STATE OF COMMUNICATIONS

2011

FREE FLOWING COMMUNICATION



AUTORDACE NACIONAL DE COMUNICAÇÕES

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SUMMARY – ELECTRONIC COMMUNICATIONS

0. Summary – electronic communications

1. Background

According to information available, the gross value added (GVA) generated by the sector represents about 2.6 percent of total gross domestic product (GDP) see Since 2006, the sector's GVA has grown at an average rate below that of GDP. Likewise, the gross operating surplus (GOS) of telecommunications has grown more slowly than total GOS.

In 2010 and 2011 the evolution in the sector's turnover was actually negative. In 2011, reported evolution was -5.4 percent, while growth reported since 2005 has, in general, followed the evolution of the whole set of services.

Meanwhile, investment in telecommunications has been declining since 2005.

Simultaneously, the number of subscribers to the principal services continues to grow, in line with use of these services.

This seemingly contradictory evolution is explained by the following factors:

• Development of next generation networks (NGN) and strong commercial effort focusing on multiple play offers.

It is estimated that high-speed accesses – in particular those supported over optical fibre (FTTH) networks and cable networks with the EuroDOCSIS 3.0 standard – are available in at least 88 percent of households and 60 percent of dwellings in Portugal. According to a study by IDATE, Portugal is in 2nd place in ranking of European countries in terms of homes passed with optical fibre.

These networks allow operators to offer a diverse and innovative range of services, including multiple play offers.

In 2011, there were at least 121 such offers available on the market and the number of subscribers of bundled offers totalled almost 2.2 million subscribers. Revenues from bundles of services totalled nearly 873 million euros.

As at the end of 2011, 72 percent of pay-TV subscribers subscribed to a multiple play offer and as did 64 percent of subscribers to the Internet access service (IAS). The highest rate of growth in multiple play offers during 2011 was reported among

households with the fixed telephone service (FTS) (increasing from 52 to 64 percent).

Portugal is slightly above average in terms of percentage of subscribers to bundled offers per 100 households, and in the case of triple play offers, Portugal is the country with the third highest number of subscribers per 100 households.

 Adverse economic conditions affecting use of communications services by households and businesses.

The reduction in disposable income and increasing uncertainty about the future led to a reduction and postponement in expenditure and a search for less expensive alternatives. In fact, the growth in subscriber numbers and service utilization is, in most cases, below the lower limit of the forecast range resulting from the recent historical trend.

The operators themselves sometimes adapt their portfolio of offers these emerging requirements and to increased competition in certain areas, reinforcing this effect.

2. Internet Access Service (IAS)

The penetration rate of fixed broadband (FBB) in Portugal grew by 1.1 p.p. in 2011, while Portugal was ranked 21st position in the EU27 in terms of Internet penetration.

At the end of 2011, there were 2.2 million accesses to broadband Internet at a fixed location, 5.3 percent more than in the previous year. The reported growth was below the lower limit of the forecast range resulting from the historical trend (in overall terms and with regard to each access technology).

The increasing number of broadband accesses stems in the most part from the evolution in Internet access offers supported over FTTH/B (81 percent) – which already represent 10 percent of the total – and also from the growth in cable modem offers – particularly offers with EuroDOCSIS 3.0. Accesses using asymmetric digital subscriber lines (ADSL) declined, although ADSL remains the most important technology in terms of number of accesses (49 percent).

The penetration rate of optical fibre (FTTH/B) accesses in Portugal was reported at 1.6 per 100 inhabitants in July 2011, more than double the European average (0.6 percent).

The number of active users of the mobile broadband (MBB) Internet access service grew by about 14 percent during 2011, although the number of active MBB users using cards/ modem fell. In terms of MBB and according to the European Commission (EC), Portugal is 13th in the EU ranking, 2 percentage points above the European average. In the specific case of cards, Portugal was 6th in the ranking.

There are five undertakings with significant shares present in the (fixed) broadband Internet access market: Grupo PT, Grupo ZON/TV Cabo, Optimus, Cabovisão and Vodafone.

In 2011, Grupo PT increased its customer share by 2.5 percentage points over the previous year, with a market share of 49.4 percent. The Group therefore again exceeded the European average of incumbent operators, which maintained a declining trend (43 percent in July 2011).

In the last three years a recovery has been seen in Grupo PT's share of customers (+5.3 percentage points), in particular due to multiple play offers and FTTH offers from PT Comunicações.

About 70 percent of FBB offers are included in triple play offers.

In terms of the access speeds chosen by users, in 2011, the majority of FBB customers (71 percent) used accesses which exceeded 10 Mbps. About 33 percent had accesses above 20 Mbps and 27 percent used accesses with speeds between 2 Mbps and 10 Mbps.

Offers appeared on the market with speeds exceeding 300 Mbps. Offers with higher transmission speeds are supported over optical fibre (FTTH/B) or coaxial cable using DOCSIS 3.0.

Meanwhile, 88 percent of broadband offers did not include traffic limits.

According to available information, standalone offers and FTS+FBB bundles feature minimum prices below the European average, while the minimum prices of the FBB+TV bundle and triple play have prices which are above average, in almost all cases.

The number of MBB offers also increased, in particular post-paid offers, while a proliferation was reported in quadruple play bundles, with the offer of MBB traffic included in triple play bundles.

Consumer perceptions as to the quality of fixed Internet services is generally positive, although about 19 percent of respondents rated it with values below seven (on a scale of 1 to 10 where 1 means "very dissatisfied" and 10 means "very satisfied").

The level of overall satisfaction with mobile Internet access providers is likewise high, although not as high as FBB. The level of satisfaction reported with regard to transmission speed is slightly lower than the level of overall satisfaction.

3. Subscription TV Service

There were around 2.98 million subscription television customers at the end of 2011, 202 thousand more than in the previous year. This corresponds to 73 subscribers per 100 private households. According to available information, the penetration rate of subscription TV in Portugal remained above the European average in 2011.

The number of subscribers reported as at the end of 2011 is slightly below the forecast range resulting from the recent historical trend in this variable, possibly due to the discontinuation of an STVS offer provided using wireless access (FWA) and to a slowdown in the growth of offers supported over ADSL.

The FTTH/B platform was the main driver of growth in the number of subscribers, accounting for 120 thousand new subscribers in net terms. This form of access now represents 9 percent of all subscribers. The number of subscribers supported over ADSL offers was the second driver of the service's growth (69 thousand additional subscribers) and ADSL now represents 19 percent of total subscribers. The main means of accessing the service – satellite TV (DTH) (23 percent) and cable TV (49 percent) – grew 4.3 percent and 0.6 percent, respectively. After three consecutive years of decline in the number of cable TV subscribers, a recovery of 10 thousand subscribers was reported in 2011, in likelihood due to offers with EuroDOCSIS 3.0.

Grupo ZON/TV Cabo remains the main operator of the subscription television service, with a 53.9 percent share of subscribers. PT Comunicações saw its share of subscribers

continue to increase, to 35 percent, while Cabovisão remains the third largest operator, with a share of 8.6 percent of total subscribers.

On the other hand, the presence of offers sold in bundles continued to grow, in conjunction with the fixed/mobile broadband Internet service and/or the voice telephony service.

At the end of 2011, about 26.3 percent of homes had access to Premium channels, about 2 percentage points less than at the end of 2010 and 4.7 percentage points less than at the end of 2009.

Overall satisfaction with the paid television service (measured on a scale of 1 to 10, from "dissatisfied" to "very satisfied") is high. About 84 percent of respondents rate the service with a score of seven or higher. Compared to the previous year, the proportion of highly positive ratings (9 or 10) of the service decreased by about 12 percentage points.

4. Fixed telephone service (FTS)

In 2011, the trend of increased FTS penetration in Portugal, already detected in the previous year, continued – penetration of the FTS rose to 42.6 accesses per 100 inhabitants, exceeding the European average. This increase in penetration was mainly due to new FTS offers, especially offers of voice over Internet protocol (VoIP) provided as part of a multiple play offer, including offers based on optical fibre (FTTH/B) and EuroDOCSIS 3.0, and offers based on the global system for mobile communications (GSM) / third generation mobile communications (UMTS) provided at a fixed location.

This increase in penetration is not general among the different socio-demographic groups. In fact, among homes where the respondent was older (55 years or more), had a lower level of education (less than or equal to 1st cycle of basic education) or where the respondent is between 35 and 54 years old and has a low level of education, there is a tendency towards a lower FTS penetration rate as from July 2010.

Likewise, an increase in traffic was observed in terms of fixed-fixed minutes (1.9 percent), which, however, did not result in increased traffic per customer.

About 70 percent of residential offers where the FTS is included allow unlimited calls to the national fixed network. Of these, 47.4 percent offer unlimited calls 24 hours per day,
15.8 percent offer unlimited calls at night and 6.6 percent offer unlimited calls at night, on weekends and holidays.

Grupo PT's share of accesses installed at customer request (56.0 percent) declined by 3.6 percentage points from a year earlier. The alternative providers' share of direct access subscribers in Portugal is the second highest among EU countries.

In 2011, the prices charged by the incumbent operator for residential customers were below the average prices charged by incumbents in the EU19 for all consumer profiles.

The average (simple) price of access charged in stand-alone offers is 7.2 euros, with a maximum of 12.5 euros. In terms of FTS offers inserted in bundles, representing 64.5 percent of the residential offer, the average (simple) subscription varies between 21.9 euros and 65 euros, depending on the services included, with a minimum of between 10 and 52 euros.

It should also be noted that the FTS has generally high satisfaction levels: about 84 percent of users reported positive satisfaction with the overall service provided by the operator.

5. Mobile telephone service (MTS)

At the end of 2011, MTS penetration rose to 157.9 (active cards) per 100 inhabitants, one of the highest rates in the EU. The penetration of the MTS in 2011 remains above the EU average. If only mobile stations with actual use are considered, the penetration rate reported in Portugal (126.6) would be slightly below the European average.

The number of subscribers increased from 1.9 percent to 16.8 million. The growth is below the average of the past five years and is also lower than the growth seen in 2011 in the EU. The number of users who actually used the service – 13.5 million – is lower than in 2010. The reported evolution results from the suspension of government's *e-iniciativas* programme in the first quarter of 2011.

At the end of 2011, three out of every 10 mobile stations with actual use made use of typical MBB services, principally the IAS. The number of active broadband users reached approximately 4.2 million, 1.8 percent more than in the previous year. The growth seen is due largely to the growing number of users of the Internet access service using mobile

broadband (14 percent compared to 2010), including users who use mobile phones to access this service, while users of cards/ modem decreased by 11.3 percent due to the suspension of the *e-iniciativas* programme.

In 2011, voice traffic reported in terms of minutes saw a growth rate (7 percent) below the average of the previous five years (12.2 percent) – the lowest rate of growth reported in the period. The reported growth was below the lower limit of the forecast range resulting from the historical trend. The growth reported in the number of calls was even lower than the growth reported in the number of subscribers.

A further increase is reported in the number of text messages sent in 2011 (2.3 percent), although less significant than in previous years.

The relatively new services such as the multimedia messaging service (MMS), video telephony and mobile TV have a reduced level of penetration.

Service revenues from customers reached 2.43 billion euros, below revenues reported in the previous year. The decrease reported in revenues was mainly caused by lower revenues from voice communications and from mobile broadband Internet access – for which decreases of 11.7 and 13.6 percent were reported, respectively.

THE COMMUNICATIONS SECTOR IN THE NATIONAL ECONOMY: A VIEW OF NATIONAL ACCOUNTS

1. The communications sector in the national economy: a view of national accounts

In this introductory chapter, the intention is to provide a view of the weight and the position of the communications sector in the national economy, and for this purpose, use was made of the National Accounts and other relevant information published by INE – Instituto Nacional de Estatística (Statistics Portugal).

The information presented is as currently available (in the case of National Accounts with respect to 2009). Meanwhile, the information compiled is based on CAE – Classificação das Atividades Económicas (Classification of Economic Activities, see 3), and are not necessarily limited by the boundaries of the sector, as subject to oversight and regulation by ICP-ANACOM¹.

1.1. Main aspects

In 2009, the gross value added (GVA) generated by the sector accounted for 2.6 percent of total GDP. Telecommunications represent 85 percent of the sector while postal and courier activities represent the remaining 15 percent. The sector is in 9th position among those with the highest GVA.

In 2010 and 2011, the evolution reported in the sector's turnover was negative. In 2011, reported evolution was -5.4 percent. The growth reported since 2005 has, in general, followed the evolution of the whole set of services.

In the most part, telecommunications make use, as intermediate consumption, of other telecommunications services and information, electronic and optical products to produce the services. On the other hand, telecommunications are mainly used by households, by other telecommunications operators, exported and used by commercial and financial activities. About half of the production is associated with end use, while the remainder is used as intermediate consumption.

Postal and courier activities essentially use other services of the same nature, transportation services, petroleum products and various services.

¹ For example: (1) in the case of postal and courier activities, urban courier services are included, (2) In the case of IPC, communications cover equipment sales, (3) The record of companies considered does not coincide with the list of registered providers and operators.

Communications makes up 3.3 percent of household expenditure. On average, households in Portugal spent 7 euros a month on communications services in 2010/2011. After education expenses, spending on communications increased the most during the period being reported.

In 2009, telecommunications invested 832 million euros, representing about 2.4 percent of the year's total gross fixed capital formation (GFCF). Telecommunications made the 12th largest contribution to GFCF.

Telecommunications GFCF has been declining since 2005.

In 2009, telecommunications accounted for a total of 17,100 jobs representing 0.3 percent of total employment. Telecommunications rank 30th in terms of the largest sources of employment (out of 38).

The gross operating surplus (GOS) of telecommunications is among the 10 highest in the Portuguese economy. Since 2006, telecommunications GOS has lagged total GOS, with significant decreases noted in 2008 and 2009.

Telecommunications is reported as having a surplus balance of services. In contrast, the balance of postal and courier services is negative.

In 2011, according to the consumer price index (CPI), communications prices rose by 2.99 percent, driven in particular by the prices of communications services. The growth in prices in the sector was less than the increase reported in CPI (3.66 percent).

1.2. The weight of the communications sector in GDP

According to available data, referring to 2009, the gross value added (GVA) generated by the sector² totalled 3.8 billion euros, representing 2.6 percent of total GDP.

² The communications sector is considered as the sum of divisions 53 - Postal and courier activities and 61-Telecommunications of CAE Rev.3. INE (Statistics Portugal) does not report this aggregate.



Graphic 1 - Weight of the communications sector in GDP

Unit: thousands of minutes

Source: INE (Statistics Portugal), Annual National Accounts 2009

In 2009, telecommunications generated 3.2 billion euros of GVA, representing 2.2 percent of total GVA and 85 percent of the sector. Postal and courier activities accounted for 553 million euros of GVA in 2009, or 0.4 percent of the total and 15 percent of the sector.

Among the branches of nomenclature activity with a level of aggregation for 82 branches (A82), the sector ranks 9th among those with the highest GVA. Telecommunications ranks 11th and the postal courier activities in 57th position.

Table 1 – Gross value added (GVA) – current prices

	2008	2009	Var. (%) 2006/2009	Var. (%) annual average 2006/2009	Var. (%) accumulated 2006/2009
Communications sector	3,919	3, 802	-3.0%	0.3%	0.8%
Telecommunications	3,355	3,248	-3.2%	0.2%	0.7%
Postal and courier activities	564	553	-1.9%	0.4%	1.2%
GDP	149,311	148,703	-0.4%	2.4%	7.5%

Units: thousands of euro, %

Source: INE (Statistics Portugal), Annual National Accounts 2009

Sector GVA decreased in nominal term by 3 percent in 2009, a steeper decline than affecting the economy as a whole (-0.4 percent). Since 2006, the sector has grown at an average nominal annual rate of 0.3 percent, while the average annual growth rate of total nominal GVA was 2.4 percent.

In particular, and in the case of telecommunications³, in 2009, GVA decreased 0.5 percent in real terms, in a year when total GVA decreased by 2.2 percent in real terms.

The telecommunications sector achieved relatively high real growth rates between 1999 and 2005, and was nearly always among five top-growing sectors (by A38 activity) in this period.





Unit: base index (1995 = 100)

Source: INE (Statistics Portugal), Annual National Accounts 2009: GVA by A38 activity (rate of change in volume)

The weight of communications in the turnover of services

It is possible to gauge the relative evolution of the sector in the years following 2009, taking into account the turnover index of services published by INE (Statistics Portugal).

In 2010 and 2011, the evolution reported in the sector's turnover was negative. In 2011, evolution was reported at -5.4 percent.

³ On INE's website, it is not possible to obtain these indicator for division 53 and, consequently for the sector.

	2010	2011	Var. (%) 2010/2011	Var. (%) annual average 2006/2011	Var. (%) accumulated 2006/2011
Communications sector	98.2	92.9	-5.4%	-2.5%	-9.5%
Postal and courier activities	96.5	92.1	-4.6%	-3.4%	-12.9%
Telecommunications	98.4	93.0	-5.5%	-2.4%	-9.1%
Services turnover - total	96.8	90.1	-6.9%	-4.1%	-15.5%

Table 2 – Index of turnover in services – Data adjusted for calendar effects and seasonality (2005 = 100)

Unit: base index (2005 = 100)

Source: INE (Statistics Portugal), Indices of Turnover, Employment, Earnings and Hours worked in Services - December 2011

The growth reported since 2005 has, in general, followed the evolution of services as a whole, although the variations in the sector's turnover are less pronounced than total services

Graphic 3 – Index of turnover in services – Data adjusted for calendar effects and seasonality (2005 = 100)



Unit: base index (2005 = 100)

Source: INE (Statistics Portugal), Indices of Turnover, Employment, Earnings and Hours Worked in Services - December 2011

Inter-sector relations

r.

