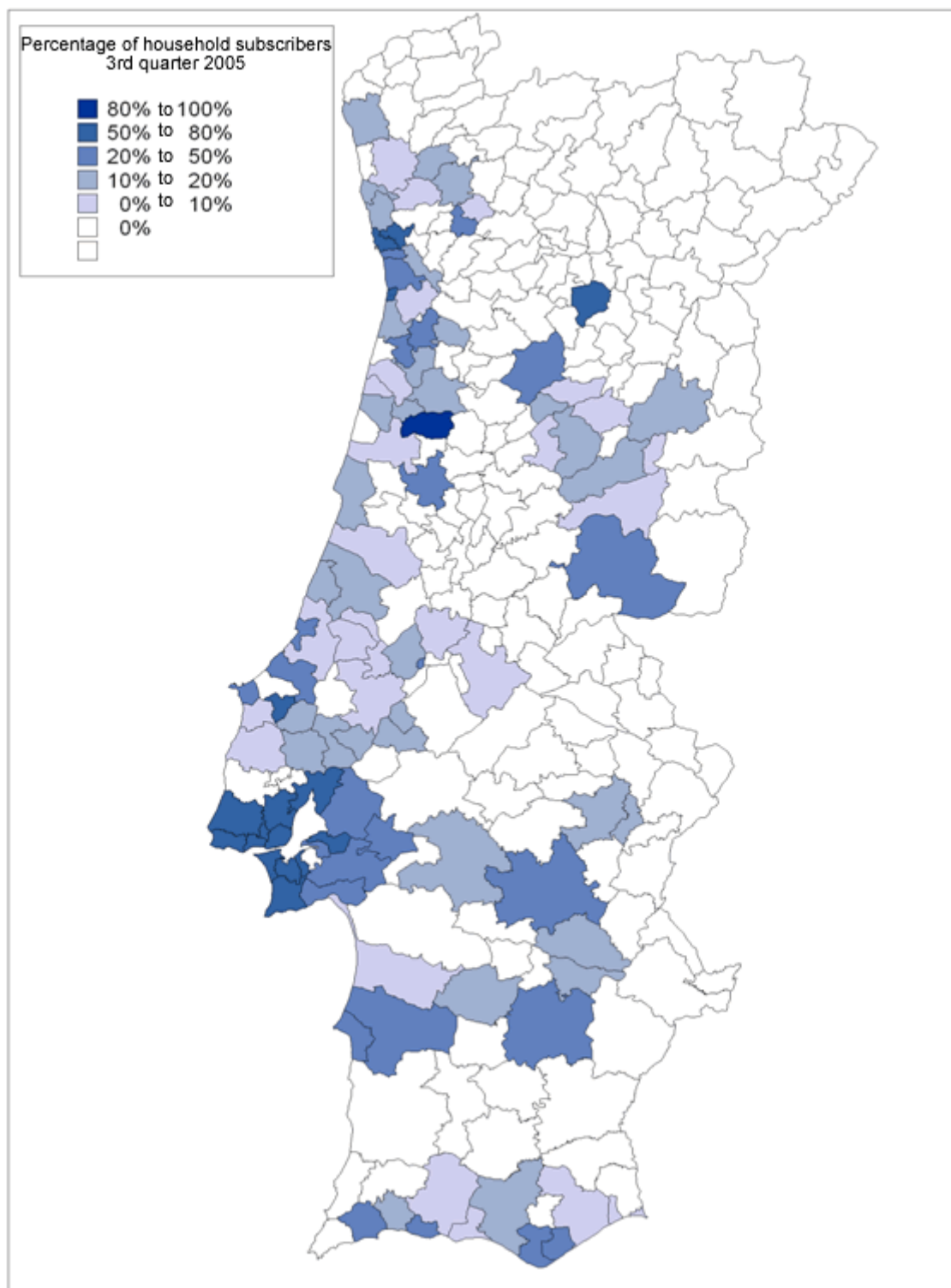
* The provision of the service by more than one operator in the same region may imply multiple cabling of the same household. This fact has been gaining importance, namely in the Lisbon area, leading to figures above 100 per cent for this indicator.

Between 2000 and 2005, an average of about 95,000 subscribers per year subscribed to this service, which corresponds to an annual average growth rate of 9 per cent. The subscribers' growth rate in that year was of 4.3 per cent.

The greatest relative growths occurred in Alentejo, North, Algarve and Madeira.

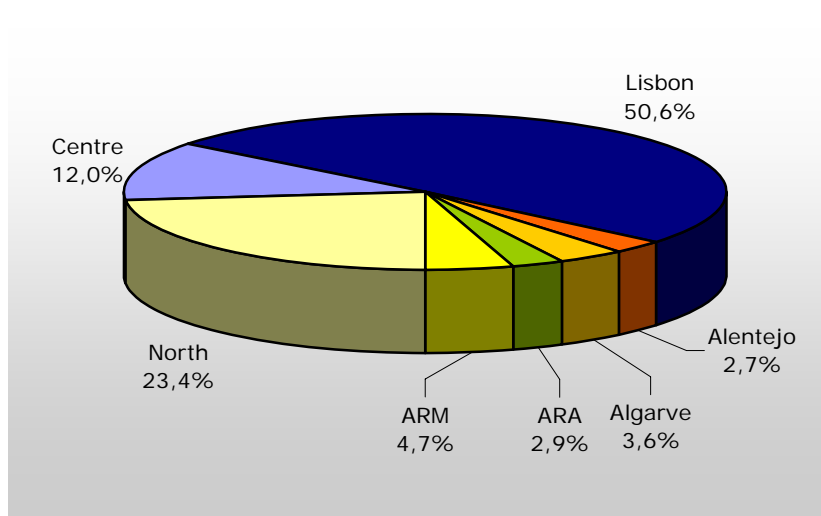
Regarding the geographical distribution of the subscribers to this service, its pattern is similar to the one registered in cabled households: subscribers are concentrated in the Greater Lisbon, Greater Porto, Setúbal Peninsula, North coast and in the Algarve. The Autonomous Regions of Madeira and the Azores also have a considerable number of subscribers.

Graph 110 – Geographical distribution of subscribers



Source: ICP-ANACOM

Currently, Lisbon has about 50.6 per cent of subscribers, while subscribers in the North stand for about 23.4 per cent of the overall figure.

Graph 111 – Distribution of subscribers by NUTS II – 2005

Source: ICP-ANACOM

Table 98 – Distribution of subscribers by NUTS II – 2005

NUTS II	2000	2001	2002	2003	2004	2005
North	20.8%	22.0%	23.1%	23.6%	23.7%	23.4%
Centre	12.3%	12.3%	12.3%	12.1%	12.0%	12.0%
Lisbon*	54.0%	53.0%	51.1%	50.9%	50.4%	50.6%
Alentejo	1.8%	2.0%	2.8%	2.6%	2.7%	2.7%
Algarve	3.4%	3.4%	3.8%	3.7%	3.6%	3.6%
Autonomous Regions of the Azores	3.4%	3.2%	2.9%	2.8%	2.9%	2.9%
Autonomous Regions of Madeira	4.3%	4.1%	4.1%	4.2%	4.7%	4.7%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: ICP-ANACOM

The fast increase in the number of subscribers to this service is compatible with the evolution of the first phases of a service's life cycle. It is considered that the number of subscribers has been equally influenced by the following factors:

- Launch of new offers – namely, additional channels and in Portuguese, and the successive offer of new *premium* channels and *premium* channel packages – fostering the interest of new subscribers and making it possible to increase revenues by subscribers;
- The package offer of broadband Internet access and voice services have contributed to the increase of new clients;
- The generalized existence of promotional offers that reduced, and in some cases eliminated, prices for service access (installations, prices of terminal

equipment) should also be noted. In some cases, these offers were made further to competition increase in areas with more than one operator.

The decrease in the growth rate of the number of customers, which occurred after 2002, globally affecting all regions, may be due to:

- The economic period. Some operators reported an increase in customers' debts that may indicate the existence of financial difficulties and, thus, a lower possibility to consume this type of services;
- The development of the DTH service;
- The development of ADSL accesses as an Internet broadband access alternative to cable modem;
- Possibly, due to the entry of this service into a maturity stage. The launch of new offers may change this situation.

The highest growth rates occurred outside the areas of initial implementation of the cable television distribution networks, although it is in those more populated areas that the service is more widespread. These facts are explained by the operators' investment strategies described in the section concerning cabled households.

II.7.4.2.2 Service penetration in terms of subscribers

The subscriber penetration rate, as a percentage of the whole populations, reached 13.3 per cent in 2005.

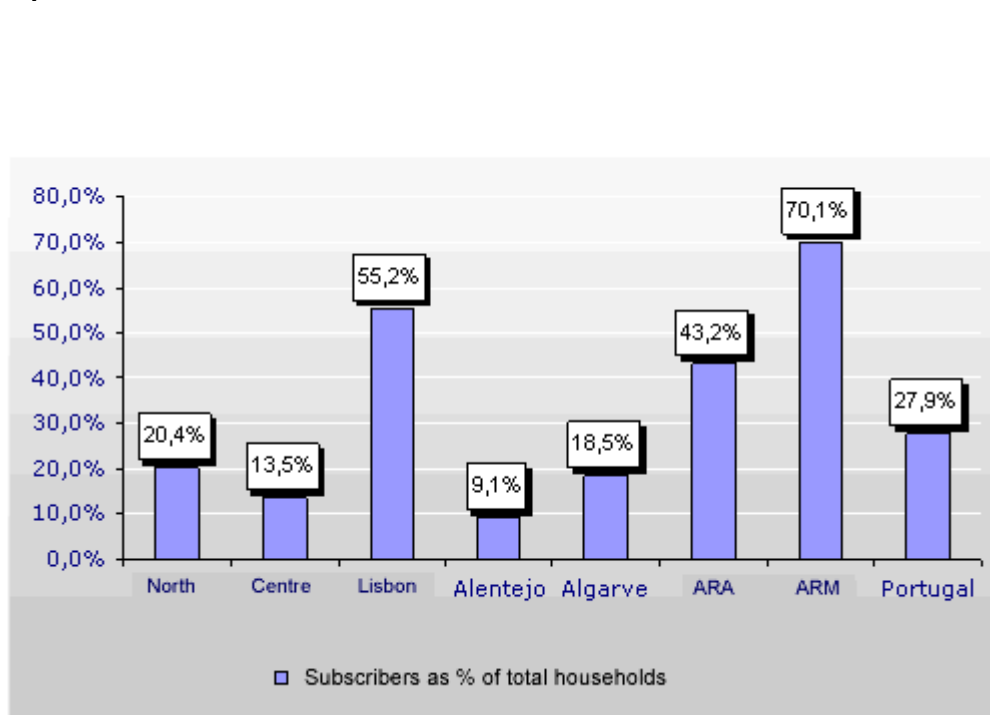
Table 99 – TV cable subscriber penetration vs. population

NUTS II	2000	2001	2002	2003	2004	2005
North	5.3%	6.7%	7.9%	8.5%	8.5%	8.8%
Centre	4.9%	5.9%	6.6%	6.8%	6.8%	7.1%
Lisbon	18.9%	22.3%	24.2%	24.8%	24.5%	25.6%
Alentejo	2.1%	2.9%	4.5%	4.6%	4.7%	5.0%
Algarve	7.9%	9.7%	12.0%	12.1%	11.9%	12.4%
Autonomous Region of the Azores	13.2%	14.7%	15.2%	15.8%	16.1%	16.6%
Autonomous Region of Madeira	16.5%	18.8%	20.9%	23.2%	25.5%	27.0%
Total	9.0%	10.8%	12.2%	12.7%	12.7%	13.3%

Source: ICP-ANACOM

Between 2000 and 2005, the subscribers' penetration rate in regards to the whole population grew 4.3 per cent, with highlight to the growth registered in the Lisbon area and in the Autonomous Regions of Madeira. During this period the same growth trends were also registered, *i.e.*, a slowing down was registered from 2002 on.