In the most part, telecommunications make use, as intermediate consumption, of other telecommunications services and information, electronic and optical products to produce the services.

	2009
Telecommunication services	42.5%
Computer, electronic and optical products	14.9%
Advertising and market research services	4.8%
Financial services, except insurance and pension funding	4.4%
Legal and accounting services; services of head offices; management consulting services	4.0%
Constructions and construction works	4.0%
Other administrative and support services	3.3%
Audiovisual and broadcasting activities	2.5%
Electrical equipment	2.5%
Real estate services	2.3%
Architectural and engineering services; technical testing and analysis services	2.3%
Publishing services	2.1%
Electricity, gas, steam and air conditioning	1.9%
Warehousing and support services for transportation	1.5%
Computer programming, consultancy and related services; and information services	1.0%
Rental and leasing services	0.9%
Public administration and defence services; compulsory social security services	0.8%
Postal and courier services	0.6%
Others	3.6%

Table 3 – Principal input	ts of telecommunications	services by sector of activity
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Unit: %

Source: Annual National Accounts 2009: matrix of total flows at 2008 base prices (P64xP64)

On the other hand, telecommunications are mainly used by households, by other telecommunications operators, exported and used by commercial and financial activities. About half of the production is associated with end use, while the remainder is used as intermediate consumption.

	2009
Final consumption expenditure by households	42.2%
Telecommunication services	21.4%
Export	7.1%
Wholesale trade services, except of motor vehicles and motorcycles	3.0%
Financial services, except insurance and pension funding	2.6%
Retail trade services, except of motor vehicles and motorcycles	2.2%
Public administration and defence services; compulsory social security services	1.9%
Other administrative and support services	1.7%
Accommodation and food services	1.5%
Legal and accounting services; services of head offices; management consulting services	1.5%
Human health services	0.8%
Computer programming, consultancy and related services and information services	0.8%
Other personal services	0.8%
Architectural and engineering services; technical testing and analysis services	0.7%
Advertising and market research services	0.6%
Wholesale and retail trade and repair services of motor vehicles and motorcycles	0.6%
Land transport services and transport services via pipelines	0.6%
Constructions and construction works	0.5%
Services furnished by membership organisations	0.5%
Others	8.2%

Table 4 – Principal sectors using telecommunications services by sector of activity

Unit: %

Source: Annual National Accounts 2009: matrix of total flows at 2008 base prices (P64xP64)

Postal and courier activities essentially use other services of the same nature, transport services, activities related to real estate, petroleum products and various services.

Table 5 – Principal inputs of postal and courier activities by sector of activity

	2009
Postal and courier services	13.9%
Constructions and construction works	11.6%
Other administrative and support services	9.7%
Land transport services and transport services via pipelines	9.1%
Legal and accounting services; services of head offices; management consulting services	9.0%
Real estate services	5.9%
Coke and refined petroleum products and briquettes	5.1%
Advertising and market research services	4.6%
Financial services, except insurance and pension funding	4.0%
Repair and installation services of machinery and equipment	3.5%
Rental and leasing services	3.5%
Electricity, gas, steam and air conditioning	3.4%
Warehousing and support services for transportation	1.9%
Retail trade services, except of motor vehicles and motorcycles	1.8%
Printing and recording services	1.7%
Architectural and engineering services; technical testing and analysis services	1.7%
Telecommunication services	1.1%
Accommodation and food services	1.0%
Other professional, scientific and technical services; veterinary services	0.9%
Others	6.6%

Unit: %

Source: Annual National Accounts 2009: matrix of total flows at 2008 base prices (P64xP64)

About 18.7 percent of production stemming from postal and courier activities results in final consumption, especially household consumption.

Table 6 – Principal sectors using postal and courier activities

Final consumption expenditure by households 15. Legal and accounting services; services of head offices; management consulting services 6. Wholesale trade services, except of motor vehicles and motorcycles 6. Einensial consistence except of motor vehicles and motorcycles 6.	.6% .9% .7% 5%
Legal and accounting services; services of head offices; management consulting services 6 Wholesale trade services, except of motor vehicles and motorcycles 6 Eigenside services and services and motorcycles 6	.9% .7% .5%
Wholesale trade services, except of motor vehicles and motorcycles 6. Einensisteen superstance and reasing functions 6.	.7% .5%
Financial convince event incurrence and penaler funding	.5%
Financial services, except insurance and pension funding 6.	
Public administration and defence services; compulsory social security 5. services	.8%
Postal and courier services 5.	.3%
Retail trade services, except of motor vehicles and motorcycles 4.	.1%
Services furnished by membership organisations 4.	.1%
Other administrative and support services 3.	.8%
Export 3.	.0%
Architectural and engineering services; technical testing and analysis 2. services	.7%
Constructions and construction works 2.	.6%
Telecommunication services	2.3%
Wholesale and retail trade and repair services of motor vehicles and 2 motorcycles	2.2%
Human health services 2	2.1%
Accommodation and food services 2	2.0%
Advertising and market research services 1	.6%
Insurance, reinsurance and pension funding, except compulsory social 1 security services	.4%
Others 21	.3%

Unit: %

Source: Annual National Accounts 2009: matrix of total flows at 2008 base prices (P64xP64)

1.3. Communications expenditure in household consumption

On average, in 2010/2011, households resident in Portugal spent 680 euros on communications services (about 57 euros per month), an increase of around 13.40 euros per month compared to 2005/2006.

The reported increase totalled 30.9 percent, which clearly exceeds the average of the various classes of expenditure (15.9 percent). After education expenses, spending on communications increased the most during the period being reported.

Table 7 – Annua	l average expenditure	per household
-----------------	-----------------------	---------------

	2005/2006	2010/2011	Var. (%) 2006/2009
Communications sector	519	680	30.9%
Total	17,607	20,400	15.9%

Unit: %

Source: INE (Statistics Portugal), Inquérito às Despesas das Famílias (Household Budget Survey) 2005/2006 and 2010/2011

In volume (i.e. at constant prices), expenditure on communications had the highest increase: 41.8 percent.

Communications and entertainment expenses were the only expenditure categories that reported declines in implicit prices.

Despite the growth seen, the expenditure on communications as proportion of total household expenditure is 3.3 percent. The weight of this type of expenditure has remained virtually unchanged since 2000. In the previous decade, the proportion of household expenditure taken up by communications had tripled.



Graphic 4 – Structure of the average annual expenditure by COICOP – 2010/2011

Unit: %

Source: INE (Statistics Portugal), Inquérito às Despesas das Famílias (Household Budget Survey) 2005/2006 and 2010/2011

Expenditure on communications is higher in Lisbon and in the Autonomous regions. As a percentage of total expenditure, expenditure on communications is higher in regions with lower average spending (Autonomous Regions and Alentejo) and in the region with the highest level of expenditure (Lisbon).

	Total	Communicatio ns	% of total
North	20,671	626	3.0%
Centre	19,183	612	3.2%
Lisbon	22,384	808	3.6%
Alentejo	16,774	622	3.7%
Algarve	19,967	681	3.4%
ARA	18,037	705	3.9%
ARM	18,586	704	3.8%
Total	20,400	680	3.3%

Table 8 – Annual average expenditure by NUTS II

Units: euros, %

Source: INE (Statistics Portugal), Inquérito às Despesas das Famílias (Household Budget Survey) 2005/2006 and 2010/2011

On average, households with at least two adults and at least one child and households with two or more non-elderly adults spend above average values in communications.

In households with children, spending is about 33 percent higher than average.

Communications expenditure in households without children is about 19 percent lower than average. Households consisting of only one individual report lower communication expenditure (between 30 and 59 percent below average).

	Households without children					Household	s with child	ren	
	Total	1 non- elderly adult	1 elderly adult	2 or more adults (non- elderly)	2 or more adults, at least one elderly adult	Total	1 adult with 1 or more dependent children	2 or more adults with 1 dependent child	2 or more adults with 2 or more dependent children
Total	16,712	13,789	9,379	21,925	16,963	26,786	18,417	26,788	28,784
Communications	552	477	276	779	513	901	635	915	948

Table 9 – Average annual expenditure and household composition

Unit: euros

Source: INE (Statistics Portugal), Inquérito às Despesas das Famílias (Household Budget Survey) 2005/2006 and 2010/2011

1.4. Gross fixed capital formation (GFCF) of telecommunications

In 2009, the telecommunications sector invested 832 million euros, representing about 2.4 percent of the year's total GFCF. Telecommunications made the 12th largest contribution to GFCF in 2009, in terms of sectors of activity. Until 2007, telecommunications had always been among the top 10 industries that contributed most to GFCF.

Between 1999 and 2007 the proportion of telecommunications investment in total GFCF almost always exceeded 3 percent, reaching a peak of 3.9 percent in 2005.

The proportion of telecommunications investment in terms of total GFCF is slightly greater than the weight of this activity in GDP. However, when certain specific categories such as Other machinery and equipment and Intangible assets are considered, the weight of telecommunications, as a proportion of the total, increases significantly (to 9.7 percent and 4.5 percent, respectively). In the first case (Other machinery and equipment), telecommunications was the activity that invested most in such assets among the 38 considered in 2009.

Table 10 – GFCF – current prices

	2008	2009	Var. (%) 2008/2009	Var. (%) annual average 2005/2009	Var. (%) accumulat ed 2005/2009
Telecommunications	884	832	-5.8%	-11.8%	-39.6%
GFCF – Total	38,635	34,629	-10.4%	-0.6%	-2.2%

Units: thousands of euros, %

Source: INE (Statistics Portugal), Annual National Accounts 2009: Table C.3.1

Telecommunications GFCF has been in a downward trend since 2005. The sharp drop reported in 2008 and 2009 is primarily associated with the construction component. This type of investment, which accounted for 56 percent of the total, turned negative in these years.





Unit: thousands of euros

Source: INE (Statistics Portugal), Annual National Accounts 2009: Table C.3.1

1.5. Employment and compensation in telecommunications

In 2009, telecommunications accounted for a total of 17,100 jobs representing 0.3 percent of total employment. Employment in telecommunications as a proportion of employment in the national economy is considerably lower than its contribution to GDP since it is a capital intensive business activity. Among the 38 business activities considered, telecommunications is ranked 30th in terms of largest employers.

Over the last five years, the total number of jobs in telecommunications rose 1.2 percent; as such, telecommunications is not one of the largest business activities in terms of job creation.

Table 11 – Total jobs

	2008	2009	Var. (%) 2008/2009	Var. (%) annual average 2005/2009	Var. (%) accumulated 2005/2009
Telecommunications	17,0	17,1	0.3%	0.3%	1.2%
Jobs – Total	5,719	5,573	-2.6%	-0.3%	-1.0%

Units: thousands, %

Source: INE (Statistics Portugal), Annual National Accounts 2009: Table C.4.1

Between 1999 and 2007, the trend in telecommunications employment was declining, although in 2008 and 2009 there was some recovery in the number of jobs.





Unit: base index (1995 = 100)

Source: INE (Statistics Portugal), Annual National Accounts 2009: Table C.4.1

Telecommunications employee compensation as proportion of total employee compensations is about 1 percent, exceeding the proportion of employees. This situation is explained by the fact that average total compensations per job in this business activity is among the highest in the national economy, immediately below compensation paid in the sectors of petroleum products production and electricity and gas production and close to compensation levels in the financial sector.

Table 12 – Average employee compensation (total per job)

	2009
Manufacture of coke and refined petroleum products	85,007
Production and distribution of electricity, gas, steam and air conditioning	71,884
Telecommunications	49,534
Financial and insurance services	43,360
Manufacture of basic pharmaceutical products and pharmaceutical preparations	33,755
Unit: euros	

Source: ICP-ANACOM based on INE (Statistics Portugal) National Accounts 2009

In 2008 and 2009 employee compensation in telecommunications saw among the largest increases in nominal terms.

Table 13 – Employee compensation – current prices

	2008	2009	Var. (%) 2008/2009	Var. (%) annual average 2005/2009	Var. (%) accumulated 2005/2009	
Telecommunications	754	845	12.1%	6.8%	30.1%	
Employee compensations – Total	85,692	85,888	0.2%	2.6%	11.0%	

Units: thousands of euros, %

Source: INE (Statistics Portugal), annual National Accounts: Table C.2.1.1

1.6. Gross operating surplus (GOS) - telecommunications

Telecommunications GOS totalled 2.4 billion euros in 2009, representing 3.8 percent of the total. This value exceeds the weight of VAB and sector compensation in GDP since, as noted above, telecommunications is capital intensive.

	2008	2009	Var. (%) 2008/2009	Var. (%) annual average 2005/2009	Var. (%) accumulated 2005/2009
Telecommunications	2,595	2,393	-7.8%	-1.4%	-5.6%
GOS – Total	64,197	63,515	-1.1%	2.7%	11.2%

Units: thousands of euros, %

Source: INE (Statistics Portugal), annual National Accounts: Table C.2.2.1

Telecommunications GOS is among the ten highest in the Portuguese economy.

Since 2006, growth in telecommunications GOS has lagged total GOS, and significant decreases were reported in 2008 and 2009, so that growth in telecommunications GOS in these two years is within the first quartile of the lowest reported growth rates.



Graphic 7 – Index – EBE – current prices (1995 = 100)

Source: INE (Statistics Portugal), Annual National Accounts: Table C.2.2.1

Unit: base index (1995=100)

1.7. Imports and exports

The telecommunications business activity reports a surplus balance of services, exporting around 451 million euros and importing 409 million euros.

In contrast, the balance of postal and courier services is in deficit, Portugal imports 44 million euros of this service and exports 39 million euros.



Graphic 8 – Imports and exports in 2009 – current prices

Unit: thousands of euros

Source: INE (Statistics Portugal), Annual National Accounts 2009: Supply and use table 2009 A82-P88

Telecommunications exports and imports represent about 5 percent of the activity's supply and use, respectively. In terms of supply and use, the weight of exports and imports in postal and courier activities is slightly lower.

1.8. Consumer prices index (CPI) – communications

In 2011, according to the CPI, communications prices rose by 2.99 percent, driven in particular by the prices of communications services. Equipment prices fell by 13.3 percent, while prices for postal services increased by 0.03 percent.

The growth in the sector's prices lags the increase reported in CPI (3.66 percent).

Table 15 –	Consumer	prices	index -	annual	average	variation	(%)
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	2010	2011	Var. accumulated 2007/2011
Communications	-1.90	2.99	-0.02
Postal services	0.10	0.03	0.06
Telephone and fax equipment	-13.30	-9.43	-0.45
Telephone and fax services	-1.70	3.25	-0.01
Consumer prices index - Total	1.40	3.66	0.07

Unit: %

Source: INE (Statistics Portugal), CPI

Graphic 9 – Consumer price index (2002 = 100)



Unit: base index (2002 = 100)

Source: INE (Statistics Portugal), CPI

THE ELECTRONIC COMMUNICATIONS USER

2. The electronic communications user

This chapter provides an overall characterisation of the electronic communications user⁴ and the user as a simultaneous consumer of multiple services.

2.1. Principal aspects

- The most commonly used combinations of services among the residential population are MTS+FTS+FBB+STVS (18 percent), and MTS used exclusively (12.8 percent). The use of MBB has also gained significant expression when coupled with the first set of services mentioned above (12.5 percent), or when taken together with the mobile phone (9.5 percent). The use of FTS and MTS in conjunction with STVS, or on their own, is also relatively popular with a frequency of 8.5 and 7.5 percent, respectively.
- According to EUROSTAT, about 5 percent of Portuguese households in 2011 did not have any kind of access to the telephone service (3 percentage points above the EU27 average). These homes are more likely to be located in less populated areas and are characterized by a smaller family size. The value reported is the same as reported in 2009. INE (Statistics Portugal) estimates that in 2010, 6 percent of households had no fixed or mobile telephone.
- Four profiles of residential usage of communications services have been identified⁵. The identified groups have the following characteristics:
 - the first of the groups identified refers to users who prefer the telephone either on its own, or in conjunction with the subscription TV service (MTS+FTS+STVS; MTS; MTS+FTS; FTS). The members of this first group belong to smaller sized households (1-2 individuals), which include elderly residents and residents of a lower social class (D). Geographically, this type of user has a greater weight in the South and North Interior regions. The fact of being retired, of older age (65 years or over) and with a lower level of education (up to 1st cycle) appears to be determinant for classifying this type of user;

⁴ This chapter is not meant to advance or support any decision on the definition of relevant markets for electronic communications services.

⁵ Cluster analysis according to K-means method.

- the second group comprises users who prefer the MTS together with STVS and/or MBB (MTS+MBB; MTS+STVS; MTS+MBB+STVS). These individuals tend to belong to larger households (three or more individuals) and the lower middle social class (C2), with greater occurrence in the North Coast region. This group tends to consist of individuals aged 15 to 24 or 45 to 54, with an intermediate education level (2nd and 3rd cycles) and who are professionally classified as qualified and non-qualified employees;
- the third group of users of electronic communications refers to users consuming several services in an integrated manner. Two socio-demographic profiles are distinguished within this consumption type:
 - Individuals with higher education, in upper or middle management or technical specialists, of upper or upper middle social class (A/B) and aged 25 to 34 years. This group comprises individuals in dwellings composed of three individuals and resident in Portugal's two large cities (Greater Lisbon or Greater Porto).
 - Individuals aged 15 to 24 years, with secondary education, students or in employment (as small business owners or employees in services, retail or administration). This group comprises middle class (C1) individuals, belonging to larger households (four or more), especially where children are present.
- Among small and medium enterprises (SMEs), the most common combination of services consisted of fixed and mobile telephone services, together with FBB (MTS+FTS+FBB).
- In the case of business customers, it is possible to distinguish three profiles of integrated consumption of services⁶:
 - Companies which favour a diverse set of electronic communications services, belonging mostly to the non-commerce service sector, and which are characterized by being small or medium-sized (5 to 49 employees), having been in the market for five to eight years and are more likely located in the regions of Lisbon, Centre or South

⁶ Cluster analysis according to the K-means method.

- Companies which use the telephone service only, belonging mainly to the manufacturing and construction sectors, and which are characterized by their small size (up to four employees) and by being located in the North of the country.
- Companies which use the telephone service and which may combine it with other services such as FBB. They belong to the commerce sector and are classified among the oldest companies (20 or more years). They are located in the Centre and South regions of Portugal.

2.2. Profile of electronic communications user and use

The profile of residential and business users of electronic communications is detailed below.

The analysis of business customers uses specific surveys that have been developed by ICP-ANACOM while analysis of residential customers is based on information from the BTC – *Barómetro de Telecomunicações* (Telecommunications Barometer) developed by Marktest – Marketing, Organização, Formação, Lda. (Marktest).

2.2.1. Profile of residential consumer of electronic communications

This section presents an integrated view of the residential consumer of electronic communications services, using Marktest's BTC – *Rede Móvel* (Mobile Network)⁷.

The reference consumer for the integrated analysis of electronic communications services is the individual aged 15 or over⁸ residing in private accommodation in Portugal⁹ and the services considered are the following:

⁷ The *Barómetro de Telecomunicações* (Telecommunications Barometer) is a regular study of Marktest for the telecommunications sector. The universe of the *Barómetro de Telecomunicações - Rede Móvel* comprises people aged 10 and over living in mainland Portugal or in the Autonomous Regions of Madeira and the Azores; a sample is compiled on a monthly basis which is proportional to and representative of the study's universe, corresponding to 1350 interviews per month.

⁸ According to provisional data from the 2011 census of INE (Statistics Portugal), about 15 percent of the population residing in Portugal is under the age of 15 years.

⁹ Insofar as accesses to the MTS and mobile IAS are made individually, it was decided to consider the individual as the unit of analysis. In this regard, access to other services (fixed telephone service, fixed Internet access service and subscription TV service) should be interpreted as the possibility that individuals may access the respective services when available in their household.

- mobile telephone service (MTS);
- fixed telephone service (FTS);
- Internet access service (IAS), distinguishing three forms of access: mobile broadband (MBB), fixed broadband (FBB), and fixed narrowband (FNB);
- subscription television service (STVS).

To describe the profile of the residential consumer and of residential consumption of electronic communications services the penetration of various combinations of services are presented, as among individuals, together with their socioeconomic and demographic profile and levels of satisfaction with the services provided.

Since Marktest's survey was conducted over the telephone and does not include persons without the telephone service, this analysis does not cover individuals who do not have any electronic communications service. Analysis of the non-user of electronic communications services is detailed in section 2.3.

Penetration of services

At the end of 2011, about 38 percent of the individuals had four or more different electronic communications services (not necessarily acquired as a bundle), 6 percentage points more than in the previous year.



Graphic 10 – Distribution of individuals according to the number of electronic communications services available to them

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q2010 and 4Q2011

Unit: %

Base: Individuals aged 15 or over with voice electronic communications services (excluding non-responses).

Note 1: The coefficient of variation is considered as sampling error indicator, based on the variance of the "proportion" of a simple random sample and assuming a significance level of 95 percent. Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate.

Note 2: The upward pointing arrow signals a statistically significant increase between the two periods and a downward arrow signals a statistically significant decrease between the two periods, through the statistical test of the difference between two proportions for large and independent samples, considering a 95 percent confidence level.

Note 3: The following services were considered: FTS, MTS, fixed Internet access service, mobile Internet access service, STVS.

The most common combinations of services, as at the end of 2011, were: fixed telephone, mobile telephone, FBB and STVS (18 percent), though not necessarily purchased as a bundle. This was also the combination of services which reported the most significant annual increase (4.3 percentage points).

The MTS used on its own has become the second most common combination (12.8 percent).

Use of MBB also has significant expression when combined with the first set of services mentioned above (12.5 percent), or when taken together with the mobile telephone service (9.5 percent).

The use of FTS and MTS in conjunction with STVS, or on their own, is also relatively popular with a frequency of 8.5 and 7.5 percent, respectively.

	4Q2010	4Q2011
MTS+FTS+FBB+STVS	14.0	18.3 🚹
MTS	15.1	12.8
MTS+FTS+MBB+FBB+STVS	9.6	12.5
MTS+MBB	10.3	9.5
MTS+FTS+STVS	7.6	8.5
MTS+FTS	8.7	7.5
FTS	6.0	5.4
MTS+STVS	4.9	4.6
MTS+MBB+STVS	4.6	4.3
MTS+FBB+STVS	4.7	3.3 🕕
MTS+MBB+FBB+STVS	2.3	2.5
MTS+FTS+MBB+STVS	2.8	2.4
MTS+FTS+MBB	2.8	1.8 🦺
FTS+STVS	1.3	1.8
MTS+FTS+FBB	2.1	1.6
Other combinations	3.4	3.3

Table 16 – Penetration of services and combinations of services

Unit: %

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q2010 and 4Q2011

Base: Individuals aged 15 or over with voice electronic communications services (excluding non-responses).

Note 1: Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate.

Note 2: The upward pointing arrow signals a statistically significant increase between the two periods and a downward arrow signals a statistically significant decrease between the two periods (4Q2010 and 4Q2011).

The overwhelming majority (98 percent) of individuals who have Internet at home also have access to the MTS. It is also noted that almost three in four individuals with fixed telephone have STVS.

According to data from Marktest referring to 4th quarter 2011, it is also possible to identify that among individuals who have access to the telephone service, around 55 percent combine the two types of access (mobile and fixed), an increase of 4.6 percentage points over the previous year. This increase results from fixed telephone take up by those with mobile telephone only: the telephone service with mobile access only fell from 41.5 to 36.8 percent.

Graphic 11 – Possession of telephone service by type of access



Unit: %

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q2010 and 4Q2011

Base: Individuals aged 15 or more with access to telephone service (excluding non-responses)

Note 1: Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate.

Note 2: The upward pointing arrow signals a statistically significant increase between the two periods and a downward arrow signals a statistically significant decrease between the two periods (4Q2010 and 4Q2011).

The exclusive use of the telephone service through fixed access covered 7.9 percent of households with telephone service in 4th quarter of 2011.

The most recent data from the European Commission (EC), refering to February/March 2011, shows that combined use of MTS and FTS within Portuguese households is lower than the EU27 average (56 percent compared to 63 percent). However, since 2009, Portugal has reported the second highest rate of growth among EU27 countries in terms of combined use of these two types of voice access.



Graphic 12 – Possession of telephone service by type of access, EU27

Unit: %

Source: ICP-ANACOM calculations based on information from EC, E-Communications Household Survey, July 2011 (information referring to February/March 2011)

Base: Total households with telephone service

Socio-demographic profile of residential consumers

This section details the profile of the residential consumer of electronic communications services taking into account Marktest region, family structure, age group, education and employment status and social class of the household to which the individual belongs¹⁰.

Characterization by region

Residential consumption of electronic communication services is different depending on the region in which the individual resides. According to the chi-square test, an association between two variables can be observed (Marktest region and integrated consumption of services) but with a low level of intensity (Cramer V coefficient of 0.118¹¹).

Descriptive analysis of data

This method involves determining the proportion of individuals/family households with access to electronic communications services in accordance with the type of socio-demographic characteristics.

In addition, an assessment is made of the significant differences in the proportion of individuals/family dwellings who consume the type of services i in group j and in group j-1 by testing two samples for proportions. Within this section, i refers to the different types of service combinations (MTS+FTS+FBB+STVS, MTS, MTS+FTS+MBB+FBB+STVS, MTS+MBB, MTS+FTS+STVS, MTS+FTS, FTS, MTS+STVS, MTS+MBB STVS, MTS+FBB+STVS, other combinations), group j refers to the category of individuals with the socio-demographic variable under analysis and group j-1 refers to the individuals belonging to the other categories of this variable.

• Simple correspondence analysis

This technique allows study of the relationships and similarities between the horizontal and vertical categories of a double entry table with nominal variables by converting the table into a graphical representation where the rows and columns of the table are depicted using points in a graph. For a more detailed explanation of the methodology used, see the 2009 version of State of Communications Report (annex 1).

Cluster analysis

Groups were created - clusters - with homogeneous behaviour using the non-hierarchical K-means method, based on the Euclidean distance and centroid criterion for the aggregation of responses. he methodology of this type of analysis is described in detail in Annex 2 of the State of Communications Report, 2009.

¹¹ Where the measurement scale ranges from 0 - absence of association and 1 - full association.

¹⁰ Identification of the profile of the electronic communications consumer is based on three types of exploratory analysis made of additional data:

Integrated consumption of services	Greater Lisbon	Greater Porto	North coast	Centre coast	North interior	South	ARM	ARA	Total
MTS+FTS+FBB+STVS	23	24	18 🕇	18	12↑	14 *	23 *	29 *	18
MTS	9 *↓	9 *	14	15 *	16	17 *	#	#	13
MTS+FTS+MBB+FBB+STVS	19	15 *	12 * 🕇	14 *	6 *	12 *	#	#	12
MTS+MBB	7 *	6 * ↓	12 *	9 *	12	11 *	#	#	9
MTS+FTS+STVS	10 *	6 *↓	6 *	10 *	8 * 🕇	10 *	#	#	8
MTS+FTS	5 *	5 *	7 *	6 * 🗸	14	8 *	#	#	7
FTS	#	#	6 *	4 *	10 *	5 *	#	#	5
MTS+STVS	3 *↓	7 *	6 *	5 *	3 *	5 *	#	#	5
MTS+MBB+STVS	5 *	6 *	3 *	5 *	4 *	#	#	#	4
MTS+FBB+STVS	5 *	6 *	3 * 🗸	3 *	#	#	#	#	3
Other combinations	14	12 *	15	12 *	13↓	13 *	19 *	#	13
Total	100	100	100	100	100	100	100	100	100

Table 17 – Consumption of electronic communications services according to Marktest region

Unit: %

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q2011

Base: Individuals aged 15 or over with voice electronic communications services according to Marktest region (excluding non-responses)

Note 1: Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate.

Note 2: The upward pointing arrow signals a statistically significant increase between the two periods and a downward arrow signals a statistically significant decrease between the two periods (4Q2010 and 4Q2011).

Note 3: The shaded proportions indicate those that are significantly different (horizontal) in accordance with the test of two samples for proportions. Higher proportions are highlighted in light shading and lower proportions in dark shading.

The population residing in Greater Lisbon and Greater Porto stand out in terms of the intensity of integrated consumption of four services (MTS+FTS+FBB+STVS). On a relative basis, Greater Lisbon residents also tend to report more significant consumption of five services (MTS+FTS+MBB+FBB+STVS).

During 2011, the integrated consumption of the four services (fixed and mobile telephone, FBB and STVS) reported a significant increase in the North Interior and Coast regions. The North Interior stands out with a relative increase of nearly 80 percent (increasing from 7 percent at the end of 2010 to 12 percent at the end of 2011), while remaining below the national average.

Use of MTS in conjunction with MBB tends to be relatively more significant in the North regions of the country (Coast and Interior). The North Interior is the region where a greater

propensity to consume FTS is observed, as well as the telephone service through two types of access (fixed and mobile).



Graphic 13 – Correspondence analysis between the integrated consumption of services and Marktest region

Base: Individuals aged 15 or over with voice electronic communication services according to Marktest region (excluding non-responses)

Note: The two axes represented show 79 percent of the total inertia. The following categories stand out with a smaller contribution to the formation of the two axes (less than 52 percent): MTS+FTS+STVS, MTS+STVS, MTS+MBB+STVS and other combinations in terms of integrated consumption of services and North and Centre Coast and A.R. Azores in terms of Marktest regions.

These regional differences are influenced by the geographical availability of services and may not reflect differences in preferences among consumers from different geographical areas.

On the other hand, with the great majority of the Portuguese population resident in the Marktest regions of North Interior, Greater Lisbon, North Coast and Centre Coast, the type of consumption in these geographic areas tends to have greater overall impact.

Source: This analysis is provided by ICP-ANACOM based on MARKTEST microdata – Barómetro de Telecomunicações, (Telecommunications Barometer), 4Q2011

Characterization according to family structure

The profile of the consumer of electronic communications services is statistically associated with the size of the family household in which the individual is included (intensity of 0.248 according to Cramer V coefficient).

Individuals living in larger households are more likely to access more electronic communications services simultaneously (MTS+FTS+FBB+STVS and MTS+FTS+MBB+FBB+STVS) or to have other less usual combination of services that include Internet.

Additionally, during 2011, larger households significantly increased consumption of various services. In this respect, note is made of homes with four or more individuals whose consumption of fixed and mobile telephone in conjunction with FBB and STVS rose from 18 to 27 percent.

In contrast, individuals in small households tend to use a smaller number of services more intensely, especially the fixed telephone and/or mobile telephone service.

In particular, individuals who live alone stand out as reporting a high percentage of mobile telephone service use on an exclusive basis (23 percent), together with individuals living in households consisting of two individuals who make more intensive use of the telephone service (fixed and mobile) on its own or in conjunction with STVS.

Integrated consumption of services	1 individual	2 individuals	3 individuals	4 or more individuals	Total
MTS+FTS+FBB+STVS	5 *	12	23 🕇	27 1	18
MTS	23	14	10↓	9	13
MTS+FTS+MBB+FBB+STVS	4 *	8	16 1	18	12
MTS+MBB	10 *	6 *	12	11↓	9
MTS+FTS+STVS	11 *	16	5 *	3 *	8
MTS+FTS	11 *	13	4 *	3 *	7
FTS	12 *	10	#	#	5
MTS+STVS	6 *	5 *	4 *	5 *	5
MTS+MBB+STVS	3 *	3 *	6 *	5 *	4
MTS+FBB+STVS	#	3 *	4 * 🗸	3 *	3
Other combinations	11 * 🕇	10	16	16↓	13
Total	100	100	100	100	100

Table 18 – Consumption of electro	onic communications services	according to size of household
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Unit: %

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q2011

Base: Individuals aged 15 or over with voice electronic communications services according to individual's family size (excluding non-responses)

Note 1: Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate.

Note 2: The upward pointing arrow signals a statistically significant increase between the two periods and a downward arrow signals a statistically significant decrease between the two periods (4Q2010 and 4Q2011).

Note 3: The shaded proportions indicate those that are significantly different (horizontal) in accordance with the test of two samples for proportions. Higher proportions are highlighted in light shading and lower proportions in dark shading.

Note 4: This sub-variable is not part of the stratification variables of the sample of individuals (gender, age group and Marktest region), whereby this information is purely indicative of existing behaviour.

Graphic 14 – Correspondence analysis between the integrated consumption of services and household size



Source: This analysis is provided by ICP-ANACOM based on Marktest microdata - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q2011

Base: Individuals aged 15 or over with voice electronic communications services according to individual's family size (excluding non-responses)

Note: The two axes represented show 99 percent of the total inertia. The following categories stand out with a smaller contribution to the formation of the two axes (less than 53 percent): MTS+STVS and MTS+FBB+STVS. The remaining categories are explained by the two axes by more than 94 percent.

It is also noted that the consumption of electronic communications by individuals with children in their household is distinct from individuals with elderly members in their households. Each of these segments is strongly associated with the type of integrated consumption of services. The Cramer V coefficient is 0.32 or 0.50 depending on whether children or elderly people are present in the household, respectively.

The presence of children in household is correlated with the consumption of a broader range of services, especially combinations comprising the Internet access service: combinations of four services (MTS+FTS+FBB+STVS) and five services (MTS+FTS+MBB+FBB+STVS), as well as other types of less usual combinations that include Internet access.

During 2011, households with children reported a sharp increase in the joint use of fixed and mobile telephone services with FBB and STVS (almost 50 percent). This increase entailed the reduction of other types of less diversified combinations services such as mobile telephone service on its own or in conjunction with MBB, and mobile telephone service in conjunction with FBB and STVS. The existence of elderly members in the household is linked to more limited consumption of services: in particular use of FTS and MTS on their own or in conjunction with the SVTS and exclusive use of FTS. Moreover, it is observed that use of the Internet access service in conjunction with other electronic communications services is relatively less intense in these cases.