In 2005, the cable television subscribers' penetration rate, reckoned as a percentage of Portuguese households, stood at 28 per cent.

Graph 112 – Penetration of the number of subscribers in terms of total households

Source: ICP-ANACOM

In the period between 2000 and 2005, the penetration of cable television subscribers versus all Portuguese households increased 9.5 per cent, again with highlight to the growths registered in Lisbon and in the Autonomous Region of Madeira. During this period, the previously registered growth trends occurred.

Table 100 – Cable TV subscriber penetration vs. total households

NUTS II	2000	2001	2002	2003	2004	2005
North	12.0%	15.4%	18.1%	19.6%	19.8%	20.4%
Centre	9.1%	11.0%	12.5%	13.0%	12.9%	13.5%
Lisbon	39.0%	46.3%	50.3%	52.9%	52.7%	55.2%
Alentejo	3.9%	5.4%	8.4%	8.3%	8.6%	9.1%
Algarve	11.2%	13.9%	17.2%	17.8%	17.7%	18.5%
Autonomous Region of the Azores	34.2%	38.3%	39.6%	40.9%	41.8%	43.2%
Autonomous Region of Madeira	42.6%	48.7%	54.3%	59.9%	66.2%	70.1%
Total	18.4%	22.3%	25.1%	26.6%	26.7%	27.9%

Source: ICP-ANACOM

Versus cabled households, subscribers' penetration reached 37 per cent in 2005. An effort to maximize profits from the installed infrastructure in the autonomous regions and in Alentejo is apparent. The autonomous regions reach very high penetration and Madeira, in particular, recorded the highest penetration growth during this period.

Table 101 – Cable TV subscribers vs. cabled households

NUTS II	2000	2001	2002	2003	2004	2005
North	30.0%	32.1%	33.8%	34.6%	32.7%	32.2%
Centre	28.5%	31.3%	33.6%	33.8%	32.2%	31.8%
Lisbon	40.4%	40.8%	40.0%	40.8%	39.7%	40.3%
Alentejo	23.3%	27.4%	29.6%	28.8%	29.4%	29.8%
Algarve	24.1%	25.7%	27.6%	27.7%	26.4%	25.9%
Autonomous Region of the Azores	62.6%	67.3%	68.9%	69.9%	69.9%	71.7%
Autonomous Region of Madeira	54.4%	59.3%	63.1%	66.6%	71.7%	72.2%
Total	35.6%	37.0%	37.5%	38.2%	37.0%	37.0%

Source: ICP-ANACOM

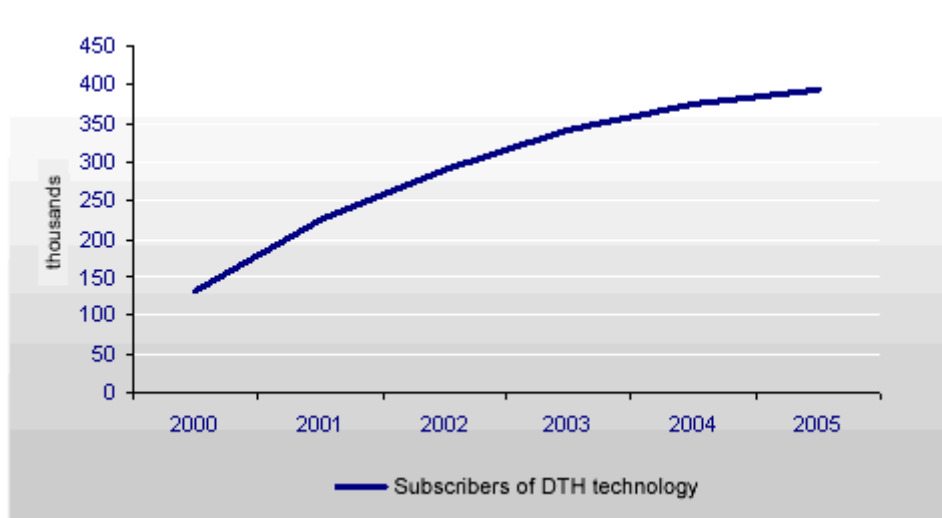
The global evolution globally of these three sets of indicators is explained by the previously mentioned factors. However, the specific factors that explain the growth registered in the Autonomous Region of Madeira during the last two years should be mentioned.

On 6 August 2004 a Protocol was established between the Republic's Government, the Regional Government of Madeira, ICP-ANACOM and Cabo TV Madeirense, S.A., with the purpose of guaranteeing the conditions for the citizens of the Autonomous Region of Madeira to access the open-to-air channels available on the Mainland, namely RTP1, RTP2, SIC and TVI. The access is provided via the cable network or the satellite platform operated by Cabo TV Madeirense. The above mentioned protocol was responsible for the recent evolution of the penetration that occurred in Madeira.

II.7.4.2.3 DTH Service

It should be underlined that the aforementioned data concerning subscribers of the cable distribution service do not include the subscribers of the already mentioned DTH (satellite) television distribution service. However, the number of DTH customers is relevant for a better understanding of paid television, since the DTH service is an important component of the activity of some operators of cable distribution networks (CATVP, Cabo TV Madeirense, Cabo TV Açoreana).

In this sense, the graph below shows the evolution of the number of subscribers to this technology between 2000 and 2005.

Graph 113 – DTH TV subscribers' annual evolution

Source: ICP-ANACOM

At the end of 2005, the number of subscribers to the satellite television distribution service reached 394,000. In 2005 this service registered a 5.1 per cent growth, which in absolute terms means 19,000 new subscribers. Between 2000 and 2005, the DTH service grew at higher rates than those of the cable distribution service.

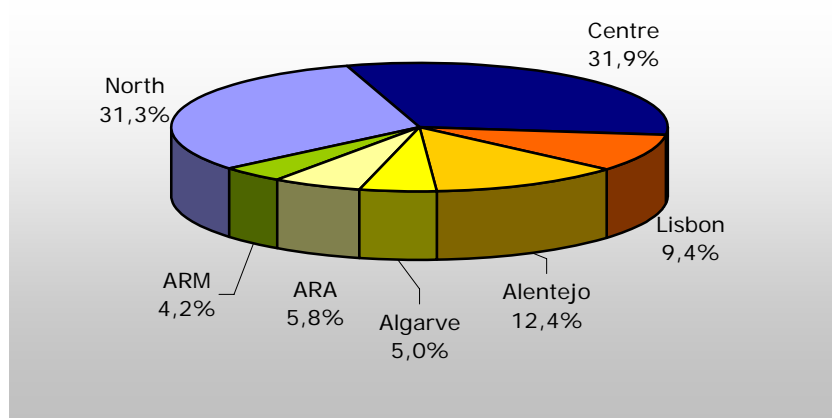
It should be mentioned that the growth rates in Madeira are also explained by the previously mentioned protocol.

Table 102 – Number of DTH subscribers

NUTS II	2000	2001	2002	2003	2004	2005
North	n.a.	69,947	92,530	111,116	123,306	123,444
Centre	n.a.	68,569	91,686	112,683	124,568	125,696
Lisbon	n.a.	25,006	29,338	31,167	33,345	37,213
Alentejo	n.a.	30,400	39,481	45,126	48,200	48,728
Algarve	n.a.	15,990	17,522	19,338	20,243	19,703
Autonomous Region of the Azores	n.a.	12,243	15,836	18,086	20,450	23,047
Autonomous Region of Madeira	n.a.	1,671	2,604	3,949	5,179	16,662
Total	131,545	223,826	288,997	341,465	375,291	394,493

Source: ICP-ANACOM

The figures concerning the geographical distribution of DTH technology subscribers kept practically unchanged in 2005. The North and Centre regions concentrated the highest share of this technology's users.

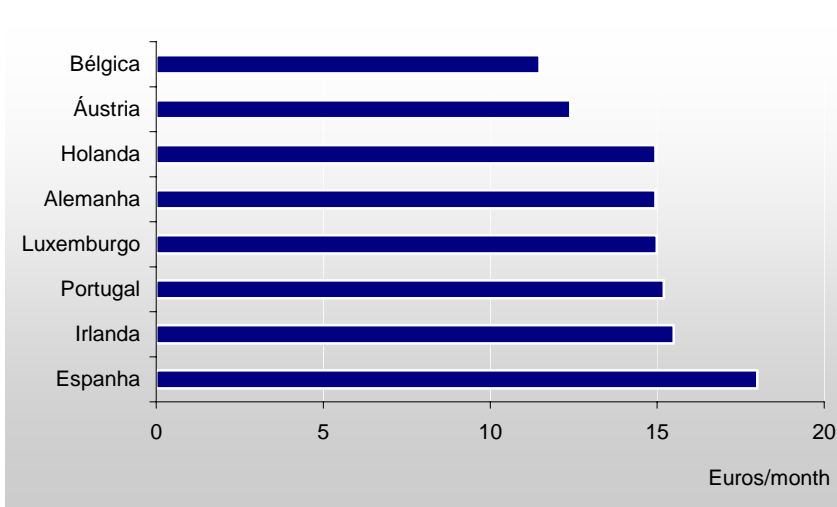
Graph 114 – Distribution of DTH TV subscribers by NUTS II – 2005

Source: ICP-ANACOM

As can be seen, during this period the growth of DTH was faster than that of the cable networks and its geographical distribution partly complements the cable services.

II.7.4.3 Prices

As can be seen on the following table, the prices of the cable distribution service in Portugal are slightly higher than the average values of the considered countries. It should be mentioned that the sample of considered countries has a small size, due to constraints in collecting comparable data.