Table 19 – Consumption of electronic communications services according to presence of children or elderly in household

Integrated consumption of convises	Househo	Total	
integrated consumption of services	Children	Elderly	Total
MTS+FTS+FBB+STVS	25 ↑	11	18
MTS	10↓	11	13
MTS+FTS+MBB+FBB+STVS	17 ↑	6 *	12
MTS+MBB	12↓	2 *	9
MTS+FTS+STVS	3 *	19	8
MTS+FTS	3 *	17	7
FTS	#	17	5
MTS+STVS	5 *	3 *	5
MTS+MBB+STVS	7 *	#	4
MTS+FBB+STVS	4 * 🗸	#	3
Other combinations	15	12	13
Total	100	100	100

Unit: %

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q2011

Base: Individuals aged 15 years or over with voice electronic communications services according to the presence of children or elderly in household (does not include non-responses).

Note 1: Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate. **Note 2**: The upward pointing arrow signals a statistically significant increase between the two periods and a downward

arrow signals a statistically significant decrease between the two periods (4Q2010 and 4Q2011). **Note 3:** The shaded proportions indicate those that are significantly different (horizontal) in accordance with the test of two samples for proportions. Higher proportions are highlighted in light shading and lower proportions in dark shading.

Note 4: This sub-variable is not part of the stratification variables of the sample of individuals (gender, age group and Marktest region), whereby this information is purely indicative of existing behaviour.
Characterization according to age group

As the individual's age increases, distinct patterns of consumption can be observed¹². A trend can be seen towards more restricted use of electronic communications services, with a less evident presence of the Internet access service.

In the age group of 65 or over, exclusive use of the FTS and use of the FTS and MTS, whether or not in conjunction with the STVS, becomes more relevant. According to provisional data from the 2011 census of INE (Statistics Portugal), about 19 percent of the population residing in Portugal is aged 65 years or over.

The population aged 55 and over tends to make more intensive use of the FTS and MTS.

During 2011, the combined consumption of MTS+FTS+FBB+STVS increased in almost all age groups, although individuals aged between 25 and 54 years made more intensive use of this type of combination of services. Individuals aged 55 to 64 years stand out with a more significant increase in this type of use (from 13 to 19 percent between the end of 2010 and the end of 2011).

The exclusive use of MTS is more intense among individuals in the 35 - 64 age group.

Among the younger population (up to 34 years), there is a prevalence of consumption of combinations of services that include the MBB, especially MTS+MBB, as well as the five services being analyzed (MTS+FTS+MBB+FBB+STVS).

¹² According to the chi-square test, an association can be observed between the type of integrated consumption of services and the individual's age group. Even so, this association can be seen with moderate intensity (Cramer V coefficient of 0.538).

Integrated consumption of services	15-24	25-34	35-44	45-54	55-64	65 or over	Total
MTS+FTS+FBB+STVS	20 🕇	21 ↑	22 ↑	22	19 🕇	7 *	18
MTS	6 * 🗸	8 * 🗸	17	19	19	11 *	13
MTS+FTS+MBB+FBB+STVS	22 ↑	15	14 🕇	13 *	8 *	3 *	12
MTS+MBB	16	19	11 *	6 *	#	#	9
MTS+FTS+STVS	#	2 *	4 *	7 *	16 * ↑	21	8
MTS+FTS	#	#	#	6 *	11 *	20	7
FTS	#	#	#	#	6 *	22	5
MTS+STVS	4 *	4 *	6 *	5 *	7 *	3 *↓	5
MTS+MBB+STVS	5 *	8 *	7 *	4 *	#	#	4
MTS+FBB+STVS	4 *	5 * ↓	4 *	4 *	#	#	3
Other combinations	19↓	16	13 *	13 *	8 *	11 *1	13
Total	100	100	100	100	100	100	100

Table 20 - Consumption of electronic communications services by age group

Unit: %

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q2011

Base: Individuals aged 15 or over with voice electronic communications services according to age of respondent (excluding non-responses). Note 1: Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate.

Note 2: The upward pointing arrow signals a statistically significant increase between the two periods and a downward arrow signals a statistically significant decrease between the two periods (4Q2010 and 4Q2011). **Note 3:** The shaded proportions indicate those that are significantly different (horizontal) in accordance with the test of two

samples for proportions. Higher proportions are highlighted in light shading and lower proportions in dark shading.



Graphic 15 – Correspondence analysis between the integrated consumption of services and age group

Source: This analysis is provided by ICP-ANACOM based on Marktest microdata - *Barómetro de Telecomunicações* (Telecommunications Barometer) Study, 4Q2011

Base: Individuals aged 15 years or over with voice electronic communications services according to the presence of children/elderly in household (does not include non-responses).

Note: The two axes represented show 96 percent of the total inertia. All categories are explained by the two axes by more than 85 percent.

Characterization according to education and employment status

The individual's level of education and their employment status are also determining factors for the type of integrated consumption of electronic communication services reported¹³.

Lower levels of education tend to prevail among the general population. According to INE (Statistics Portugal) (Census 2011), about 45 percent of Portugal's population has an education level which does not exceed the 1st cycle of basic education. In this group,

¹³ The level of education has a higher intensity of association (Cramer V coefficient of 0.319), compared to the employment status of the individual (0.288).

exclusive access to the FTS and/or MTS, and its use in conjunction with STVS tends to have a higher expression.

Individuals with a higher level of education (exceeding 2nd cycle of basic education) tend to have a larger and more diversified set of services.

During 2011, there was a notable increase in consumption of the set of services comprising MTS+FTS+FBB+STVS among individuals with intermediate levels of education (2nd cycle of basic education to secondary education), with a relative increase of nearly 60 percent in individuals with 2nd cycle of basic education. The combination of the five services (MTS+FTS+FBB+MBB+STVS) reported significant increases among more educated individuals (secondary and higher education).

Integrated consumption of services	1st cycle basic ed. or lower	2nd cycle basic ed.	3rd cycle basic ed.	Secondary education	Higher educatio n	Total
MTS+FTS+FBB+STVS	7 *	16 * 🕇	24 1	23 1	25	18
MTS	22	22 *	12 * 🗸	6 *↓	4 *	13
MTS+FTS+MBB+FBB+STVS	#	6 *	11 *	19 1	26 ↑	12
MTS+MBB	#	10 *	12 * 🗸	15	12 *	9
MTS+FTS+STVS	17	8 *	7 *	5 *	#	8
MTS+FTS	19	6 * ↓	4 *	2 *	#	7
FTS	17	#	#	#	#	5
MTS+STVS	5 *	9 *	6 *	3 *	#	5
MTS+MBB+STVS	#	9 *	6 * 🕇	5 *	5 * 🗸	4
MTS+FBB+STVS	#	#	4 *	5 *	4 *	3
Other combinations	8 *	11 *	14	17	17	13
Total	100	100	100	100	100	100

Table 21 – Consumption of electronic communications services according to level of education

Unit: %

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q2011

Base: Individuals aged 15 years or over with voice electronic communications services according to respondent's level of education (excludes non-responses).

Note 1: Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate. **Note 2**: The upward pointing arrow signals a statistically significant increase between the two periods and a downward

arrow signals a statistically significant decrease between the two periods (4Q2010 and 4Q2011). **Note 3:** The shaded proportions indicate those that are significantly different (horizontal) in accordance with the test of two samples for proportions. Higher proportions are highlighted in light shading and lower proportions in dark shading.

Note 4: This sub-variable is not part of the stratification variables of the sample of individuals (gender, age group and Marktest region), whereby this information is purely indicative of existing behaviour.



Graphic 16 – Correspondence analysis between the integrated consumption of services and level of education

Source: This analysis is provided by ICP-ANACOM based on Marktest microdata - *Barómetro de Telecomunicações* (Telecommunications Barometer) Study, 4Q2011

Base: Individuals aged 15 years or over with voice electronic communications services according to respondent's level of education (excludes non-responses).

Note: The two axes represented show 98.5 percent of the total inertia. All categories are explained by the two axes by more than 91 percent.

As regards the employment status variable, it is reported that about half of the students surveyed have a diverse combination of services: MTS+FTS+FBB+MBB+STVS (27 percent) or MTS+FTS+FBB+STVS (22 percent). Even so, in 2011 the use of such services increased more significantly in relative terms among individuals in employment.

In contrast, a preference is observed among the retired or unemployed population for access to the telephone service (fixed and/or mobile), exclusively or in conjunction with STVS.

Integrated consumption of services	Employed	Retired / unemployed	Students	Stay-at- home	Total
MTS+FTS+FBB+STVS	21 ↑	13↑	22	16 *↑	18
MTS	12 🗸	16	#	23 *↑	13
MTS+FTS+MBB+FBB+STVS	15 ↑	5 *	27	#	12
MTS+MBB	12	4 *	13 *	#	9
MTS+FTS+STVS	5 * 🕇	15	#	17 *	8
MTS+FTS	4 *	15	#	#	7
FTS	#	14	#	10 *	5
MTS+STVS	5 *	5 *	#	#	5
MTS+MBB+STVS	7	#	4 *	#	4
MTS+FBB+STVS	5 * ↓	#	#	#	3
Other combinations	13↓	11	22	10 *	13
Total	100	100	100	100	100

Table 22 – Consumption of electronic communications services according to employment status

Unit: %

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q2011

Base: Individuals aged 15 years or over with voice electronic communications services according to respondent's employment status (excludes non-responses).

Note 1: Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate. **Note 2:** The upward pointing arrow signals a statistically significant increase between the two periods and a downward arrow signals a statistically significant decrease between the two periods (4Q2010 and 4Q2011).

Note 3: The shaded proportions indicate those that are significantly different (horizontal) in accordance with the test of two samples for proportions. Higher proportions are highlighted in light shading and lower proportions in dark shading.

Note 4: This sub-variable is not part of the stratification variables of the sample of individuals (gender, age group and Marktest region), whereby this information is purely indicative of existing behaviour.



Graphic 17 – Correspondence analysis between the integrated consumption of services and employment status

Source: This analysis is provided by ICP-ANACOM based on Marktest microdata - *Barómetro de Telecomunicações* (Telecommunications Barometer) Study, 4Q2011

Base: Individuals aged 15 years or over with voice electronic communications services according to respondent's employment status (excludes non-responses).

Note: The two axes represented show 99 percent of the total inertia. The following categories stand out with a smaller contribution to the formation of the two axes (less than 86 percent): MTS+STVS and stay-at-home. The remaining categories are explained by the two axes by more than 97 percent.

Characterization according to social class

The population's access to electronic communications services also varies by the household's social class. The intensity of association measured by the Cramer V coefficient is 0.295.

Individuals belonging to households from higher social classes have more electronic communication services. About 25 percent of individuals belonging to an upper or upper middle social class (A/B) has four services MTS+FTS+FBB+STVS), while 27 percent have the five services in analysis (MTS+FTS+MBB+FBB+STVS). The middle class also has high proportions of the four and five services mentioned above, whose consumption

saw significant growth in 2011, with the combination of MTS+MBB and Other combinations also common among this group.

Individuals in households of a lower social class use fewer services, with a greater propensity for exclusive use of MTS and/or FTS. However, the combination of the telephone service with STVS also tends to be more significant among the population from households with a lower social class.

Integrated consumption of services	A/B – Upper or upper middle	C1 — Middle	C2 – Lower middle	D – Lower	Total
MTS+FTS+FBB+STVS	25	25 ↑	18 🕇	9 *↑	18
MTS	4 *	7 *↓	14 🗸	22	13
MTS+FTS+MBB+FBB+STVS	27 ↑	16 个	10	3 *	12
MTS+MBB	9 *	13	12↓	4 *	9
MTS+FTS+STVS	4 *	6 *	7 *	16	8
MTS+FTS	#	3 *↓	7 *	16	7
FTS	#	#	3 *	14	5
MTS+STVS	#	4 *	6 *	5 *	5
MTS+MBB+STVS	4 * ↓	5 *	6 *	#	4
MTS+FBB+STVS	6 *	4 *↓	3 *	#	3
Other combinations	15 🗸	16	13	10	13
Total	100	100	100	100	100

Table 23 – Consumption of electronic communications services according to social class

Unit: %

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q2011

Base: Individuals aged 15 or over with voice electronic communications services according to social class (excluding non-responses)

Note 1: Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate. **Note 2**: The upward pointing arrow signals a statistically significant increase between the two periods and a downward arrow signals a statistically significant decrease between the two periods (4Q2010 and 4Q2011).

Note 3: The shaded proportions indicate those that are significantly different (horizontal) in accordance with the test of two samples for proportions. Higher proportions are highlighted in light shading and lower proportions in dark shading. **Note 4:** This sub-variable is not part of the stratification variables of the sample of individuals (gender, age group and Marktest region), whereby this information is purely indicative of existing behaviour.

Narktest region), whereby this information is purely indicative of existing

Note 5: Class A is the highest social class and D the lowest.

Using correspondence analysis two groups of individuals in lower social classes can be extracted:

 individuals of lower middle class (C2) that make intensive use of the MTS, the STVS and MBB on their own or in combinations, and without access to the FTS; individuals of the lower class (D) using the FTS and/or MTS and STVS in combination and without Internet access.

Graphic 18 – Correspondence analysis between the integrated consumption of services and household's social class



Source: This analysis is provided by ICP-ANACOM based on Marktest microdata - *Barómetro de Telecomunicações* (Telecommunications Barometer) Study, 4Q2011

Base: Individuals aged 15 or over with voice electronic communications services according to household social class (excluding non-responses)

Note: The two axes represented show 98.8 percent of the total inertia. All categories are explained by the two axes by more than 88 percent.

Characterization of users of service/combinations of services¹⁴

To this point, each of the individual's characteristics have been analysed in a onedimensional perspective. The intention now is to systematize the characteristics that stand out in respect of each of the groups of users of services from a multidimensional perspective. It was possible to identify four profiles of use of electronic communications services using cluster analysis. The table below illustrates the main characteristics

¹⁴ The combination of services does not necessarily imply its use in a bundle multiple play.

identified in each obtained group, enabling comparison of the incidence of each characteristic in the respective group and in comparison to the total population.

The identified groups have the following characteristics:

• The first of the groups identified comprises users of fewer electronic communications services favouring the telephone service (MTS+FTS+STVS; MTS; MTS+FTS; FTS).

The members of this first group belong to smaller sized households (1-2 individuals), which include elderly residents and residents of a lower social class (D). This type of user of electronic communications tends to have greater weight, in relative terms, in the South and in North Interior of Portugal. The fact of being retired, unemployed or a pensioned, of older age (65 years or over) and with a lower level of education (up to 1st cycle) appears to be determinant for classifying this type of user.

• The second group comprises users who prefer the MTS together with STVS and/or MBB (MTS+MBB; MTS+STVS; MTS+MBB+STVS).

These individuals tend to belong to larger households (three or more individuals) and the lower middle social class (C2), with greater prevalence in the North Coast region. This group tends to consist of individuals aged 15 to 24 or 45 to 54, with an intermediate education level (2nd and 3rd cycles) and who are professionally classified as qualified and non-qualified employees.

- The third group of users of electronic communications comprises users consuming several services in an integrated manner, while favouring the Internet access service (mobile and/or fixed). Two socio-demographic profiles are distinguished with this consumption type:
 - Individuals with higher education, in upper or middle management or technical specialists, of upper or upper middle social class (A/B) and aged 25 to 34 years.
 This group comprises individuals in dwellings composed of three individuals and residents in Portugal's two large cities (Greater Lisbon or Greater Porto).
 - Individuals aged 15 to 24 years, with secondary education, students or in employment (as small business owners or employees in services, retail or administration). This group comprises middle class (C1) individuals, belonging to larger households (four or more), especially where children are present.

	GROUI	P 1		GRO	UP 2		C	GROUP 3	- Diver	sity of services		
	Use of fewer services of telephone	with prev service	valence	Use of fewer service of M	es with pre ITS	evalence	Better educate	Better educated		Young	er	
		% group	% overall		% group	% overall		% group	% overall		% group	% overall
	MTS+FTS+STVS	22,2	8,5	MTS+MBB	9,9	9,5	MTS+FTS+FBB+STVS	28,2	18,3	MTS+FTS+FBB+STVS	30,7	18,3
Combination of	MTS	14,1	12,8	MTS+STVS	4,8	4,6	MTS+FTS+MBB+FBB+STVS	31,7	12,5	Other combinations	17,1	13,4
services	MTS+FTS	20,3	7,5	MTS+MBB+STVS	4,6	4,3	MTS+FBB+STVS	3,9	3,3			
	FTS	18,4	5,4				Other combinations	17,4	13,4			
Marktest region	North Interior	24,7	21,2	North Coast	21,4	18,5	Greater Lisbon	26,4	19,0			
	South	14,0	10,9				Greater Porto	14,1	10,5			
Family size	Up to two individuals	82,5	44,4	Three or more individuals	79,2	55,6	Three individuals	33,2	25,9	Four of more individuals	43,1	29,7
Presence of elderly/children	Elderly at home	73,7	27,8	Children at home	59,2	36,7				Children at home	50,9	36,7
Age group	55 years or over	84,2	47,7	15-24 years	24,8	17,0	25-34 years	43,1	18,1	15-24 years	26,9	17,0
, igo 9: oup				45-54 years	21,2	15,3						
Level of education	1st cycle of basic education or under	77,5	28,3	2nd + 3rd cycle basic ed.	59,5	27,2	Higher education	97,0	15,7	Secondary education	75,0	28,7
	Stay-at-home	7,5	4,5	Skilled staff	36,6	16,6	Upper management	22,4	3,0	Small business owners	9,7	3,0
Employment status and occupation	Retired/	81,0	32,8	Unskilled staff	21,2	9,7	Middle management	38,7	5,7	Service/retail staff administrative	27,9	9,3
un	anompioyou						Specialist staff	16,1	4,0	Students	20,7	11,6
Social class	Class D	72,3	27,5	Class C2	88,1	30,2	class A/B	80,1	17,3	Class C1	79,1	24,9

Table 24 – Profile of users of electronic communications services in an integrated perspective

Source: This analysis is provided by ICP-ANACOM based on Marktest microdata - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q2011

Base: Individuals aged 15 or over with voice electronic communications services (excluding non-responses)

Note 1: Cluster analysis using K-means method with four classes. According to the distance matrix between the groups, it is observed that Group 3 is set further apart, both from Group 3 (2,102), and from Group 4 (2,090).

Note 2: The only variables included in the stratification plain of the sample of individuals refer to gender, age group, district and Marktest region, whereby the information obtained from the remaining divisions are purely indicative of the profile of the user of services from an integrated perspective.

Satisfaction of residential consumers with services provided

Generally, users of electronic communications services tend to be satisfied with the services provided.

Table 25 – Average level of satisfaction with the service provided by the operator of each of individual's electronic communication services

			MTS	FTS	IAS	STVS	Total
	MTS+FTS+FBB+S	STVS	8,2	8,0	7,9	7,8↓	8,0
ces	MTS	TS					8,3
servi	MTS+FTS+MBB+FBB+STVS		8,2	8,0	8,0 个	7,9	8,0
l of s	MTS+MBB		8,1		7,5		7,9
otion	MTS+FTS+STVS		8,4	8,1		7,9	8,2
dun	MTS+FTS		8,4	8,2			8,3
suoc	FTS	FTS		8,7			8,7
tedo	MTS+STVS		8,3↓			7,9 🗸	8,1 🗸
egrat	MTS+MBB+STVS		8,2		7,2	7,4	7,6
Inte	MTS+FBB+STVS		8,3		7,9	7,9 🗸	8,0
	Other combination	s	8,1	7,9	7,6	7,8↓	7,9
	Group 1 (favour S	Г)	8,5	8,4	8,1	8,1	8,4
lps ers)	Group 2 (favour M	TS)	8,4	8,1	7,9	8,0	8,1
Grou (cluste	Group 3	More educated	7,9	7,8	7,7	7,4	7,7
	(diversity of services)	Younger	8,1	7,9	7,7	7,7	7,9
	Total		8,2	8,1个	7,8	7,8↓	8,1

Unit: scale 1 (totally dissatisfied) to 10 (totally satisfied)

Source: This analysis is provided by ICP-ANACOM based on Marktest microdata - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q2011

Base: Individuals aged 15 or over with voice electronic communications services (excluding non-responses). Note 1: See previous section for more detail on the profile of the groups (clusters).

Note 2: The upward pointing arrow signals a statistically significant increase between the two periods and a downward arrow signals a statistically significant decrease between the two periods.

Note 3: The shaded proportions indicate those that are significantly different (horizontal) according to the test of equality between averages. Higher proportions are highlighted in light shading and lower proportions in dark shading. **Note 4:** The margin of error of the averages on a scale of 1 to 10 are all equal to or less than 0.32 absolute points, with exception of MTS evaluation for those possessing combination of MTS+MBB+STVS.

At the end of 2011, individuals who had only the FTS and/or MTS expressed, on average, greater satisfaction with the service provided. The average satisfaction among these individuals was between 8.3 and 8.7.

Compared to the previous year, there was a significant drop in the level of satisfaction of individuals with MTS+STVS (from 8.5 to 8.1).

There is a greater tendency for individuals with MTS+MBB+STVS and other conjugations (less standard usage profiles mostly with access to MBB), and MTS+MBB, are relatively less satisfied, with access to MBB contributing most to this dissatisfaction. The average satisfaction of these individuals is between 7.6 and 7.9.

Individuals with the Internet tend to be more satisfied with this service when it is combined with a greater diversity of services. Users of the FTS and MTS, STVS, FBB and with or without MBB are notable in expressing levels of satisfaction with the IAS that are above average between 7.9 and 8.0.

Individuals who have the MTS tend to be relatively more satisfied (8.2), in line with the previous year, followed by greater satisfaction with the FTS (8.1) which improved its position over the previous year. The STVS drops to third position with a lower level of satisfaction compared to the previous year (7.82). Finally, the IAS drives a greater level of dissatisfaction among its users (7.79).

Users in group 1 tend to be more satisfied, on average, with the services available to them.

Users in the group 3 tend to be less satisfied with all services that they have, with less expression in IAS, are reported with overall average satisfaction of 7.7 for the most educated group and 7.9 for the younger group.

2.2.2. Profile of business usage and users of electronic communications

An analysis follows of the business user of electronic communications from an integrated perspective, based on the *Inquérito ao Consumo das Comunicações Eletrónicas – PME* (Consumer survey of electronic communications – SME)¹⁵ of

¹⁵ The universe of this study refers to micro, small and medium-sized enterprises (SME) based in Portugal, whose economic activity is covered by one of the following sections and groups of CAE (business activity) codes (Rev. 3): Section C (Manufacturing), Section F (Construction), Section G (Wholesale and retail trade; Repair of motor vehicles and motorcycles), Section H (Transportation and storage), Section I (Lodging, restaurants and similar), Section J (Information and communication), Section K (Financial activities and insurance), Section L (Real estate), Section M (Consultancy, scientific, technical and similar activities) and Section N (Administrative activities and support services). The sampling plan includes a random sampling by region (NUTSII), sector and company size. 2,503 interviews were held guaranteeing a maximum absolute error rate of 2.0 (semi-amplitude of a confidence interval of 95% for a proportion). The specific sub-divisions within each electronic communication service lead to higher errors: MTS (2.1), FTS (2.1), fixed Internet service (2.3) and mobile Internet service (3.4). The fieldwork was carried out by GFK Metris. Telephone interviews were carried out, using the Computer Assisted Telephone Interviewing (CATI) system from 20 October to 16

December 2010. According to the latest data from INE (Statistics Portugal) (*Sistema de Contas Integradas das Empresas* (Integrated Business Accounts System), 2007)), the Portuguese business fabric consists mainly of micro enterprises (95.4 percent). Small companies represent 3.9 percent of the business fabric, medium-sized enterprises 0.6 percent and large companies 0.1 percent¹⁶.

The electronic communication services considered in this integrated analysis are:

- mobile telephone service (MTS);
- fixed telephone service (FTS);
- Internet access service (IAS), distinguishing its four forms of access: mobile broadband (MBB), fixed broadband (FBB), mobile narrowband (MNB) and fixed narrowband (FNB);
- subscription television service (STVS).

Penetration of services

The most common combination of services among SME (with fewer than 250 employees) comprises use of the FTS, MTS and FBB (22.5 percent at the end of 2010). These are followed by companies that, in addition to these services also use MBB (14.3 percent).

Exclusive use of the telephone service in Portuguese companies with fewer than 250 employees was still significant at the end of 2010, covering about 22 percent of these companies: about 8.9 percent had FTS only, 7.3 percent had the FTS and MTS and 6.9 percent used MTS only.

December 2010. The estimation was made using extrapolations calculated by GfK Metris. The extrapolations make it possible to adjust the results obtained to known totals of auxiliary variables (NUTS II, sector of activity and company size) in order to correct distortions in the sample.

¹⁶ In this context, the following concepts are considered: micro enterprises - companies with fewer than 10 employees, small businesses - companies with 10 to 49 employees, medium-sized enterprises - companies with 50 to 249 employees, large companies - 250 or more employees.



Graphic 19 – Penetration of services and combinations of services in SME

Unit: %

Source: Inquérito ao Consumo das Comunicações Eletrónicas (Consumer Survey of Electronic Communications), Small and Mediumsized Enterprises, December 2010

Base: Companies with fewer than 250 employees (excluding non-responses)

Note: Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate.

At the end of 2010, take up of multiple play offers among SME was reported at 37.4 percent.

Characterization of the business user of electronic communications services

In order to identify the profile of business customers from an integrated prospective of electronic communication services, use was made of cluster analysis¹⁷, which allowed differentiation of three groups:

Companies which favour a diverse set of electronic communications services.
 Companies which favour a diverse set of electronic communications services, belong mostly to the non-commerce service sector, and are characterized by being small or medium-sized (five to 49 employees), having been in the market for five to eight years and are more likely located in the Lisbon, Centre or South regions.

¹⁷ K-means method.

Companies that use the telephone service only.

Companies that use the telephone service only (fixed and/or mobile) mainly belong to the manufacturing and construction sectors, and are characterized by their small size (up to four employees) and by being located in the North of the country.

Companies that use the telephone service, possibly in combination with other services such as FBB.

Companies that consume more the two types of telephone access (fixed and mobile) more intensely, whether or not in combination with FBB, belong to the commerce sector and are classified among the oldest companies (20 or more years). They are located in Centre and South regions of Portugal.

Table 26 – Profile	of business	users of	electronic	communications	services	from an	integrated
perspective							

		C	GROUP 1		GROUP 2			GF	OUP 3	
		Divers	ity of service	s	Exclusive use of telephone service			Telephone service		
			0) % group	1) % overal I	2)	% group	% overall	3)	% group	% overall
		FTS+MTS+FBB+ MBB	15.7	14.3	FTS	10.7	8.9	FTS+MTS+ FBB	28.9	22.5
Combination of services		FTS+MTS+FBB+ STVS	4.7	3.7	FTS+MT S	8.8	7.3	FTS+MTS	9.5	7.3
		Other combinations	20.1	17.1	MTS	9.6	6.9			
NUTS region	II	Centre Lisbon South	27.0 40.5 16.4	22.3 25.9 12.3	North	80.3	35.9	Centre South	28.5 14.7	22.3 12.3
Size company	of	Five to 49 staff	56.4	44.2	Up to four staff	74.2	53.7	10 to 19 staff	9.7	8.2
Sector activity	of	Other services	72.6	35.3	Industrial constructi on	33.9 28.2	14.5 16.5	retail	100.0	33.6
Age	of	Five to eight years	18.9	16.2	< 5 years	13.8	10.6	> 19 years	39.1	29.4
company					12 years	19.4	17.0			

Unit: %

Source: Inquérito ao Consumo das Comunicações Eletrónicas (Consumer Survey of Electronic Communications), SME, December 2010

Base: Total businesses with fewer than 250 employees (excluding non-responses)

Note: Cluster analysis through K-means method with three classes. According to the distance matrix between the groups, it is observed that groups 1 and 3 are set furthest apart from each other (1,282)

2.3. Profile of non-user of electronic communications

According to the *Inquérito ao Consumo dos Serviços de Comunicações Eletrónicas* (Consumer Survey of Electronic Communications Services)¹⁸, promoted in December 2009 by ICP-ANACOM) it is estimated that 4.7 percent of individuals aged 15 years or more did not have the telephone service and that 4.0 percent did not have any electronic communications service. If the 'dwelling' unit is used, the percentage of non-use of the telephone service would be 3.9 percent.

INE (Statistics Portugal) estimates that in 2010, 6 percent of households had no fixed or mobile telephone¹⁹.

The latest data from the EC, referring to February/March 2011, shows that about 5 percent of Portuguese households had no type of access to the telephone service (3 percentage points above the EU27 average). This situation remained unchanged in comparison to the end of 2009. Only four EU countries have a percentage of households without telephone service equal to or higher than in Portugal.

¹⁸ The universe is made up of individuals aged 15 years or older residing in private housing units located in mainland Portugal or in the Autonomous Regions (Azores and Madeira). The sample is representative at NUTS II level (with sampling errors of no more than 5.5 percentage points for smaller regions - Alentejo, Algarve, A.R. Azores and A.R. Madeira and no higher than 4.5 for the remaining regions) with 3,106 interviews conducted. Households were selected through random sampling stratified proportionally according to the variables of the NUTS II region and size of family household. Within each household an individual was selected through sampling by quotas ensuring the combination of NUTS II region, gender and age and a minimum number of quotas according to NUTS II region, gender and level of education/employment status, according to the Population Census (2001) conducted by INE (Statistics Portugal). Data collection was performed using Computer Assisted Personal Interviewing (CAPI) conducted between 6 November and 20 December 2009. The results for the MTS are based on the universe of individuals and has a maximum margin of error of less than 2 p.p. (With a confidence level of 95 percent). The results on the FTS, IAS and STVS are based on the universe of households and have a maximum margin of error of less than 2.6 p.p. (With a confidence level of 95 percent). The fieldwork and data processing was the responsibility of the company GFK Metris.

¹⁹ Source: INE (Statistics Portugal), ICOR - Inquérito às condições de vida e rendimentos (Survey on income and living conditions), 2010.



Graphic 20 - Rate of non-use of the telephone service, EU27

Unit: %

Source: EC, E-Communications Household Survey, October 2010 (information referring to November/December 2009) and July 2011 (information referring to February/March 2011)

Base: Total homes

Note: Information is same for both reported periods.

In Portugal, penetration of the telephone service is lower among homes located in less populated areas. In densely populated areas, the service has a penetration rate among Portuguese households that is similar to the EU27 average.



Graphic 21 – Households without telephone service by area of residence

Unit: %

Source: EC, E-Communications Household Survey, July 2011 (information referring to February/March 2011)

Base: Total homes

The latest EC data also shows that there is an increased trend towards smaller households not having the telephone service, a situation that is even more evident in the case of Portugal: about 14 percent of individuals living alone had no telephone service (compared to EU27 average of 4 percent).





Unit: %

Source: EC, E-Communications Household Survey, July 2011 (information referring to February/March 2011)

Base: Total homes

BUNDLED OFFERS

3. Bundled offers

Given that the production, distribution and consumption of electronic communication services is performed with increasing frequency in combination, this chapter examines the situation in 2011 as regards the sale and acquisition of electronic communication services in integrated format, known as bundled or multiple play offers²⁰. Bundled offers combine voice, Internet access and subscription TV services.

The offer, profile of users and usage, as well as the number of subscribers, revenues and penetration of such offers are detailed below.

Firstly, it should be noted that during the period considered in this analysis, the concept of bundle used for the purpose of compiling indicators was modified²¹. This should be taken into consideration whenever comparisons are made between different periods.

The following section summarizes the main aspects of the evolution of bundled services during 2011.

3.1. Main aspects in 2011

- In 2011, the number of subscribers to bundled offers reached nearly 2.2 million and revenues derived from bundled services totalled nearly 873 million euros. On average, monthly revenue per subscriber was 24.35 euros in the case of double play bundles and 37.09 euros in the case of triple play bundles.
- Triple play bundles comprising FTS+FBB+STVS represented 71 percent of the total of such offers, followed by double play bundles with formats comprising FTS+STVS (18 percent), FTS+FBB (7 percent) and FBB+STVS (3 percent).

²⁰ Nothing in this chapter should not be taken as an intention to anticipate any decision on the existence of relevant markets with these combinations of services. The existence of a separate chapter on this subject constitutes no more than a means of displaying and organizing the information which has been compiled.

²¹ Until 2010, a bundle of services was considered as a commercial offer of a single operator which includes two or more services and which has single tariff and a single bill. From 2011 definition was amended to: a commercial offer of a single operator involving two or more services, sold as a single product and with a single bill.

- At the end of 2011, and according to information from Marktest's *Barómetro de Telecomunicações* (Telecommunications Barometer), 72 percent of those who subscribe to pay TV are customers of a multiple play offer and 64 percent of IAS subscribers have an offer of this type. The highest growth in the incidence of multiple play during 2011 was reported among households with the FTS.
- The number of subscribers to multiple play offers at the end of 2011 was equivalent to 55.3 percent of private households, 14 p.p. higher than in the previous year. When calculated in terms of conventional dwellings, penetration of such offers reaches 37.9 per 100 dwellings.

In comparison with other EU Member States, Portugal is reported slightly above average in terms of percentage of subscribers to bundled offers per 100 households. The penetration rate in Portugal is similar to that reported in the United Kingdom, with which it shares 7th place in this ranking. In terms of triple play bundles, Portugal has the third highest number of subscribers per 100 households (only France and Luxembourg have a higher proportion than Portugal).

- At the end of 2011, among the 13 undertakings with bundled offers, Grupo ZON was the main provider, with a market share of about 42 percent of subscribers followed by PT Comunicações with a share of 38.3 percent, and Cabovisão with 11.5 percent.
- As at the end of 2011, ZON led the traditional triple play segment (FTS+FBB+STVS), while PTC led double play, in particular due to the FBB+STVS combination.
- Two residential profiles were identified as regards the use of bundled offers²²:
 - Group 1 (without bundles of services and with FTS+STVS double play bundles) and consisting of households that tend to be smaller, with elderly members and of a lower social class. The individuals comprising these households belong to older age groups and have lower levels of education. They also tend to be part of the retired/unemployed and stay-at-home group. There is also greater expression reported in the North Interior region.

²² Cluster analysis according to K-means method.

- Group 2 (triple and double play with the IAS) is comprised of larger households with children and of a higher social class. On the other hand, the individuals of these households are more likely to be young or working-age adults, with higher levels of education and to be employed or students.
- When asked about the relevance of multiple play offers, Portuguese households tend to emphasise two advantages with equal intensity: having a single bill (although slightly below the European average) and lower cost compared to paying for each service separately (in line with the European average).
- As at the end of 2011, average monthly households expenditure on offers ranged from 52 euros in the case of triple play (FTS IAS STVS), and 26 euros in the case of double play (FTS IAS).
- The average level of satisfaction with the services of providers which offer multiple play is equal to (in case of the FTS+STVS bundle) or lower than (in other cases) the average level of satisfaction expressed by individuals who do not consume these offers. Levels of satisfaction among FTS customers with the service are lower when FTS is provided within a double play bundle with IAS. Satisfaction with the Internet access and subscription TV services tends to increase when they are included in a bundle.