Graph 115 – CDS price in January 2006

Source: Operators' websites.

II.7.4.4 Competition development

After a considerable fall between 2000 and 2002 (about 8 per cent) Grupo PT's subscribers share reached, in 2005, the figure of 78.2 per cent.

Table 103 – Grupo PT's subscriber share

2000	2001	2002	2003	2004	2005
87.4%	82.9%	79.6%	80.7%	79.4%	78.2%

Source: ICP-ANACOM

II.8 Postal services

This chapter contains the state of postal services at the end of 2005, as well as their evolution during that year.

II.8.1 Main items of the postal services' evolution in 2005

- Between 2002 and 2005, postal traffic decreased at an average annual rate of -0.1 per cent. However, traffic volume stabilized in the last year.
- Traffic of the liberalized area stands for about 19.3 per cent of all traffic. The evolution of this type of traffic was determined by the decrease of the weight and price limits that framed the reserved area and which occurred in mid 2003.
- Grupo CTT maintains very high market shares in the services not framed by the express mail category. Regarding express mail, new operators altogether are responsible for 57 per cent of the traffic.
- The prices of the universal service-enclosed provisions have registered falls in real terms and stand below the EU15 average.
- The quality indicators of the universal service evolved positively during the year.
- In 2005, there was a 1 per cent increase in the number of employees of the postal sector vis-à-vis the previous year. The companies of Grupo CTT continue to be mainly responsible for this indicator's evolution.

II.8.2 Postal services' offer

The postal sector in Portugal includes all entities and activities in connection with the establishment, management and operation of postal services on the national territory, as well as the international services with origin or destination on the national territory.

The first segmentation of the sector is the definition of universal service.

In Portugal, the universal service is the “permanent offer of postal services with a specified quality, provided on all locations of the national territory, at affordable prices to all users, aiming to the satisfaction of the communication’s needs of the population and of the economic and social activities”⁹⁴.

The scope of the universal service includes a postal service of sending correspondence, books, catalogues, newspapers and other periodicals weighting up to 2 Kg, and postal parcels up to 20 kg, as well as a service of registered sendings and a service of declared values, nationally and internationally.

To ensure the economic and financial viability of the universal service provision, there is a set of services – reserved postal services – that are exclusively provided by the universal service operator⁹⁵.

All the postal services not included in the definition of reserved postal services are operated in competition and may be provided by the entity that provides the universal service or by single or collective legal persons properly entitled for the purpose. An individual licence system applies to the provision of postal services that are non-reserved or not included in the scope of the universal service. The provision of postal services that are non-reserved and not included in the scope of the universal service is subject to a legal authorization, which regime is characterized by being relatively less demanding, both in terms of requisites to access the activity and in the setting of obligations.

II.8.2.1 Postal services

The following table sums up, with reference to the legal framework applying at the end of 2005, the reserved postal services, provided exclusively by CTT, and the non-reserved services, which could be provided by any entity entitled for that purpose.

Table 104 – Reserved and non-reserved postal services

Postal services	Name	Provider
Reserved services	<ul style="list-style-type: none"> Postal service of sending correspondence, including addressed publicity, whether or not with express delivery, which price is three times lower than the public tariff for sending a 1st class correspondence of the fastest standardized weight category, as long as it weights less than 100gr; nationally and internationally; Postal service of sending registered correspondence and declared-value correspondence, including legal notices by mail and penal notice by mail service, within the same price and weight limits mentioned in the previous paragraph nationally and internationally; Issuance and sale of stamps and other postal values; Issue/issuance of money orders; Placing of mail stands and mail boxes for the collection of postal sending in public areas 	CTT (operation under Concession Contract)
Non-reserved services (national and international scope)	<p><u>Operation under a licence</u></p> <ul style="list-style-type: none"> Postal service of sending correspondence, including addressed publicity, whether or not with express delivery, which price is three times lower than the public tariff for sending a 1st class correspondence of the fastest standardized weight category, as long as it weights as much or more than 100gr; nationally and internationally; Postal service of sending books, catalogues, newspapers and other periodicals, weighing up to 2kg; Postal parcel service with up to 20kg; Postal service of sending registered correspondence and declared-value correspondence, including the legal notice by mail and the penal notice by mail service not included within the aforementioned price and weight limits <p><u>Operation under an authorization</u></p> <ul style="list-style-type: none"> Express mail services (also usually known as <i>courier</i>). This service is characterized by the extra-fast acceptance/collection, handling, transportation and distribution of correspondence and parcel, being different from the corresponding basic services by fulfilling the following characteristics, among others: pre-defined delivery deadline; record of sendings; responsibility guarantee from the authorized provider; tracking of the sendings; Operation of document exchange centres – places where the users may self-distribute by the mutual exchange of postal sendings, having their own mail boxes; in order to do so, the users must form a group of subscribers, further to subscribing that service. Other services that fall in the definition of universal service and that are not included in the universal service's range, namely those which provision is made possible by technological evolution and that are different from traditional services. 	CTT and other entities entitled to provide postal services (further to a licence or authorization)

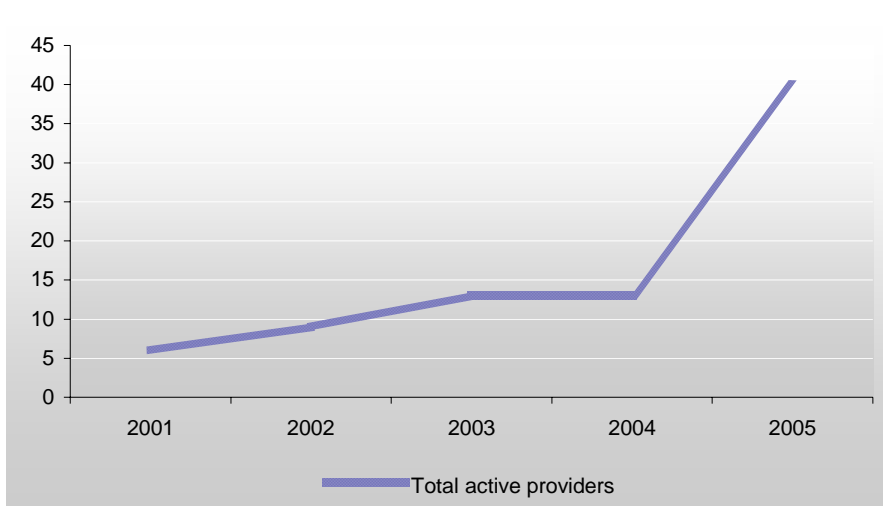
Source: ICP-ANACOM

In pursuing their activity, the entities providing postal services are based on a set of human and material means which make up the postal network⁹⁶.

II.8.2.2 The postal service providers

Between 2004 and 2005 there was a considerable increase in the number of providers on the market. This resulted from the entitling of 24 franchised entities from the company Ibercourier – Serviço de Transporte Urgente, Lda., which have small sized postal networks. In Portugal, Ibercourier operates the MRW *Worldwide Courier* brand.

Graph 116 – Evolution of the postal services providers in activity



Source: ICP-ANACOM

The following tables contain the postal service providers, the title authorizing them and its date of issuance, with all the entitled entities being active at the end of 2005. Some also operate in other markets, namely in the transportation of goods, and have activities complementary to the postal one.

Table 105 –Entitled providers of services not covered by the express mail category

Entity	Licence no.	Date of issue	Provided services
CTT Correios de Portugal, S.A.*			Sending of correspondence, including addressed advertising (direct mail), books, catalogues, newspapers and other periodicals. Postal parcels.

CTTexpresso – Serviços Postais e Logística, S.A.**	ICP-01/2001-SP	01-10-2001	Sending of correspondence, including addressed advertising (direct mail), books, catalogues, newspapers and other periodicals. Postal parcels.
SDIM – Sociedade de Distribuição de Imprensa da Madeira, Lda.	ANACOM-01/2002-SP	13-12-2001	Distribution of books, catalogues, newspapers and other periodicals.
Notícias Direct – Distribuição ao Domicílio, Lda.	ANACOM-02/2002-SP	13-12-2001	Distribution of books, catalogues, newspapers and other periodicals.
MEEST Portugal – Unipessoal, Lda.	ICP-01/2005-SP	07-07-2005	Postal parcels.
TEX – Transporte de Encomendas Expresso, Lda.	ICP-02/2005-SP	15-07-2005	Postal parcels.

Source: ICP-ANACOM

* The universal postal service concessionary (CTT) can operate non-reserved services and services that are not included in the scope of the universal service, without no need of an additional authorizing title.

** On 1 September 2003 ICP-ANACOM authorized the transmission of the licence held by Postexpresso – Correio de Cidade, Lda to Postlog – Serviços Postais e Logística, S.A. which, from the 4th quarter of 2004 was named CTTexpresso – Serviços Postais e Logística, S.A..

Table 106 – Entitled providers of express mail services

Entity	Licence no.	Date of issue	Provided services
CTTexpresso – Serviços Postais e Logística, S.A.	ICP-01/2001-SP	01-10-2001	Express mail
DHL – Transportes Rápidos Internacionais, Lda.	ICP-03/2001-SP	13-12-2001	Express mail
Chronopost Portugal – Transporte Internacional, S.A.	ICP-04/2001-SP	13-12-2001	Express mail
TNT Express Worldwide (Portugal), S.A.	ICP-05/2001-SP	13-12-2001	Express mail
UPS of Portugal – Transportes Internacionais de Mercadorias, Lda.	ANACOM-01/2002-SP	17-10-2002	Express mail
Rangel Expresso, S.A.	ANACOM-02/2002-SP	19-12-2002	Express mail
Federal Express Corporation – Sucursal em Portugal	ANACOM-01/2003-SP	10-04-2003	Express mail
GL Transportes, Unipessoal, Lda.	ANACOM-02/2003-SP	13-05-2003	Express mail
Guipuzcoana Transportes Coimbra, Unipessoal, Lda.	ANACOM-03/2003-SP	13-05-2003	Express mail
Guipuzcoana Transportes Porto, Unipessoal, Lda.	ANACOM-04/2003-SP	13-05-2003	Express mail
Ibercourier – Serviço de Transporte Urgente, Lda.	ANACOM-01/2005-SP	09-02-2005	Express mail
Logista – Transportes, Lda.	ANACOM-02/2005-SP	09-05-2005	Express mail
Lisespo – Transportes, Lda.	ANACOM-03/2005-SP	15-07-2005	Express mail
Halley – Encomendas Rápidas, Lda.	ANACOM-04/2005-SP	08-09-2005	Express mail
Cavijo – Logística e Marketing, Lda.	ANACOM-05/2005-SP	08-09-2005	Express mail
Transworld Express – Correio Expresso, Lda.	ANACOM-06/2005-SP	08-09-2005	Express mail
Nuno Miguel Alves, Unipessoal, Lda.	ANACOM-07/2005-SP	08-09-2005	Express mail

Globe Logistics – Empresa de Courier, Logística e Transportes	ANACOM-08/2005-SP	08-09-2005	Express mail
Fozpost – Entrega e Recolha de Encomendas, Lda.	ANACOM-09/2005-SP	08-09-2005	Express mail
Mensageiro Azul – Serviços de Courier, Lda.	ANACOM-10/2005-SP	08-09-2005	Express mail
RANEXPRESS – Transportes Rodoviários, Lda.	ANACOM-11/2005-SP	08-09-2005	Express mail
Passo Rápido – Recolha e Entrega de Documentos, Lda.	ANACOM-12/2005-SP	08-09-2005	Express mail
Francisco & Silvina – Transportes de Documentos e Encomendas, Lda.	ANACOM-13/2005-SP	08-09-2005	Express mail
MAILGLOBE – Transporte de Correio Urgente, Lda.	ANACOM-14/2005-SP	08-09-2005	Express mail
Água Lusa Transportes, Sociedade Unipessoal, Lda.	ANACOM-15/2005-SP	08-09-2005	Express mail
EXPRESSODÃO – Transporte de Mercadorias, Lda.	ANACOM-16/2005-SP	08-09-2005	Express mail
FOXIL – Gestão de Transportes, Lda.	ANACOM-17/2005-SP	08-09-2005	Express mail
Transportes António Garcia & César, Lda.	ANACOM-18/2005-SP	08-09-2005	Express mail
P.P.Expresso – Transportes de Mercadorias, Lda.	ANACOM-19/2005-SP	08-09-2005	Express mail
Portipost – Serviço de Transportes Urgentes, Lda.	ANACOM-20/2005-SP	08-09-2005	Express mail
JáEstá – Tráfego e Serviços Logísticos, Lda.	ANACOM-21/2005-SP	08-09-2005	Express mail
Multitagus – Transportes e Serviços, Lda.	ANACOM-22/2005-SP	27-09-2005	Express mail
Iberenvios – Actividades Postais e Transportes, Unipessoal, Lda.	ANACOM-23/2005-SP	27-09-2005	Express mail
Princeps – Comércio por Grosso, Lda.	ICP-ANACOM-24/2005-SP	04-11-2005	Express mail
Portomail – Transporte de Documentos e Encomendas, Lda.	ICP-ANACOM-25/2005-SP	04-11-2005	Express mail
ER – Encomendas Rápidas, Lda.	ICP-ANACOM-26/2005-SP	23-11-2005	Express mail

Source: ICP-ANACOM

II.8.3 Postal services' consumption profile

In 2005 ICP-ANACOM surveyed the use of postal services⁹⁷. The main results of that survey are shown below.

The normal mail service and the priority (blue) mail service are the most used ones among all types of mail. The recent beginning of the offer of pre-paid (green) mail⁹⁸ and the price of the express services are at the base of the low consumption level of these two types of postal services.

Postal services are more intensely used by individuals at working age, with highlight to the 25 to 30 years old age group.

Table 107 – Use of postal services by age group

Age group	Normal mail	Priority (blue) mail	Express mail	Pre-paid (green) mail	Parcels
15-24	51.9%	47.8%	5.5%	5.0%	11.0%
25-30	64.0%	54.1%	9.0%	7.2%	19.8%
31-49	56.3%	51.8%	5.6%	3.9%	13.8%
50-64	55.5%	42.4%	4.8%	0.9%	12.7%
65-more	41.8%	18.2%	0.9%	0.5%	5.2%

Source: Survey on the use of postal services 2005

Table 108 – Number of correspondence sendings during the last year by interviewee, by interviewee and age group

Age group	Normal mail	Priority (blue) mail	Express mail	Pre-paid (green) mail	Mail orders / Parcels / Packages
15-24	2.5	2.0	0.1	0.2	1.7
25-30	4.1	3.0	0.2	0.3	1.5
31-49	2.9	2.8	0.3	0.2	1.9
50-64	3.8	2.2	0.1	0.0	2.0
65-mais	1.9	0.7	0.0	0.1	1.9

Source: Survey on the use of postal services 2005

The use of postal services is greater among customers with higher education levels. There seems to be a positive relationship between the education level and the use of postal services.

Table 109 – Use of postal service by education level

Education level	Normal mail	Priority (blue) mail	Express mail	Pre-paid (green) mail	Parcels
Above 12th grade	62.6%	65.9%	14.3%	6.6%	20.9%
12th grade	63.6%	57.6%	8.6%	8.6%	18.5%
Between 6th and 9th grade	55.9%	49.5%	5.2%	3.4%	11.9%
Up to primary education	45.7%	28.4%	1.5%	0.4%	8.2%

Source: Survey on the use of postal services 2005

The higher income classes are those that more intensely use mail.

Table 110 – Use of postal services by social status

Social class	Normal mail	Priority (blue) mail	Express mail	Pre-paid (green) mail	Parcels
High (A)	65.4%	69.2%	23.1%	11.5%	23.1%
Medium high (B)	63.1%	64.0%	9.9%	7.3%	25.2%
Medium (C)	64.5%	52.4%	5.9%	8.1%	17.7%
Medium low (D)	48.6%	35.7%	3.2%	1.2%	7.5%
Low (E)	48.6%	41.1%	2.7%	0.5%	10.9%

Source: Survey on the use of postal services 2005

The use of postal services in each region varies with the type of mail. For example, priority and express mail services are more used in the Autonomous Region of Madeira. With the exception of green mail, the use of postal services is higher in the Inland and Centre coast than in the cities of Lisbon and Porto.

Table 111 – Use of postal services by region

Regions	Normal mail	Priority (blue) mail	Express mail	Pre-paid (green) mail	Parcels
North coast	46.2%	42.3%	5.5%	2.8%	12.6%
Porto	56.8%	42.4%	8.5%	5.1%	15.3%
Center coast	58.0%	53.9%	4.7%	5.2%	9.8%
Inland	58.1%	44.6%	6.6%	3.0%	16.3%
Lisbon	46.4%	40.3%	2.7%	2.7%	7.5%
Alentejo	57.1%	36.0%	2.0%	2.0%	20.4%
Algarve	86.4%	27.3%	0.0%	0.0%	11.4%
Madeira	50.0%	72.7%	13.6%	0.0%	27.3%
Azores	40.9%	0.0%	9.1%	0.0%	4.5%

Source: Survey on the use of postal services 2005

The Autonomous Region of Madeira has a greater average amount of postal sendings: altogether, about 6 sendings per year. However, analysing each type of mail individually, although Madeira continues to be the region that most uses priority (blue) mail, express mail and parcel services, the same is not true for the normal and green services, where Alentejo and Porto have greater average amounts of sent postal objects per year: 5.3 and 0.3 objects, respectively.

Table 112 – Amount of correspondence sendings during the last year, by interviewee and by region

Regions	Normal mail	Priority (blue) mail	Express mail	Pre-paid (green) mail	Parcels
North coast	2.8	2.4	0.3	0.1	1.7
Porto	3.9	2.9	0.2	0.3	2.0
Centre coast	3.5	2.8	0.1	0.2	2.2
Inland	2.6	1.9	0.1	0.0	1.8
Lisbon	2.1	1.8	0.1	0.1	1.6
Alentejo	5.3	1.1	0.1	0.2	1.8
Algarve	4.5	0.6	0.0	0.0	1.3
Madeira	2.0	4.3	0.6	0.0	2.0
Azores	1.3	0.0	0.4	0.0	1.0

Source: Survey on the use of postal services 2005

Lastly, it should be mentioned that Internet use does not seem to hinder the use of postal services, or influence the mail order service.

Table 113 – Amount of correspondence sendings during the last year, by interviewee and by Internet use

	Normal mail	Priority (blue) mail	Express mail	Pre-paid (green) mail	Parcels
Uses Internet	3.2	3.9	0.3	0.4	1.9
Does not use Internet	2.9	1.6	0.1	0.1	1.8

Source: Survey on the use of postal services 2005

II.8.4 The evolution of postal services in 2005

Below is a set of items on the performance of postal services in 2005: penetration, use of postal services, employment, network infrastructures, prices and perception of quality of the postal services from the consumers' standpoint.

II.8.4.1 Penetration

Between 2000 and 20005 the postal coverage index remained practically unchanged, standing at 21 access points per each 100km².

Table 114 – Postal coverage

	2000	2001	2002	2003	2004	2005
Postal coverage	21.7	22.9	21.5	21.5	21.3	20.9

Source: ICP-ANACOM, INE

Unit: No. of access points per 100km²

Note: INE's Portugal's Statistical Yearbook 2003; Portugal's total area is 91,947km².

Postal density registers a slight decrease, explained by the reduction in the number of access points.

Table 115 – Postal density

	2002	2003	2004	2005
Postal density	523	529	538	547

Source: ICP-ANACOM, INE

Unit: No. of inhabitants per access point

Note: INE's population projection for 31 December 2004: 10,529,255 inhabitants.

The penetration rate of postal services measured in terms of postal capitacion – postal traffic per inhabitant – and detailed by traffic destination did not change greatly.

Table 116 – Postal capitacion

	2002	2003	2004	2005
Postal capitacion	125	121	123	123
National traffic	118	115	117	118
Outgoing international traffic	6	6	5	5

Incoming international traffic	4	5	5	5
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Source: ICP-ANACOM, INE

Unit: postal traffic per inhabitant

Note: INE's population projection for 31 December 2004: 10,529,255 inhabitants.

II.8.4.2 Service's usage level

Global postal traffic stabilized in 2005.

Table 117 – Postal traffic

	2002	2003	2004	2005
Postal traffic	1,295,582	1,262,223	1,290,738	1,292,811
Reserved area	1,147,170	1,061,228	1,036,235	1,043,780
Liberalized area	148,412	200,994	254,503	249,031

Source: ICP-ANACOM

Unit: Thousands of objects

Note: The 2005 figures were corrected further to the data update sent by some providers after the publication of the 2004 Regulation Report.

It should be mentioned that the considerable traffic increases in the liberalized services in 2003 and 2004 only reflect the change in the boundary between reserved and liberalized areas. *I.e.*, the traffic increases in the liberalized area in those years were due to the new categorization of traffic that was previously classified as reserved. The first phase of the liberalization process started with the entry into force of Decree-Law 116/2003, of 12 June, and it had impact on the liberalized postal area's traffic from the 3rd quarter of 2003 on. As a result, the traffic of the liberalized postal area grew around 35.4 per cent in 2003 (versus the end of 2002). Later this effect had impact on the traffic in the four quarters of 2004 and justifies the 26.6 per cent increase in the liberalized traffic area, during that year.