3.2. The offer of services in bundles

The first offer of bundles of services appeared in Portuguese electronic communications markets during 2001. This was an offer supported over a cable television network (CATV). Subsequently, several operators launched offers of this type using the fixed switched telephone network (using local loop unbundling – LLU– or their own networks), alternative networks (fixed wireless access – FWA) and, more recently, over optical fibre networks.

Technological evolution and innovation, user preferences and the spin-off of PT Multimédia which took place in November 2007 helped drive the supply of bundled services.

3.2.1. Undertakings with offers of bundles of electronic communication services

At the end of 2011, 13 undertakings had offers of bundles of electronic communication services, as shown in the following list²³.

²³ AR Telecom – Acessos e Redes de Telecomunicações, S. A. discontinued the offer of bundles of services in the residential market from 30 November 2011. Since it did not provide customers with bundled services in the last quarter of 2001, it is not counted among these providers.

Table 27 – Undertakings with bundled offers – end of 2011

Company name
CABOVISÃO – Televisão por Cabo, S.A.
COLT Technology Services, Unipessoal, Lda.24
CYCLOP NET – Informática e Telecomunicações, Lda.
IPTV TELECOM – Telecomunicações, Lda.
ONITELECOM – Infocomunicações, S.A.
OPTIMUS – Comunicações, S.A. ²⁵
PT Comunicações, S.A.
STV – Sociedade de Telecomunicações do Vale do Sousa,
S.A.
UNITELDATA – Telecomunicações, S.A.
VODAFONE PORTUGAL – Comunicações Pessoais, S.A.
ZON TV Cabo Açoreana, S.A.
ZON TV Cabo Madeirense, S.A.
ZON TV Cabo Portugal, S.A.

Source: ICP-ANACOM

These undertakings include the five major electronic communications groups which have extensive networks and widespread offers for all segments (PT Comunicações, ZON, Optimus, Vodafone, Cabovisão – pioneer of this type of offer in Portugal). There are also small-scale operators working in specific geographic segments or which focus on providing services to the business segment.

²⁴ On 10.03.2010 COLT Telecom – Serviços de Telecomunicações, Unipessoal, Lda. changed its name to COLT Technology Services, Unipessoal, Lda.

²⁵ On 01.07.2010 SONAECOM – Serviços de Comunicações, S.A. changed its name to OPTIMUS – Comunicações, S.A.



Graphic 23 – Evolution in the number of providers with multiple play customers

Unit: number of providers

Source: ICP-ANACOM

The following table presents the evolution reported in the number of providers by type of bundle. Most multiple play providers offer combinations of traditional services (FTS, FBB and STVS). Currently other combinations are starting to appear which include mobile services (e.g. MBB). The evolution reported in the number of quadruple play providers (and also triple play) in 2011 results from the alteration (described above) in the concept of bundle.

	2007	2008	2009	2010	2011
Number of providers of bundled services	11	10	11	13	13
Double play bundles	9	9	10	10	13
FTS+FBB	5	6	7	7	8
FTS+STVS	4	3	6	7	9
FBB+STVS	5	4	4	4	7
STVS+MBB	0	0	0	0	1
Triple play bundles	8	6	8	10	9
FTS+FBB+STVS	8	6	8	10	9
FTS+MBB+STVS	0	0	0	0	1
Quadruple play bundles	0	1	1	2	0
FTS+MTS+FBB+MBB	0	1	1	1	0
FTS+FBB+MBB+STVS	0	0	0	1	0

Table 28 – Number of providers of bundled services by type of offer

Unit: number of providers

Source: ICP-ANACOM

3.2.2. Offer structure and provider switching

As at the end of 2011, Grupo ZON was the main provider of bundled services, with a share of subscribers reported at about 42 percent, followed by PT Comunicações with a share of 38.3 percent and Cabovisão with 11.5 percent.

ZON led the traditional triple play segment (FTS+FBB+STVS), while PTC led the double play segment, in particular due to the FBB+STVS combination.

· · · · · · · · · · · · · · · · · · ·								
			5) Doι	uble play			6) Tripl	e play
	4)	Multipleplay (total)	Double play (total)	FTS+ FBB	FTS+ STVS	FBB+ STVS	Triple play (total)	FTS + FBB + STVS
Grupo ZON/TV Cabo		42.0%	32.2%	-	42.6%	41.0%	46.1%	46.0%
ZON Portugal / TV Cabo		39.0%	30.0%	-	39.9%	36.6%	42.7%	42.6%
ZON Açores / Cabo TV Açoreana		1.2%	0.8%	-	1.2%	0.5%	1.3%	1.3%
ZON Madeira / Cabo TV Madeirense		1.9%	1.4%	-	1.5%	4.0%	2.1%	2.1%
PT Comunicações		38.3%	34.8%	27.6%	33.9%	56.7%	39.7%	39.8%
Cabovisão		11.5%	15.1%	3.7%	22.2%	1.8%	10.0%	10.0%
Vodafone		4.3%	9.5%	37.3%	0.4%	-	2.1%	2.2%
Optimus / Sonaecom		3.9%	8.3%	31.3%	0.9%	-	2.0%	2.0%
Other alternative providers		0.1%	0.1%	0.1%	0.0%	0.5%	0.1%	0.1%

Table 29 – Provider shares of subscribers to services supplied as bundles as at end of 2011

Unit: %

Source: ICP-ANACOM

Note 1: Only providers active as at the end of 2011 were considered, whereby AR Telecom - Acessos e Redes de Telecomunicações, S.A. (is not listed)

Note 2: There are providers that operate in specific market segments. The relative position of the operators in this table should not be interpreted as an indicator of the quality of services provided or of the performance of these operators in the segments they serve.

In terms of revenues²⁶, Grupo ZON was also the main provider of bundled services, with a share of about 48.9 percent (exceeding the share of subscribers mentioned above), followed by PT Comunicações with 32.6 percent and Cabovisão with 10.3 percent.

²⁶ Revenues considered as accumulated in 2011 (January to December).

Table 30 – S	Shares of rev	venue from	services	provided i	n bundles	(2011)
			001 11000	provided i	i banaico	(~~``')

			8) Double play				9) Triple play	
		Multipleplay (total)	Double play (total)	FTS+ FBB	FTS+ STVS	FBB+ STVS	Triple play (total)	FTS + FBB + STVS
10) Grupo ZON/TV Cabo		48.9	37.2		51.7	42.8	52.1	51.8
ZON Portugal / TV Cabo		45.4	34.3		47.6	39.0	48.4	48.1
ZON Açores / Cabo TV Açoreana		1.4	1.1		1.9	0.8	1.5	1.5
ZON Madeira / Cabo TV Madeirense		2.1	1.8		2.2	3.0	2.2	2.2
11) PT Comunicações		32.6	30.9	12.8	29.9	55.9	33.0	33.1
12) Cabovisão		10.3	8.8	0.2	16.6	1.2	10.7	10.7
13) Optimus/ Sonaecom		4.0	10.6	38.7	1.5	-	2.3	2.3
14) Vodafone		3.8	12.3	47.9	0.3	-	1.5	1.6
15) AR Telecom		0.4	-	-	-	-	0.4	0.5
16) Other alternative providers		0.0	0.1	0.3	0.0	0.2	0.0	0.0

Unit: %

Source: ICP-ANACOM

Additionally, Grupo ZON also had the largest shares in terms of revenues in double play bundles and triple play bundles (37.2 and 52.1 percent).

However, in the specific double play formats there were different leaders:

- Vodafone has its largest share of revenue in the format comprising FTS+FBB, where it was the leader (47.9 percent);
- ZON Group is the provider with highest revenues in the FTS+STVS format;
- PT Comunicações has the largest share of revenues in the STVS+FBB format, where it is leader (55.9 percent).

According to available information, the level of loyalty among subscribers to bundles in Portugal is higher than in the EU, which may indicate a low level of operator switching. This also stems from the fact that subscribers in Portugal do not switch because they are satisfied with the service (20 percent vs. 12 percent in the EU). At the beginning of 2011, about 9 percent of bundle subscribers were actively seeking to switch provider (versus 12 percent in the EU).

		EU27	Portugal
Inertial switchers consumers	Never thought about switching	60	61
	Have thought about switching, although satisfied with current service	12	20
	Have thought about switching, but it takes too much effort and time to do it	6	2
Hindered switchers consumers	Have thought about switching, but there are no other providers in the area with a better offer	5	9
	Have thought about switching, but you don't want to take the risk of a temporary loss of service during the switching process	4	1
	Thought about switching, but you don't want to take the risk of having to pay more than one provider during the switching process	3	2
	Thought about switching, but do not want to lose current e-mail address(es) / web page(s) hosted on Internet service provider	2	0
	Have thought about switching, but not clear what steps would be need to be taken to switch	1	1
Active switchers consumers	Already switched and bound by contract conditions to current provider	8	5
	Have thought about switching, but eventually provider offered you better conditions and decided not to switch	4	4
Other			1
Do not know / no answer			6

Unit: %

Source: EC, E-Communications Household Survey, July 2011 (information referring to February/March 2011)

Base: Households with bundled services

Note: Multiple choice question.

In Portugal, the barriers to provider switching are mostly associated with lack of better offer deals in the area of residence. In the EU27 this situation is not as expressive, and there is emphasis on wanting to avoid loss of access/services and avoid duplicate costs during the switching process.

3.2.3. The commercial offers of bundled services

This section gives details on bundled offers sold in Portugal as at the end of 2011. The analysis presented here does not reflect the relative weight of the offers actually chosen by consumers, but only their availability in the residential market. The selection of the offers was based on the perception of the consumer, considering all offers promoted as a bundle even if not covered by the definition used for statistical purposes. For this reason, there may be discrepancies between the information presented here and the values compiled from providers as presented in other sections of this chapter, in particular as regards quadruple and quintuple play.

As at the end of 2011, there were 127 commercial offers of multiple play services, of which 31 percent are double play (mostly FTS+STVS), 32 percent are triple play (mostly FTS+FBB+STVS) and 33 percent are quadruple play (mostly FTS+FBB+MBB+STVS).



Graphic 24 – Distribution of commercial offers of multiple play services, by type



Source: ICP-ANACOM

As at the end of 2011, there were 47 bundled offers using cable modem, representing 37 percent of total multiple play offers. There were also 47 optical fibre offers (37 percent of total).

The quintuple play format is mostly supported by optical fibre.



Graphic 25 – Distribution of bundled offers by fixed technology



Source: ICP-ANACOM

Note: Hybrid fibre-coaxial (HFC) is included in cable modem.

The multiple play offers in analysis which include the FBB offer download speeds of at least 4 Mbps and a maximum of 360 Mbps. The main speeds are 12 Mbps (10 offers), 24 Mbps (16 offers) and 30 Mbps (12 offers).



Graphic 26 – Distribution of multiple play offers In terms of download speed in Mbps

Source: ICP-ANACOM

Download speeds up to 8 Mbps have greater expression in the double play format. Triple play bundles tend to be quite diverse in terms of download speeds although offers of 60 and 100 Mbps are highlighted. The download speed of 24 Mbps is most offered in quadruple play.

Units: %, Mbps







Source: ICP-ANACOM

Multiple play offers which include the STVS offer at least four channels and up to 138 channels. There is a greater concentration of multiple play offers with STVS with a larger number of channels available, especially those with 90 channels or more, which account for nearly 60 percent of these offers.



Graphic 28 – Distribution of multiple play offers, in terms of the number of channels available

Unit: %

Source: ICP-ANACOM

As the number of services comprising the bundle with STVS increases, the number of available channels also tends to increase. Almost 70 percent of quadruple play offers and all quintuple play offers with STVS have 90 channels or more.



Graphic 29 – Distribution of multiple play offers, in terms of the number of available channels, by type



Source: ICP-ANACOM

Offers with higher download speeds also tend to offer the largest quantity of TV channels. FBB offers with download speeds over 50 Mbps are combined with TV offers with over 100 channels, all supported over optical fibre or HFC.





Units: Mbps, channels

Source: ICP-ANACOM

The majority of multiple play offers comprising MBB offer 100 MB/month free.

Almost all residential multiple play offers with FTS include unlimited calls to the national fixed network during the evening and/or weekend. In the triple play format there is a higher percentage of offers with 24 hour unlimited calls to the national fixed network.

Graphic 31 – Percentage of multiple play offers with FTS offering unlimited calls to national fixed network



Unit: %

Source: ICP-ANACOM

3.2.4. Pricing

The average monthly charge of multiple play offers varies between 9.99 euros and 139.99 euros, in the first year of subscription²⁷.

The pricing of multiple play offers varies in line with the number of services included in the bundle and according to their specific characteristics: such as IAS download and upload speeds, number of available TV channels and the number of included voice minutes:

²⁷ In this section, the compilation of tariffs is based on the perception of the consumer, whereby all services which are promoted or sold as bundles are considered, regardless of the definition used for statistical purposes.

The calculated prices are prices of the service excluding equipment or activation/installation fees or additional or premium services.

- the average price is higher when more services are included in the bundle, with the largest increase in price corresponding to the difference between double and triple play bundles (an additional 46 percent on average);
- the monthly average price of a double play bundle is 30.55 euros (average speed of 70 Mbps and an average of 70 channels). Among double play bundles the FTS+STVS format stands out as having the lowest price (26.79 euros), including an average of 71 TV channels. Meanwhile, double play offers comprising FTS+FBB tend to have a higher average price (47.80 euros), providing download speeds of 50 Mbps or more;
- triple play offers have an average price of 44.50 euros (download speeds with average of 41 Mbps and average of 87 TV channels);
- among triple play offers the FTS+FBB+MBB stands out as having a greater price range in the market prices, where the lowest offer has an average price of 19.49 euros and the highest 79.14 euros;
- the multiple play format with more offers (FTS+FBB+MBB+STVS) has an average price of 51.43 euros, and is the offer with the greatest range of prices.²⁸. The lowest offer is priced at 29.22 euros and the highest at 139.99 euros. On average these offers have download speeds of 50 Mbps and 96 TV channels.

²⁸ Measured by the standard deviation (19.43).
	Average monthly price		17)	17) Download (Mbps): FBB			No. channels: STVS			rs ted :FN	
	8) Minimum	9) Average	0) Maximu m	(1) Minimum	2) Average	ייווואסזוו עט ש	4) Minimum	5) Average	o) maximu m	+ weekend	8) 24 hours
Total	9.99	44.05	N 139.99	4	N 49	360	4	88	N 138	96	N 71
Double play bundles	9.99	30.55	68.41	4	70	360	4	70	138	93	75
FTS+FBB	30.99	47.80	68.41	50	178	360	_	_	_	100	100
FTS+STVS	9.99	26.79	36.99	_	_		4	71	138	92	71
FBB+STVS	25.00	35.69	42.59	8	20	30	45	76	109		
STVS+MBB	23.84	35.21	49.78				25	52	70		
FBB+MBB	19.49	27.24	35.49	4	12	24					
Triple play bundles	19.49	44.50	79.74	4	41	200	4	87	135	92	87
FTS+FBB+STVS	24.99	46.71	69.99	6	29	120	4	81	135	86	86
FTS+MBB+STVS	30.50	42.09	52.19				25	92	125	100	100
STVS+FBB+MBB	42.59	47.90	57.99	24	51	100	80	110	125		
FTS+FBB+MBB	19.49	40.34	79.74	4	67	200				100	78
Quadruple play bundles	29.22	53.65	139.99	6	50	360	15	97	130	100	61
MTS+FBB+MBB+STVS	62.59	62.59	62.59	30	30	30	125	125	125		
FTS+FBB+MBB+STVS	29.22	53.43	139.99	6	50	360	15	96	130	100	61
Quintuple play bundles	57.99	64.99	72.99	24	39	100	125	125	125	100	0
FTS+MTS+FBB+MBB+STV S	57.99	64.99	72.99	24	39	100	125	125	125	100	0

Table 32 – Prices and main features of multiple play bundles by type

Units: euros, Mbps. channels, %

Source: ICP-ANACOM

The support technology of multiple play services also influences pricing. The average price of double play offers is highest when supported by optical fibre (33.48 euros on average); however they also enable higher average download speeds.

In terms of triple and quadruple play, the highest priced offers are those based on cable modem (50.06 and 57.94 euros on average, respectively).