Table 118 – Postal traffic in the liberalized area

	2001	2002	2003	2004	2005
Liberalized area	150,776	148,412	200,994	254,503	249,031
Correspondence	139,699	137,829	184,519	235,693	230,736
Parcels	11,076	10,584	16,475	18,810	18,295

Source: ICP-ANACOM

Unit: Thousand objects

Regarding the behaviour of postal traffic by traffic destination, while national traffic grew 0.6 per cent since 2002, international traffic decreased 16 per cent in the same period. This different behaviour also occurred in 2005. On that year, there was a stabilization of national traffic and a 21.1 per cent decrease in international traffic.

This evolution was influenced by the activity of distribution of addressed correspondence of the new competing operators and by the behaviour of the

companies of Grupo CTT in the international expedition of mail orders in the liberalized area and of correspondence in the reserved area.

Table 119 – Postal traffic by traffic destination

	2002	2003	2004	2005
Postal traffic	1,295,582	1,262,223	1,290,738	1,292,811
National	1,229,488	1,204,885	1,233,928	1,237,177
International	66,094	57,338	56,811	55,634

Incoming international	46,105	49,002	48,736	48,343
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Source: ICP-ANACOM

Unit: Thousands of objects

Note: The 2004 figures were corrected further to the data update sent by some providers after the publication of the 2004 Regulation Report.

Regarding traffic evolution by type of service, the growth in the segment of express mail services (15.4 per cent in 2005) stands out. This evolution is explained by the granting of titles to new entities for the provision of this type of services. Furthermore, this express mail service growth was mostly due to the new operators and, in particular, to their activity of distribution of addressed correspondence.

Table 120 – Postal traffic by type of service

	2002	2003	2004	2005
Postal traffic	1,295,582	1,262,223	1,290,738	1,292,811
Express	12,024	14,474	16,449	18,982
Not within the express category	1,283,558	1,247,748	1,274,289	1,273,829

Source: ICP-ANACOM

Unit: Thousands of objects

Note: The 2004 figures were corrected further to the data update sent by some providers after the publication of the 2004 Regulation Report.

II.8.4.3 Employment in postal services

Employment in postal services has shown a slightly downward trend. In 2005, there was a decrease of about 1 per cent in the number of employees of the postal sector vis-à-vis the previous year. The companies of Grupo CTT continue to be the main

responsible for this evolution in the employment indicator since, as demonstrated, employment in the companies of competition increased 10 per cent in that year.

Table 121 – Employment in postal services

	2000	2001	2002	2003	2004	2005
No. of employees	18.908	19.205	18.203	17.531	16.809	16.680
Grupo CTT	n.a.	n.a.	16.875	15.698	15.005	14.695
Other providers	n.a.	n.a.	1,328	1,833	1,804	1,985

Source: ICP-ANACOM

II.8.4.4 The postal network

The evolution of the material means of the global postal network held by the universal service provider and by the entities entitled for the provision of postal services operated in competition is shown on the following table.

Table 122 – Material means of the postal network

	2000	2001	2002	2003	2004	2005
No. of access points	19,942	21,080	19,775	19,798	19,563	19,257
No. of distribution points	457	453	460	459	462	446
Fleet of vehicles	5,366	5,304	5,138	5,608	5,362	5,807

Source: ICP-ANACOM

The fleet of vehicles had a year-to-date increase of more than 8 per cent.

The companies of Grupo CTT are responsible for the evolution registered in each one of these three postal network indicators since, except in the case of the fleet of vehicles, its competitors kept in 2005 the same number of access points and of distribution centres.

II.8.4.5 Evolution of competition

Analysing the market shares in each segment of traffic destinations, Grupo CTT's share has been practically unchanged, standing at about 99 per cent in the case of national traffic and around 97 per cent in the case of international traffic.

Table 123 – Postal traffic shares by postal destination

	2002		2003		2004		2005	
	CTT*	Other	CTT*	Other	CTT*	Other	CTT*	Other
National	99.2 %	0.8 %	98.9%	1.1%	98.8%	1.2%	98.8%	1.2%
International	99.0%	1.0%	97.8%	2.2%	97.6%	2.4%	96.6%	3.4%

Incoming intern.	99.2%	0.8%	95.6%	4.4%	94.6%	5.4%	90.7%	9.3%
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Source: ICP-ANACOM

* Includes CTT e CTTexpresso

Detail by type of service makes it possible to verify that Grupo CTT's share is quite high in the segment of services not included in the express mail category. In the case of express mail, the new operator holds, altogether a 57 per cent share.

Table 124 – Postal traffic shares by type of service

	2002		2003		2004		2005	
	CTT*	Other	CTT*	Other	CTT*	Other	CTT*	Other
Express	60.7%	39.3%	48.6%	51.4%	44.1%	55.9%	43.0%	57.0%
Not within the express category	99.5%	0.5%	99.4%	0.6%	99.4%	0.6%	99.6%	0.4%

Source: ICP-ANACOM.

* Includes CTT and CTTexpresso

II.8.4.6 Price level of the universal service

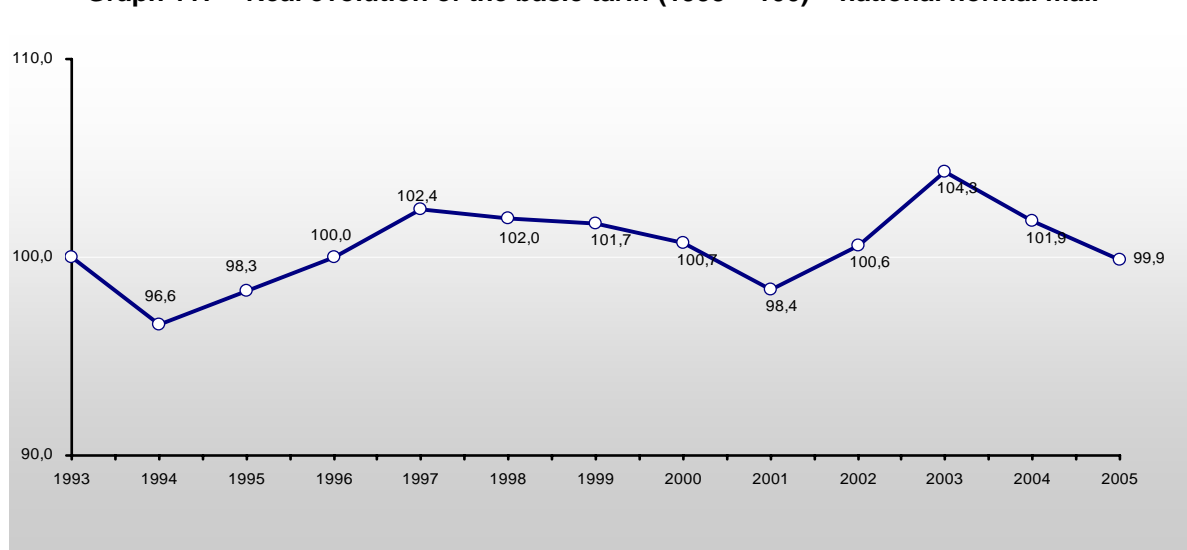
The rules for the setting of prices of the postal services that make up the universal service⁹⁹ are subject to an Agreement (Universal Postal Service Prices Agreement) established between the regulator (ICP-ANACOM) and the universal service provider.

According to the price agreement signed on 20 January 2004, the weighted average variation of the prices of the reserved postal services for 2005 could not be above CPI¹⁰⁰ -0.5 per cent, in nominal terms.

In the scope of the said Price Agreement, the average level of the postal services' prices increased 1.1 per cent in 2005.

In terms of evolution, one registers that in 2005 the price of the normal mail's basic tariff (tariff for a 20g national sending) stood, in real terms, at a very similar level to the one recorded in 1993 (it decreased 0.1 per cent).

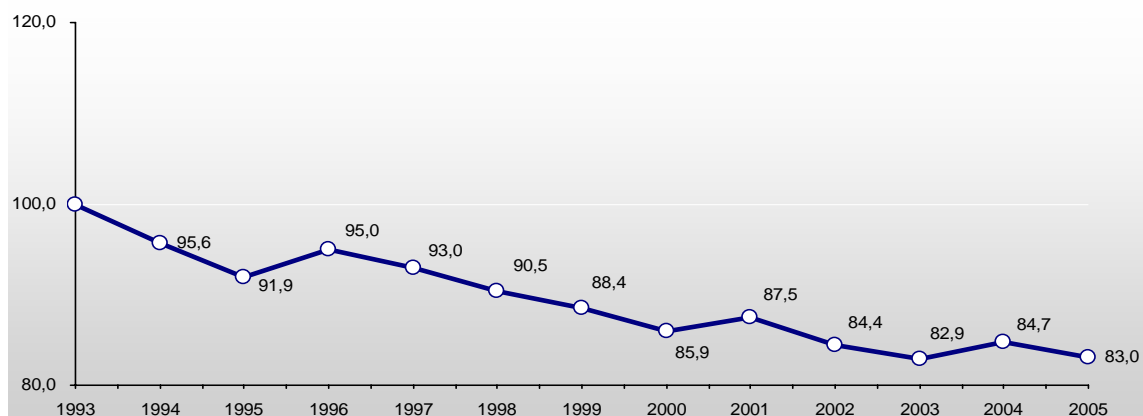
Graph 117 – Real evolution of the basic tariff (1993 = 100) – national normal mail



Source: ICP-ANACOM

On the other hand, the priority (blue) mail's basic tariff decreased 17 per cent in real terms, between 1993 and 2005.

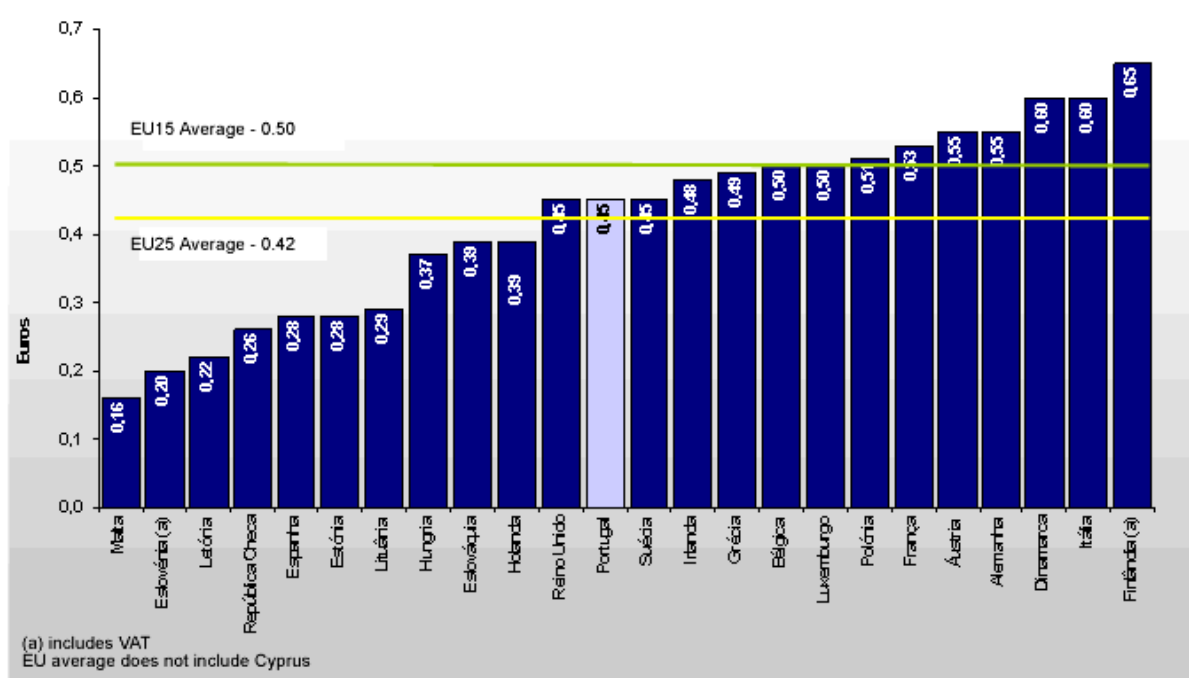
Graph 118 – Real evolution of the basic tariff – national priority mail



Source: ICP-ANACOM

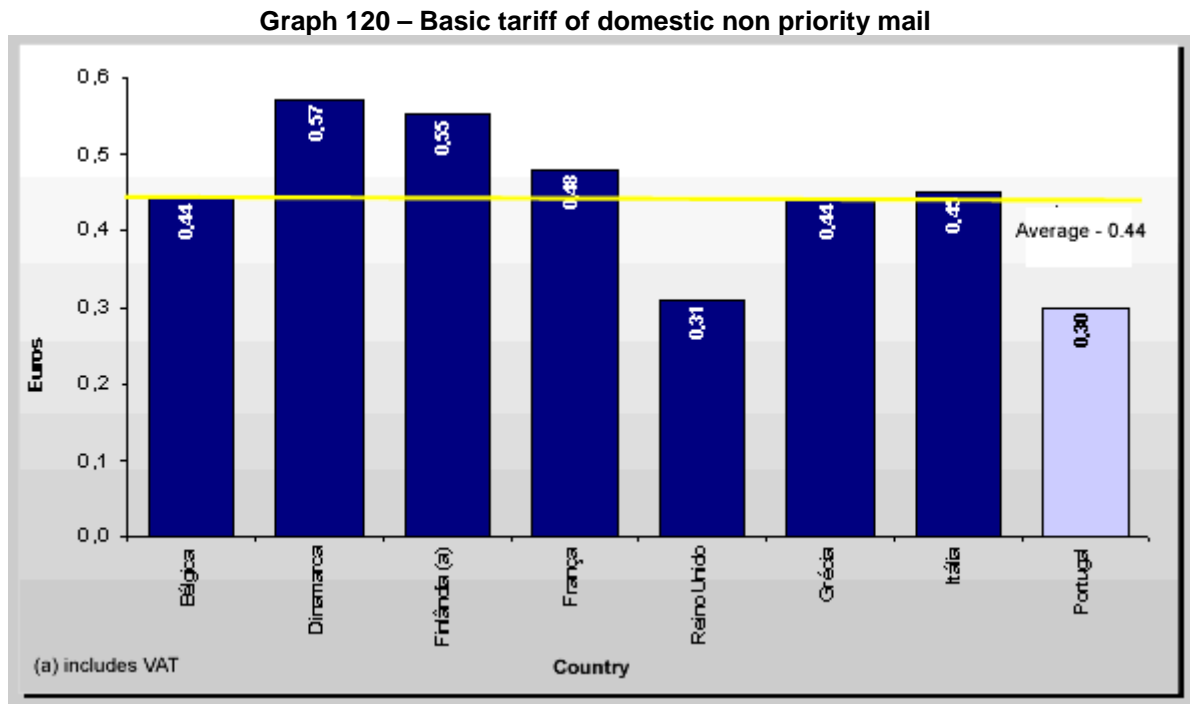
Regarding 2005, one notices that the price of the 20g national priority mail (blue mail)¹⁰¹ is i) 9.6 per cent below the EU 15¹⁰² average and ii) 6.4 per cent above the EU 24¹⁰³ average (not including Cyprus).

Graph 119 – Basic tariff of domestic priority mail



Source: ICP-ANACOM

On the other hand, one registers that the price of a 20g letter of non priority mail (normal mail) is 32.2 per cent above the average of the EU countries that provide an equivalent service.



Source: WIK, Main Developments in the European postal sector.

II.8.4.7 Quality of the universal service

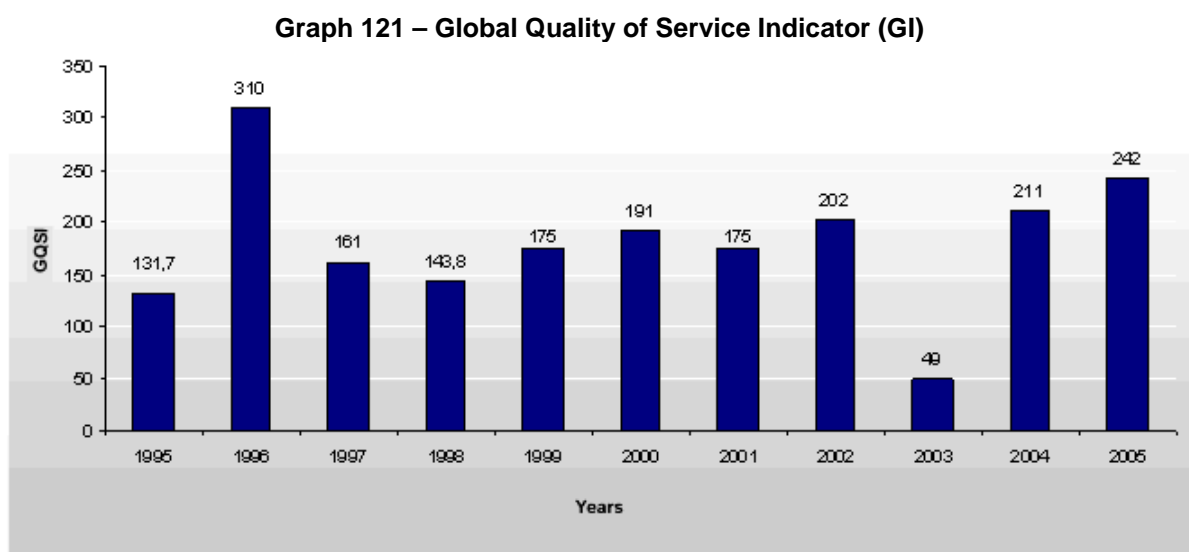
The parameters and quality of service levels associated to the provision of the universal services are set through an agreement established between ICP-ANACOM and CTT (Universal Service Quality Convention).

The quality convention that was in force between 20 January 2004 and 31 December 2005 defined the quality of service indicators (QSI) for i) delays in delivery if normal mail, priority mail, newspapers and periodicals, intercommunity mail and parcels, ii) loss of normal and priority mail, and for ii) waiting time at postal establishments. For each of the QSI there is a minimum and target level of quality if service defined. The target level is the one that CTT is expected to achieve, each year.

The Quality convention also sets a Global Quality of Service Indicator (GI), which is reckoned depending on the quality of service levels reached by CTT for the aforementioned

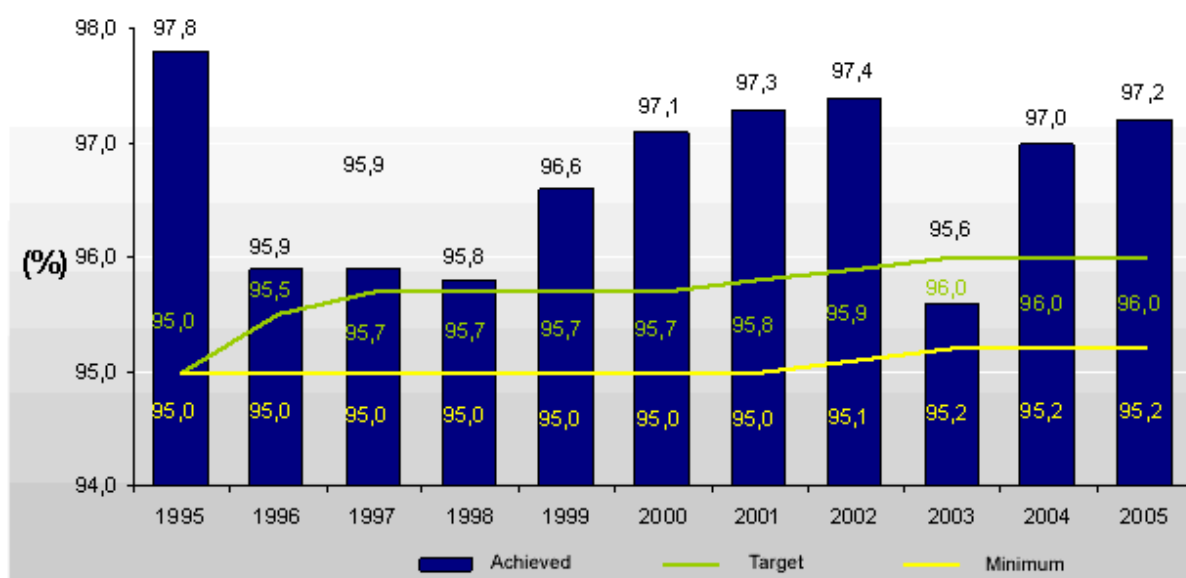
QSI¹⁰⁴.

Regarding this last indicator – GI – it had a positive evolution since 2007, reaching values above 140. In 2003, this indicator reached a negative level (49), due to the non-fulfilment of some quality of service indicators, that year¹⁰⁵.