	Average mo	onthly price (€)	Download (Mbps): FBB	No. channels: STVS	% FTS offers with unlimited calls to RFN
	Minimum	Average	Maximum	Average	Average	(24 hours)
29) Total	9.99	44.05	139.99	49	88	71
30) DTH	15.00	30.23	49.78		50	50
double play	15.00	27.58	49.78		52	33
triple play	32.94	40.82	48.69		43	100
Optical fibre	17.50	44.80	105.41	68	87	61
double play	17.50	33.48	68.41	122	60	80
triple play	25.00	41.58	79.74	61	84	86
quadruple play	30.99	53.74	105.41	56	98	36
quintuple play	57.99	66.32	72.99	49	125	0
Cable modem	9.99	47.36	139.99	47	92	96
double play	9.99	29.98	42.59	30	83	91
triple play	24.99	50.06	69.99	34	90	94
quadruple play	29.22	57.94	139.99	62	101	100
xDSL	19,49	41,76	67,99	18	98	39
double play	19,49	29,19	36,99	12	125	100
triple play	19,49	37,75	56,70	20	107	60
quadruple play	37,41	46,19	55,49	19	87	30
quintuple play	57,99	62,99	67,99	24	125	0

Table 33 – Pricing of multiple play bundles by technology and bundle type

Units: euros, Mbps, channels, %

Source: ICP-ANACOM

Marktest's *Barómetro de Telecomunicações – Rede fixa* (Telecommunications Barometer – Fixed Network)²⁹ provides information about the evolution in average monthly expenditure by households on multiple play offers.

²⁹ The *Barómetro de Telecomunicações* (Telecommunications Barometer) is a regular study of Marktest for the telecommunications sector. The universe of the *Barómetro de Telecomunicações – Rede Fixa* (Telecommunications Barometer – Fixed network) comprises dwellings in Mainland Portugal or in the Autonomous Regions of Madeira and the Azores. A sample is compiled on a monthly basis which is proportional to and representative of the study's universe.

As at the end of 2011, average monthly household expenditure on offers ranged from 52 euros in the case of triple play (FTS IAS STVS), and 26 euros in the case of double play (FTS IAS).





Unit: euros

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 2Q2009 to 4Q2011

Base: Total homes with multiple play offers (excluding non-responses)

Note: The margins of error with respect to the averages are below 4.9 percent.

3.3. Profile of use and usage of services in bundles

Some of the characteristics of the user and of usage of bundled services are detailed below, according to the various double and triple play formats.

This analysis was based on the perception of the respondents to the survey on bundles of services, and may not correspond to the definition used for statistical purposes. For this reason, there may be discrepancies between the information presented here and the values compiled from providers as presented in other sections of this chapter, in particular as regards quadruple and quintuple play.

3.3.1. A characterization of the user of bundled services

According to information from the 2nd half of 2011, provided by Marktest's *Barómetro de Telecomunicações* (Telecommunications Barometer) and making use of cluster analysis³⁰, it was possible to identify two groups of residential users of multiple play offers. On the one hand, there is a group of users who do not use the multiple play service or which has the FTS together with STVS. On the other hand, there is a second group comprising those with triple and double play offers with IAS (FTS IAS STVS; STVS IAS and FTS IAS).

	GROUP 1			GROUP 2						
	Non-user of multip play	le play or user FTS+STVS	r of double	User triple play or double play with the IA						
		% group	% overall		% group	% overall				
	None	73.4	53.1	FTS IAS STVS	38.8	30.8				
Bundled services	FTS+STVS	14.2	6.7	STVS IAS	8.3	6.5				
			0.1	FTS IAS	3.4	2.8				
Marktest region	North Interior	26.0	20.6							
Size of household	Up to 2 individuals	84.1	45.7	3 or more individuals	69.1	54.3				
Presence of children/elderly	Elderly	68.7	36.0	Children	48.1	25.0				
Age group	55 years or over	82.3	29.3	Less than 55 years	91.1	70.7				
Level of education	Up to 1st cycle basic ed.	74.0	24.4	From 2nd cycle basic ed.	83.8	66.1				
Employment status	Retired / unemployed	77.2	29.0	Employed	71.7	56.0				
	Stay-at-home	7.6	4.3	Student	14.8	10.7				
Social class	D	65.5	22.9	A/B/C1/C2	93.5	77.1				

Table 34 – Profile of users of multiple play services

Unit: %

Source: This analysis is provided by ICP-ANACOM based on Marktest microdata - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 2nd half 2011

³⁰ Cluster analysis makes it possible to identify groups sharing homogeneous behaviour, whereas use has been made of the non-hierarchical k-means method, based on the Euclidean distance and centroid criterion for the aggregation of responses. The methodology of this type of analysis is described in detail in Annex 2 of the State of Communications Report, 2009.

Base: Total dwellings with voice electronic communication services (excluding non-responses)

Note 1: Cluster analysis using K-means method with two classes. The two identified groups have a distance of 1,795.

Note 2: Most characterizing variables used in this analysis are not part of the stratification of the sample groups of dwellings (Marktest district and region), whereby this information is purely indicative of the profile of the multiple play user.

These groups have the following socio-demographic profiles:

- Group 1 (without bundled services or double play user FTS+STVS) and consisting of households that tend to be smaller, with elderly members and of a lower social class. The individuals comprising these households belong to older age groups and have lower levels of education. They also tend to part of the retired/unemployed and stay-at-home group. There is also greater expression reported in the North Interior region.
- Group 2 (triple or double play user with IAS) is composed of larger households with children and of a higher social class. On the other hand, the individuals of these households are more likely to be young or working-age adults, with higher levels of education and to be employed or students.

The regional focus of this analysis not only reflects the choices of consumers, but also the set of alternatives available in each region. In particular, in the case of multiple play services, there are parts of the territory where, due to the technology used (for example, including satellite TV) or the lesser presence of competitors, the offer of bundles are limited.

3.3.2. The use of bundled offers

According to data from Marktest³¹, as at the end of 2011, the use of bundled services covered 48 percent of Portuguese households with the telephone service³², with a

³¹ Barómetro de Telecomunicações – Rede Fixa (Telecommunications Barometer – Fixed Network) whose universe consists of homes in Mainland Portugal and the Autonomous Regions of Madeira and the Azores. A sample is compiled on a monthly basis which is proportional to and representative of the study's universe.

³² According to the Consumo dos Serviços de Comunicações Eletrónicas (Consumer Survey of Electronic Communications Services) conducted by ICP-ANACOM in December 2009, it is estimated that about 96.1 percent of homes had a telephone service (the household had access to the FTS or at least of its members had a mobile telephone).

significant increase reported over the previous year (a rise of 8.6 percentage points compared to the end of 2010).



Graphic 33 – Evolution of take-up of multiple play offers

Unit: %

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q2009 to 4Q2011

Base: Total homes with telephone service (excluding non-responses)

Note 1: The upward pointing arrow signals a statistically significant increase between t-1 and t and a downward arrow signals a statistically significant decrease between these two instances. **Note 2:** Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate.

Increased multiple play take up largely results from take up of new triple play bundles (FTS+IAS+STVS). At the end of 2011, triple play was available in 67.4 percent of households which opted for multiple play (increasing 8.7 percentage points from the previous year).

The FTS+STVS bundle, the only bundle without IAS, has seen the sharpest loss of relative importance.



Graphic 34 - Distribution of types of multiple play offers

Unit: %

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q2009 to 4Q2011

Base: Total dwellings with multiple play offers

Note 1: The upward pointing arrow signals a statistically significant increase between the instance of t-1 and t and a downward arrow signals a statistically significant decrease between these two instances. **Note 2:** Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate.

As at the end of 2011, 72 percent of pay-TV subscribers subscribed to a multiple play offer and among those with the IAS, 64 percent subscribed to an offer of this type. The highest growth in the incidence of multiple play offers during 2011 was reported among households with the fixed telephone service (FTS) (increasing from 52 to 64 percent).

The propensity to have a triple play offer is relatively similar between the customers of each of the services. Nearly one in two customers of each service has a triple play offer.





Unit: %

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q2011

Base: Total households that have the respective electronic communications service

Note 1: The upward pointing arrow signals a statistically significant increase between the instance t-1 and t and a downward arrow signals a statistically significant decrease between these two instances.

Note 2: Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate.

According to Eurostat, in February/March 2011, take up of multiple play offers in Portugal exceeded the EU27 average by about 1 percentage point (at the end of 2009, Portugal was 4 percentage points below the EU27 average).



Graphic 36 - Rate of take up of multiple play offers in EU27

Unit: %

Source: EC, E-Communications Household Survey, July 2011 (information referring to February/March 2011)

Base: Total homes

At the beginning of 2011, bundles of services in the EU27 were dominated by IAS: nine out of ten packets included the IAS. In Portugal, 93 percent of bundles include the STVS – in the EU this service is present in 48 percent of the bundles. The presence of the FTS in bundles of services in Portugal is similar to the EU average.





Unit: %

Source: EC, E-Communications Household Survey, July 2011 (information referring to February/March 2011)
Base: Total dwellings with multiple play offers

Note: Multiple choice question.

3.3.3. The motivations and satisfaction of residential consumer of multiple play offers

When asked about the key characteristics of multiple play offers, Portuguese households tend to emphasise two advantages with equal intensity: having a single bill (although slightly below the European average) and lower cost compared to paying for each service separately (in line with the European average).

The perception that services provided as a bundle may have a lower total cost greatly increased among Portuguese households (rising from 20 percent at the end of 2009 to 34 percent in March 2011).

Furthermore, 16 percent of Portuguese households responded that provision of services in a bundle leads to the provision of services that are not necessarily required. This view is similar to the European average.



Graphic 38 – Opinion on bundled services, EU27

Unit: %

Source: EC, E-Communications Household Survey, July 2011 (information referring to February/March 2011)

Base: Total homes

Note: Multiple choice question.

Customers without bundled services, and those with FTS+STVS in a bundle, are more satisfied, on average, with most of their services (8.11). The lowest level of satisfaction is reported with respect to the FTS IAS bundle (7.53).

FTS customers exhibit the lowest levels of satisfaction with this service when it is included in a bundle with IAS.

Satisfaction with the Internet access and subscription TV services tends to increase when they are included in a bundle.

In the specific case of Internet access, households with this service in a triple play bundle are highlighted as the most satisfied with the IAS (7.96).

	FTS	IAS	STVS	MTS	Total
Service not in bundle	8.12 <mark>1</mark>	7.51	7.88	8.23	8.11
FTS+STVS+IAS	8.02	7.96	7.98	8.17	7.99
STVS+IAS	7.91	7.69	7.93	8.23	7.83
FTS+STVS	8.12	7.05	8.09	8.38	8.11
FTS+IAS	7.55	7.50	7.42	8.03	7.53
Other combinations	#	#	#	#	#
Total	8.04	7.75	7.96	8.22	

Table 35 – Average satisfaction levels with the service provided in multiple play

Unit: scale 1 (totally dissatisfied) to 10 (totally satisfied)

Source: This analysis is provided by ICP-ANACOM based on Marktest microdata - *Barómetro de Telecomunicações* (Telecommunications Barometer) Study, 2nd half 2011

Base: Total households according to electronic communications services provided to them in a bundle (excluding non-responses)

Note 1: The row total refers to average satisfaction with the respective service irrespective of whether it is part of bundle. The column total refers to the estimate made using the average levels of satisfaction in each of the services included in the bundle.

Note 2: The upward pointing arrow signals a statistically significant increase between the 2nd half 2010 and 2nd half 2011, and a downward arrow signals a statistically significant decrease between the two periods. This analysis is not carried out for groups (cluster analysis) since they are not completely equal in the two periods.

Note 3: The shaded proportions indicate those that are significantly different (columns) according to the test of equality between averages. Higher proportions are highlighted in light shading and lower proportions in dark shading.

Note 4: The margins of error of the measurements on a scale of 1 to 10 are all equal to or less than 0.29 absolute points, except for the "Other combinations" category, for which estimates are considered unreliable (#).

During 2011, the most significant improvements in satisfaction occurred with respect to the FTS, particularly when this service is included in a triple play bundle and where it is not part of any bundle.

3.4. Bundled offers – number of subscribers and revenues

According to information compiled from providers of electronic communications in 2011, the number of subscribers to bundled offers reached almost 2.2 million subscribers.

	2010	2011	Var. 2010/2011	Var. annual average 2007/2011	Var. accumulated 2007/2011
Number of subscribers	1 616	2 179	34.8%	40.1%	285.7%
Double play bundles	459	634	38.4%	13.2%	64.5%
FTS+FBB	199	157	-21.0%	-11.0%	-37.2%
FTS+STVS	195	399	104.3%	40.5%	289.3%
FBB+STVS	64	74	16.0%	22.9%	128.3%
STVS+MBB	0	4	-	-	-
Triple play bundles	1 124	1 545	37.4%	71.3%	761.7%
FTS+FBB+STVS	1 124	1 542	37.1%	71.2%	759.8%
FTS+MBB+STVS	0	3	-	-	-
Quadruple play bundles	33	0	-	-	-

Table 36 – Number of subscribers to bundled services, by type

Units: thousands of subscribers, %

Source: ICP-ANACOM

The multiple play format with higher growth in 2011 was the FTS+STVS bundle, which doubled total subscribers, rising to represent 18 percent of all bundled offers (12 percent in 2010); this development may stem from the introduction of digital television terrestrial (DTT), whereas there is no evidence enabling a definitive conclusion on this issue.

Triple play offers: FTS+FBB+STVS represented 71 percent of the total of such offers, followed by double play formats with FTS+STVS (18 percent), FTS+FBB (7 percent) and FBB+STVS (3 percent).



Graphic 39 – Distribution of the number of subscribers of bundled services, by type



Revenues from services in bundles totalled nearly 873 million euros in 2011. Triple play offers were those that contributed most to total revenues, with almost 688 million euros (representing 78.8 percent of the total).

	201	1
	Revenues	%
Revenues from bundles of services	872,934	100
Double play bundles	185,384	21.2
FTS+FBB	46,937	5.4
FTS+STVS	94,835	10.9
FBB+STVS	41,171	4.7
STVS+MBB	2,441	0.3
triple play bundles	687,550	78.8
FTS+FBB+STVS	684,572	78.4
FTS+MBB+STVS	2,978	0.3

Units: thousands of euros, %

Source: ICP-ANACOM

Among double play, the FTS+STVS format produced the highest revenues (almost 95 million euros), while also generating the lowest average monthly revenue per subscriber (19.81 euros).

On average, monthly revenue per subscriber was 24.35 euros in double play bundles and 37.09 euros in triple play bundles.

	2011
31) Average monthly revenues per subscriber to bundles of services	33.38
double play bundles	24.35
FTS+FBB	24.84
FTS+STVS	19.81
FBB+STVS	46.30
STVS+MBB	52.15
triple play bundles	37.09
FTS+FBB+STVS	37.01
FTS+MBB+STVS	74.71

Table 38 – Average monthly revenue per subscriber to bundles of services, by type

Unit: euros Source: ICP-ANACOM

3.5. Penetration of bundled offers

In terms of penetration, the number of subscribers to multiple play offers at the end of 2011 corresponds to 55.3 percent of private households, increasing 14 p.p. over the previous year. When calculated in terms of conventional dwellings, penetration of such offers reaches 37.9 per 100 dwellings. In 2010, the penetration rate was 28.1 per 100 dwellings³³.

 Table 39 - Penetration rate of subscribers to bundled offers per 100 households.

2010 2011 Var. (p	Var. annual	Var.	
2010 2011 2010/2	average (p.p.)	accumulated	

³³ It should be noted, however, that the definition of the bundle of services used in 2010 under-reports the bundled offers in Portugal by excluding those offers which, although promoted, sold and billed together, do not have an integrated tariff - i.e. it is possible to identify the individual prices of each service. Data from 2011 considers all bundled offers in Portugal.

				2007/2011	(p.p.) 2007/2011
Total	41.0	55.3	14.3	10.2	40.6
double play offers	11.6	16.1	4.5	1.5	6.1
FTS+FBB	5.1	4.0	-1.1	-0.6	-2.5
FTS+STVS	5.0	10.1	5.2	1.9	7.5
FBB+STVS	1.6	1.9	0.3	0.3	1.0
STVS+MBB	0.0	0.1	0.1	0.0	0.1
triple play bundles	28.5	39.2	10.7	8.6	34.5
FTS+FBB+STVS	28.5	39.1	10.6	8.6	34.4
FTS+MBB+STVS	0.0	0.1	0.1	0.0	0.1
quadruple play bundles	0.8	0.0	-0.8	0.0	0.0
FBB+FTS+MBB+MTS	0.8	0.0	-0.8	0.0	0.0
FBB+FTS+STVS+MBB	0.1	0.0	-0.1	0.0	0.0

Units: no. of offers per 100 private households per p.p.

Source: ICP-ANACOM

The number of subscribers to triple play bundles corresponds to 39 per 100 private households and subscribers to double play offers corresponds to 16 per 100 private households.

In comparison with other EU Member States, and given the information relating to July 2011, Portugal is reported slightly above average in terms of percentage of subscribers to bundled offers per 100 households. The penetration rate in Portugal is similar to that reported in the United Kingdom, with which it shares 7th place in this ranking.



Graphic 40 – Penetration of bundled offers per 100 households³⁴ in the EU

Unit: bundled offers per 100 households

Source: EC, Digital Agenda Scoreboard 2012 (Provisional data with reference to July 2011), and ICP-ANACOM

Note: Information on Finland is not available.

As regards triple play, Portugal has the third highest number of subscribers per 100 households (only France and Luxembourg have a higher proportion than Portugal).

³⁴ Equivalent to the concept of private households previously presented in the specific case of Portugal.



Graphic 41 – Penetration of bundled offers per 100 households³⁵ in the EU, by type

Unit: bundled offers per 100 households

³⁵ Equivalent to the concept of private households previously presented in the specific case of Portugal.

INTERNET ACCESS SERVICE (IAS)

4. Internet access service (IAS)

This chapter details the situation as regards IAS as at the end of 2011.

A summary is given below of the main aspects of the evolution of the service during 2011.