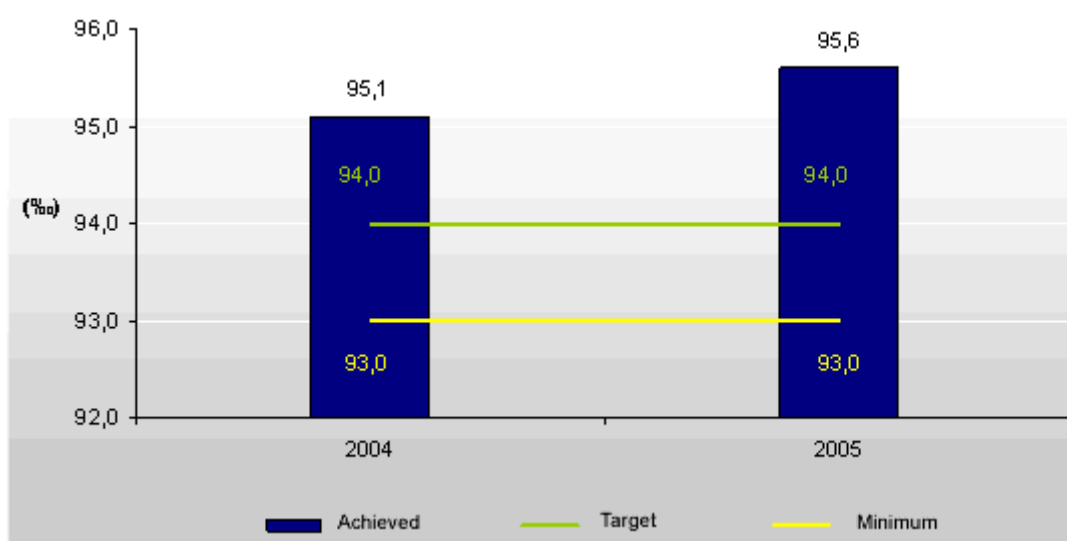
Source: ICP-ANACOM

Regarding the delay in the delivery of normal mail (D+3) it stood always above the target value except in the year 2003.

Graph 122 – Delay in the delivery of normal mail (D+3)

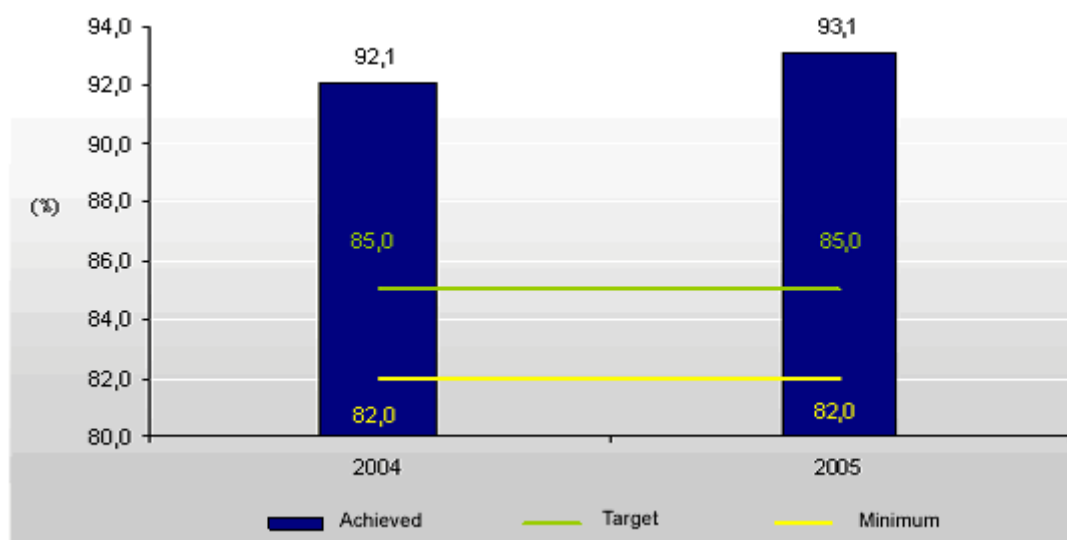
Source: ICP-ANACOM

Regarding the delivery time of priority mail in the Mainland (D+1) there is a positive evolution in 2005 vis-à-vis the year 2004.

Graph 123 – Delivery time of priority mail – Mainland (D+1)

Source: ICP-ANACOM

Regarding the delay in the delivery of priority mail for CAM region (D+2) there is a positive evolution in 2005 in regards to 2004.

Graph 124 – Delay in the delivery of priority mail – CAM (D+2)

Source: ICP-ANACOM

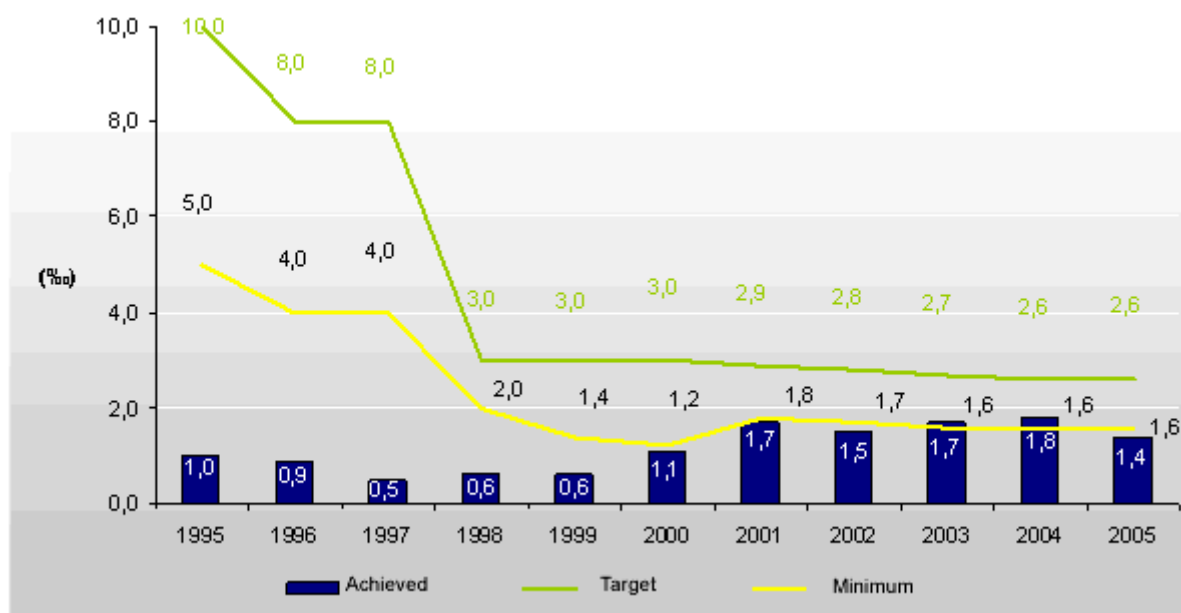
Regarding normal mail not delivered within 15 working days, after the slight degradation trend recorded in 2002, one registers the return to a positive evolution in 2005.

Graph 125 – Normal mail not delivered within 15 working days (per 1,000 letters)

Source: ICP-ANACOM

Regarding the priority mail not delivered within 10 working days, one registers a positive evolution in 2005, further to a stabilizing trend registered since 2002.

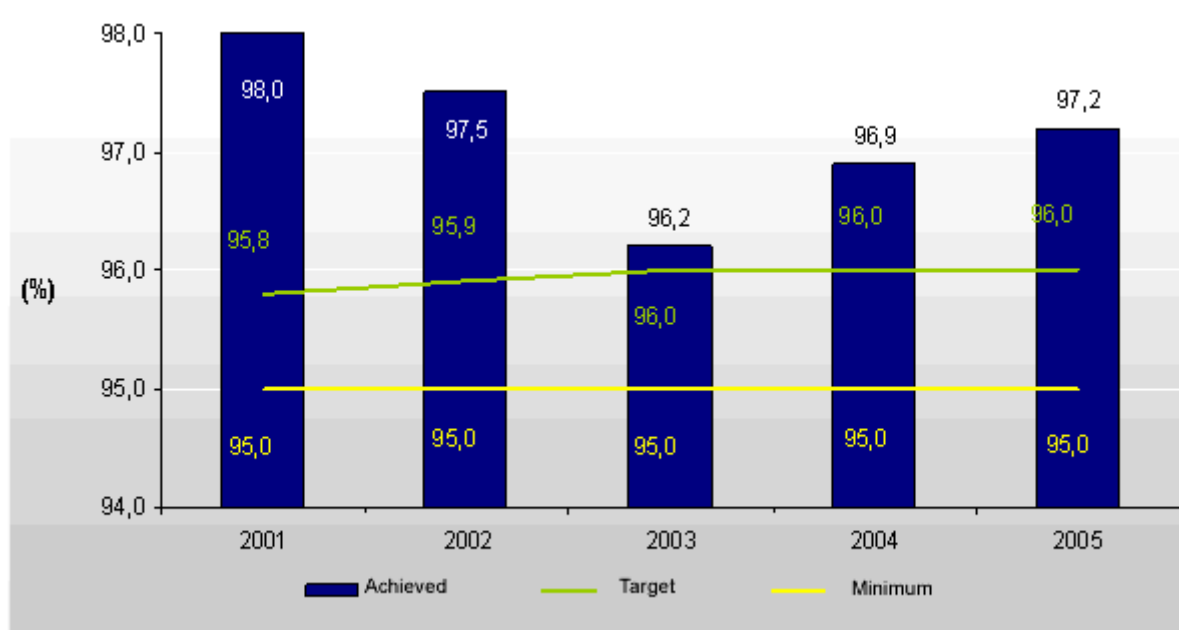
Graph 126 – Priority mail not delivered within 10 working days (per 1,000 letters)



Source: ICP-ANACOM

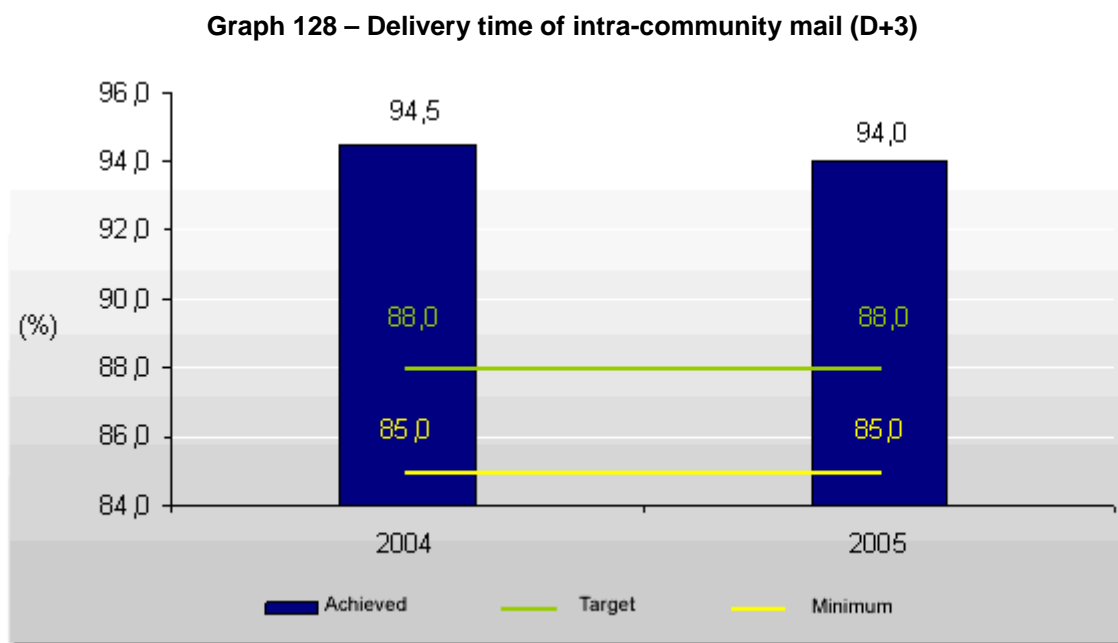
Regarding the quality of service in the delivery of newspapers and other periodicals, since 2003 there is an improvement trend in the delivery time.

Graph 127 – Delivery time of newspapers and periodicals (D+3)



Source: ICP-ANACOM

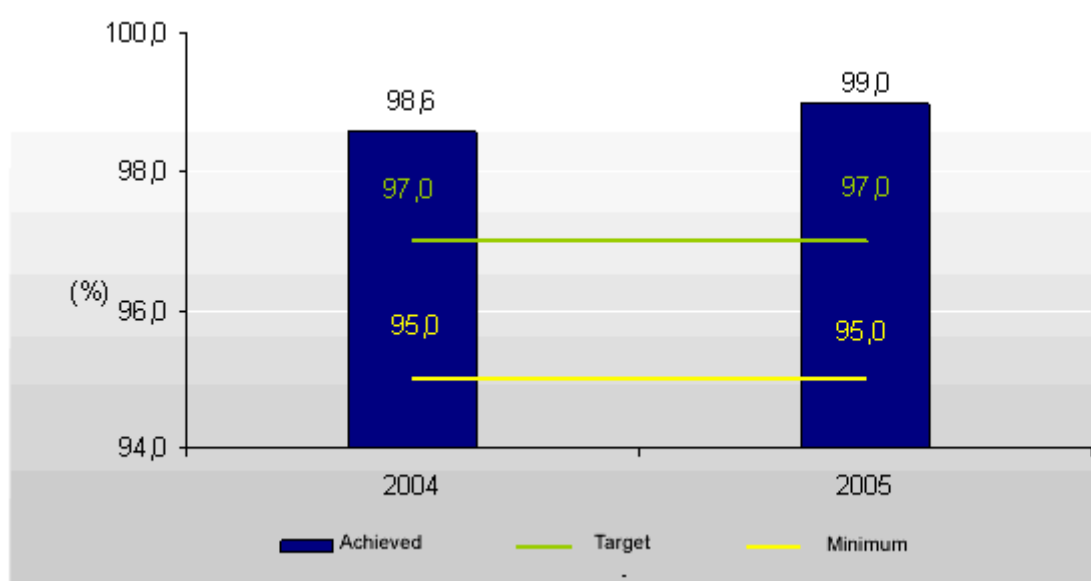
Regarding the delivery in the routing of intra-community mail (D+3) there is a slight degradation in 2005 vis-à-vis the year 2004.



Source: ICP-ANACOM

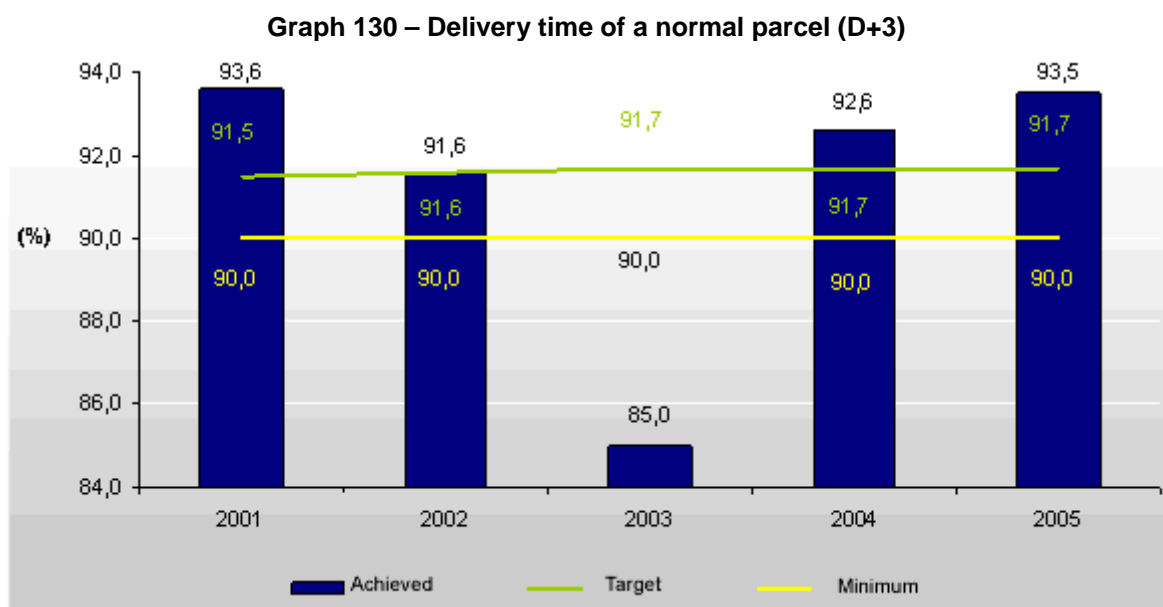
Regarding the delivery time in the routing of intra-community mail (D+5) there is a slight degradation in 2005 vis-à-vis the year 2004.

Graph 129 – Delay in the delivery of intra-community mail (D+5)



Source: ICP-ANACOM

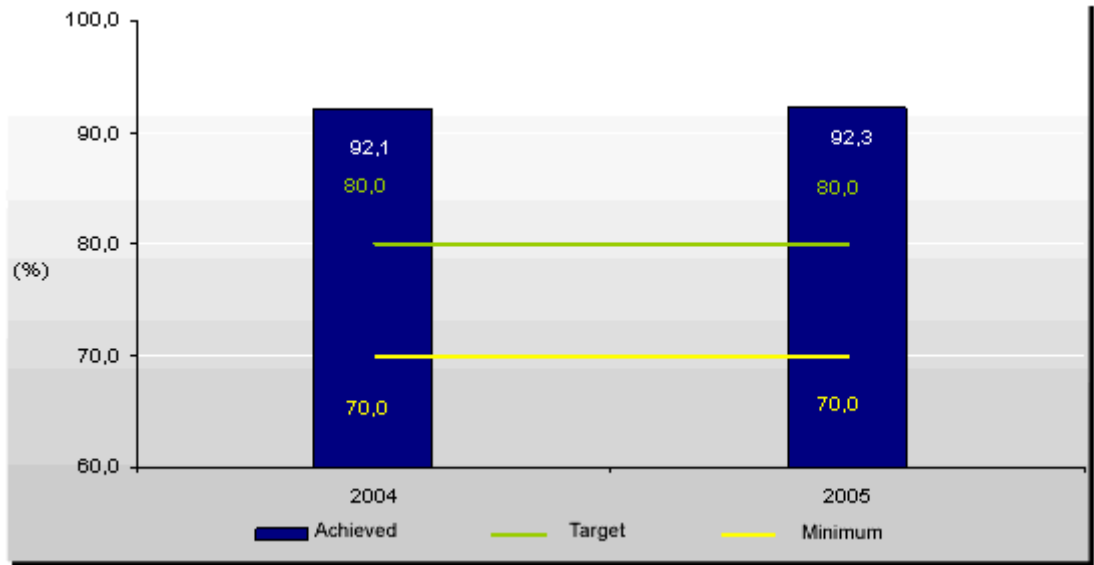
The quality indicator concerning the delivery time of a normal parcel (D+3), it also presents a positive evolution.



Source: ICP-ANACOM

Regarding the time waiting at post offices there was a positive evolution in 2005, in regards to the year 2004.

Graph 131 – Time waiting at post offices



Source: ICP-ANACOM

II.8.4.8 Users' evaluation

According to the Survey on the use of postal service promoted by ICP-ANACOM in 2005, users give postal services a global classification above seven (on a zero to ten scale).

It should also be noted that the distribution of parcels presented the lowest evaluations, being the price factor the worst classified feature, with a 5.81 average.

Table 125 – Average evaluation of postal services (0-10)

	Normal mail	Priority mail	Express mail	Green mail	Parcels
Service in global terms	7.0	7.4	7.3	7.2	6.9

Source: Survey on the use of postal services 2005

The price of the postal services was the indicator with worse results. An important part of those interviewed considers that the price evolution has been increasingly unfavourable to the consumer.

Table 126 – Evolution in the price of postal services in the last year

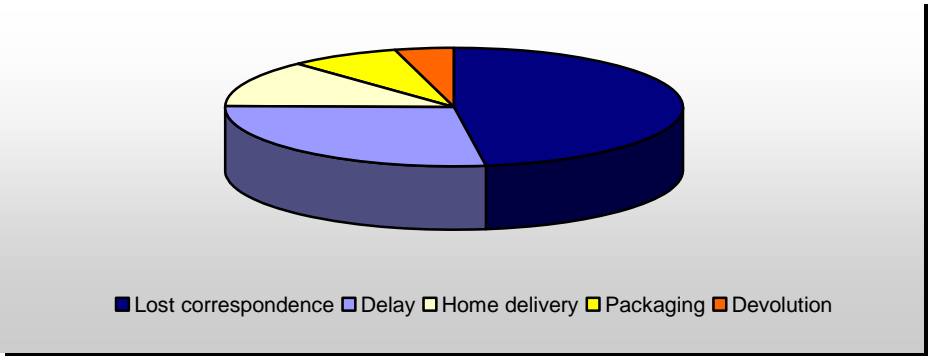
	Normal mail	Priority mail	Express mail	Green mail	Parcels
Became worse	19.1%	14.5%	11.3%	8.8%	17.3%
Maintained	66.3%	67.4%	56.6%	47.1%	68.4%
Improved	9.0%	12.1%	15.1%	23.5%	8.3%
DNN/DNA	5.7%	6.0%	17.0%	20.6%	6.0%

Source: Survey on the use of postal services 2005

ICP-ANACOM's UM-TSM (Mission Unit for the Handling of Market Requests) received during 2005 117 complaints and information requests concerning the postal services and respective providers.

According to the following graph, it is possible to see that half (48 per cent) of those requests relate to issues of wrong delivery, and that the delivery time is also considerable (27 per cent).

Graph 132 – Complaints and information requests on postal services – 2005



Source: ICP-ANACOM