4.1. Key aspects of the evolution in 2011

• The FBB penetration rate in Portugal grew in 2011 by 1.1 p.p. Internet penetration in Portugal is ranked 21st in the ranking of EU27 countries.

At the end of 2011, there were 2.2 million accesses to broadband Internet at a fixed location, 5.3 percent more than in the previous year. The reported growth was below the lower limit of the forecast range resulting from the historical trend (overall and with regard to each of the access technologies).

The increasing number of broadband accesses stems in the most part from the evolution in Internet access offers supported over FTTH/B (81 percent) – which already represent 10 percent of the total – and also from the growth in offers using modem – particularly offers with EuroDOCSIS 3.0. A decline was reported in the number of accesses using ADSL, although ADSL remains the most important technology in terms of number of accesses (49 percent).

The penetration rate of optical fibre (FTTH/B) accesses in Portugal was reported at 1.6 per 100 inhabitants in July 2011, more than double the European average (0.6 percent).

- The number of active users of the mobile broadband IAS grew by about 14 percent during 2011, although the number of active users with mobile broadband Internet access using cards/ modem fell. In the case of MBB and according to the EC, Portugal was 13th in the ranking of EU Member States, 2 percentage points above the European average. In the specific case of cards, Portugal was 6th in the ranking.
- There are five undertakings with significant shares present in the (fixed) broadband Internet access market: Grupo PT, Grupo ZON/TV Cabo, Optimus, Cabovisão and Vodafone.

In 2011, Grupo PT increased its customer share by 2.5 percentage points over the previous year, reaching a market share of 49.4 percent. The Group therefore again exceeded the European average of incumbent operators, which maintained a declining trend (43 percent in July 2011).

In the last three years a recovery has been seen in Grupo PT's share of customers (5.3 percentage points), in particular due to multiple play and FTTH offers from PT Comunicações.

• About 70 percent of FBB offers were included in triple play offers.

In terms of the access speeds chosen by users, in 2011, the majority of FBB customers (71 percent) used accesses which exceeded 10 Mbps. About 33 percent had accesses above 20 Mbps and 27 percent used accesses with speeds between 2 Mbps and 10 Mbps.

Offers appeared on the market with speeds exceeding 300 Mbps. Offers with higher transmission speeds are supported over optical fibre (FTTH/B) or coaxial cable using DOCSIS 3.0.

Meanwhile, as at the end of 2011, around 88 percent of broadband offers did not include traffic limits.

According to available information, stand-alone FTS offers and FTS+FBB bundles feature minimum prices below the European average, while the minimum prices of the FBB+TV bundle and triple play have prices which are above average, in almost all cases.

- The number of MBB offers also increased, in particular post-paid offers, while a proliferation was reported in quadruple play bundles, with the offer of MBB traffic included in triple play bundles.
- Consumer perceptions as to the quality of fixed Internet services is generally positive, although about 19 percent of respondents rated it with values below seven (on a scale of 1 to 10 where 1 means "very dissatisfied" and 10 means "very satisfied").

The level of overall satisfaction with mobile Internet access providers is likewise high, although not as high as FBB. The level of satisfaction reported with regard to transmission speed is slightly lower than the level of overall satisfaction.

4.2. The offer of the Internet access service (IAS)

The IAS can be delivered using a range of different platforms and technologies and is offered with various transmission capacities that result in the provision of narrowband or broadband services.

In the case of fixed Internet access, the service is provided by undertakings with general authorization. In the case of mobile broadband Internet access, operators are licensed to provide 3G and (since March 2012) 4G mobile services or, in the case of mobile virtual network operators (MVNO) which use third-party networks³⁶, with general authorization.

The services and developments reported during 2011 are detailed below. Details are also given of the undertakings which offer these services in Portugal.

4.2.1. Internet access platforms and technologies

The main Internet access technologies and platforms currently available are:

Access through digital subscriber line (DSL) technology or the family of DSL technologies (xDSL) – this technology uses modulation systems to increase data transmission capacity over copper wire, using frequency bands not used by the voice signal and enabling provision of broadband services. The fact that the voice and data are carried on different frequencies means that these technologies allow two types of communications simultaneously (with the Internet connection always on). This technology is available in pre-defined areas, where connections are available with the necessary physical requirements³⁷.

³⁶ See Regulatory framework governing the MVNO activity, available at <u>http://www.anacom.pt/template31.jsp?categoryId=234406</u>.

³⁷ The entire national territory covered by the fixed switched telephone network potentially enables this kind of access, except where technical impossibilities do not allow.

There are different variants of xDSL, the most publicized of which is ADSL (Asymmetric DSL)³⁸. Available ADSL offers have data speeds ranging between 512 Kbps to 24 Mbps. Basic ADSL enables speeds up to 8Mbps and ADSL2 up to 12 Mbps. Launched in Portugal in 2005, ADSL2 doubles the download speeds available with ADSL2 to 24 Mbps. The maximum speed allowed by this technology varies depending on the distance between the Digital subscriber line access multiplexer (DSLAM) and the customer's premises.

In addition to ADSL, there are other variants, for example, very high-bit-rate digital subscriber line (VDSL)^{39.}

 Access via coaxial cable - coaxial cable is the primary type of cable used by the cable television distribution industry. Its constitution enables provision of broadband services, and provides lower susceptibility to electrical and radio interference Internet access through cable television distribution networks, using a modem enables high-speed access. Connection speeds are similar to those of an ADSL access, both downstream speeds and upstream. So that the Internet service can be provided over a network of this type, the network must support bidirectionality, i.e., it must be able to both receive and send data (the majority of cabled dwellings have this capability).

With the installation of the standard EuroDOCSIS 3.0 standard on cable television systems where there is already bi-directionality, it is possible for service providers to offer high-speed data transmission services⁴⁰, whereas, in 2011, offers were launched with theoretical download speeds of 360 Mbps.

Access through third generation mobile services - 3G mobile services have made it
possible to accomplish convergence between fixed and mobile communications
and between electronic communications and multimedia, with the capacity of

³⁸Digital technology that enhances the capacity of analogue or ISDN lines telephone lines, allowing access to the Internet at much higher speeds. Information is transmitted asymmetrically, i.e., the speed of downloading information (downstream) is higher than the upload speed (upstream), which is currently around 1.4 Mbps; bandwidth is managed in an intelligent way. The technology makes it possible for the Internet and traditional telephone line (for voice service, fax) to be used simultaneously. An ADSL circuit provides three information channels: one downstream at high-speed (1.5 to 8 Mbps), a medium high-speed duplex upstream (16 to 640 Kbps) and a channel for the telephone service.

 $^{^{39}}$ A format that allows speeds of up to 100 Mbps (VDSL2) in sections under 300 m.

⁴⁰ EuroDOCSIS 3.0 enables downstream speeds of up to 400 Mbps and upstream speeds of 100 Mbps. https://supportforums.cisco.com/docs/DOC-1239

mobile networks approaching the capacity of fixed networks and with mobile users able to access broadband multimedia services. Among 3G mobile telecommunications systems, the universal mobile telecommunications system (UMTS) is highlighted as the European standard in the global family of standards of international mobile telecommunications systems (IMQ2000). UMTS is a technology that uses WCDMA transmission⁴¹ based on code division multiple access.

The evolution of these standards led to the development of HSDPA and HSUPA standards, which through updates to the software used on UMTS networks, allow theoretical maximum download of 14 Mbps and upload speeds.

In 2009, commercial offers appeared with services based on HSPA Quadruple Amplitude Modulation (64QAM) technology, tripling the maximum download of the MBB service from 7.2 Mbps to 21.6 Mbps. HSPA results from the development of 3G/HSPA technology and uses the more advanced 64QAM modulation technique.

In 2010, offers were made available based on HSPA Dual Carrier technology with download of up to 43.2 Mbps and upload speeds of up to 11.4 Mbps. This technology is also an evolution of 3G/HSPA technology that uses the aggregation of two adjacent radio channels to significantly increased access speed.

Development of the next generation mobile requires the development of long term evolution (LTE) technology, the 4th generation (4G) of mobile technology. Over the course of 2010, all providers began testing and demonstrations of this technology, which allows MBB speeds of at least 100 to 150 Mbps. Currently, LTE can theoretically offer downlink speeds of up to 200 Mbps and 90 Mbps uplink⁴², which contrasts with the downlink of 42 Mbps possible with HSPA technology⁴³. One of the features that distinguishes LTE, besides its capacity to provide high-speed data transmission, is its more efficient utilization of radio spectrum and reduced latency.

⁴¹ Broadband access system where several users share the same frequency band using different codes.

⁴² <u>http://www.3gpp.org/LTE</u>, <u>http://www.3gpp.org/LTE-Advanced</u>

⁴³ <u>http://www.3gpp.org/HSPA</u>

By determination of 9 March 2012, ICP-ANACOM approved the issue of unified titles of rights of use of frequencies for terrestrial electronic communications services to Optimus, TMN and Vodafone Portugal, following the multi-band auction, allowing these operators to offer 4G services. The first 4G offers emerged in January (pre-registration). Since 12 March 2012, several commercial 4G offers have been launched.

• Access via optical fibre (FTTx) - network architectures that replace, in whole or in part, the traditional copper access network or coaxial cable with optical fibre are known as fibre to the x (FTTx, depending on the point on the access network to where the fibre is extended, so it may be fibre to the node (FTTN) fibre to the cabinet (FTTC) fibre to the building (FTTB) and fibre to the home (FTTH). These solutions are then complemented by traditional supports, such as copper wire or coaxial cable and with the standards as already mentioned, for example, DOCSIS or VDSL2, which are technically rendered FTTx networks but not FTTH. In the most common case, where the fibre is shared by several users, optical fibre networks use two types of optical distribution networks: active optical networks (AON), allowing each signal to be sent directly to a specific user, or passive optical networks (PON), which broadcast the signal and use encryption to ensure that a specific signal is received only by the user to whom it is intended.

This form of access, together with EuroDOCSIS 3.0, constitutes the main support of NGN allowing provision of high-speed data transmission (typically 100 Mbps, sometimes exceeding 1 Gbps⁴⁴).

 Access via satellite – the latest satellite technologies enable the provision of Internet access directly to consumers through small aerials and with prices comparable to those offered by other technology solutions. This type of access requires no additional infrastructure, cables or links.

Currently, offers of Internet access through satellites include offers from Ka-sat (in Europe) or Viasat (in the USA.) which enable connections to 1 million users at speeds of 10 Mbps. In November 2010 the Hylas 1 satellite was launched, which will bring high-speed Internet to various parts of the country, including areas not

⁴⁴ <u>http://www.oecd.org/dataoecd/49/8/40390735.pdf</u>

covered by fixed services). Moreover, Optimus is, since August 2011 eligible to provide the Internet service via satellite.

- Access using switched connections (dial-up access) the first narrowband Internet access offers were based on switched connections (dial-up access); these are accessible to any subscriber with a fixed telephone line and a modem who becomes a customer of one or more IAS provider(s). The bundles associated with this means of access have maximum transmission capacity of 64 Kbps (narrowband). Integrated services digital network (ISDN) access enables higher speeds as well as the integration of voice and data in a single access. ISDN accesses can be basic⁴⁵ or primary⁴⁶. This form of access, while initially the most common, currently represents a small and decreasing proportion of Internet access.
- Other forms of access there are other technologies that may be used for Internet access, including: access via dedicated links, fixed wireless access (FWA) and code division multiple access (CDMA), access over power lines (PLC) and access using local wireless networks⁴⁷.

4.2.2. Geographic availability of this service

In 2011, the IAS was available throughout almost the entire national territory. In particular, dial-up access was available throughout the extent of the public switched telephone network.

⁴⁵ (Basic Rate Access 2B+D) - Customer access to ISDN, using a copper pair and providing two 64 kbps channels (channels B1 and B2) for voice and data transfer and one 16 kbps D channel for signalling, transfer packet data and telemetry. The overall speed is 192 kbps.

⁴⁶ Primary Access - 30B+D access to ISDN, with a total speed of 2 Mbps. 30 voice/data channels B and the signalling channel D carry 64 kbps.

⁴⁷According to press reports, at the end of 2010, Câmara Municipal de Águeda (Agueda Municipal Council) implemented a WiMax network infrastructure in the town, enabling access to the Internet at public WiFi hotspots. Likewise, Câmara Municipal de Foz Côa (Municipal Council of Foz Côa) deployed a WiFi network (<u>http://www.fozcoadigital.com</u>) allowing access to the service by creating public Internet access zones. Foz Côa Digital service is aimed at the general public and enables free Wi-Fi Internet access; the scheme is managed and supplied by the municipality of Município de Vila Nova de Foz Côa and participating Parish councils.

Whether broadband offers are available at a determined location depends on the existence of public switched telephone network exchanges with DSLAM, the existence of cable television distribution networks cable television prepared to provide broadband, the existence of 3G or the existence of fibre optic networks.

Meanwhile, at the end of the fourth quarter of 2011, there were 1853 exchanges in Portugal equipped with DSLAM, which corresponds to the entirety of possible coverage for the provision of ADSL, a situation in place since 4th Quarter 2006. These infrastructures are concentrated in Greater Lisbon and Greater Porto, in the North Coast region and in the Algarve. In the country's interior, exchange density is lower, in line with the lower population density of the territory. It should be noted that there are exceptional cases where provision of ADSL services over a particular loop may not be possible owing to the loop's physical characteristics (e.g. length, section and state of repair).





Source: ICP-ANACOM

Figure 2 – Distribution of exchanges with DSLAM by municipality and population density (Autonomous Regions)



Source: ICP-ANACOM

According to the EC, in December 2010, coverage of DSL in Portugal – service availability – was the 9th highest among the 27 EU. In rural areas, DSL coverage in Portugal places the country in 9th place in the ranking.

It should also be noted that coverage in Portugal (99 percent) was above the EU27 average, which is 95 percent. In the rural areas of the EU27, the average is 83 percent, compared to 94 percent in Portugal⁴⁸.

⁴⁸ See Digital Agenda Scoreboard 2011, available at http://ec.europa.eu/information_society/digitalagenda/scoreboard/docs/pillar/broadband_coverage_2010.pdf



Graphic 42 - DSL coverage in the EU27, in December 2010

Unit: %

Source: Broadband Coverage in Europe, 2011 Survey. IDATE

With regard to broadband Internet access using cable modem, the cable distribution networks in Portugal are concentrated in Greater Lisbon and Greater Porto.

In the case of autonomous regions, the percentage of cabled dwellings was 57 percent in Madeira, and 72.4 percent in the Azores. These values are explained by the protocols agreed between the Government of the Republic, the Regional Governments, ICP-ANACOM and the sole operator of television distribution networks

operating in each of the two autonomous regions. These protocols are aimed at ensuring the conditions required so that citizens of the autonomous regions can have access, without the payment of monthly fees⁴⁹, to the general non-conditional access channels available in Portugal, namely, RTP1, RTP2, SIC and TVI, as well as RTP Azores and RTP Madeira, in the respective autonomous region. The protocol in force in the Autonomous Region of Madeira was signed on 6 August 2004 and the Protocol covering the Autonomous Region of the Azores was celebrated on 5 November 2005, effective for one year.

In 2011, a reduction was reported in the number of cabled dwellings in the Autonomous Region of Madeira, which led to a contraction in coverage by 17 percentage points as a result of the switch off of the MMDS antennas.

⁴⁹ Users may have to pay a certain amount for the box.

Figure 3 – Distribution by municipality of the total number of cabled dwellings by all operators as a proportion of total dwellings (Mainland Portugal)



Source: ICP-ANACOM

Note: The provision of the service by more than one operator in the same area implies the possibility that the same dwelling may be subject to multiple cabling. This means that the sum of cabled dwellings by all operators may result in duplicate counting. This is evident, for example, in the Lisbon region, where the sum of cabled dwellings for all operators is greater than the total dwellings. This has gained importance with the growing competition between operators. It is estimated that this effect of double counting accounts for a maximum of 13.5 percent of cabled dwellings.

According to the EC, coverage of cable television networks in Portugal as in December 2010 (85 percent of the population) was clearly above the EU (45 percent). In rural areas, Portugal has one of the highest rates of coverage of the EU27 (51 percent versus an average of 14 percent).





Unit: %

Source: Broadband Coverage in Europe, 2011 Survey. IDATE

As regards the geographic availability of the offer of accesses using cable TV distribution networks with implementation of the EuroDOCSIS 3.0 standard, reference is made to the section on high-speed networks. The percentage of dwellings with

accesses supported over EuroDOCSIS 3.0, as the standard used by cable TV operators to provide of high-speed services, corresponds to about 68.2 percent of total dwellings as at the end of 2011.

In light of the information presented above, it can be seen that the density of FBB coverage follows the variations in the territory's population density.

MBB is available in areas where 3G networks are accessible. According to the EC, in December 2010, coverage in Portugal was reported at 98 percent of the population, above the EU27 average (90 percent). The 3G (HSDPA) network was accessible to 85 percent of the population. In terms of territorial coverage, 3G networks covered about 67 percent of the territory as in December 2010, exceeding the EU27 average of 58 percent.

Meanwhile, operators have put forward coverage objectives for 4G at the end of 2012. Presenting its new 4G offers, TMN said that it could guarantee, at that time, 20 percent of population coverage predicting that it would extend this percentage to more than 90 percent by the end of 2012.

Meanwhile, Vodafone announced that coverage of its 4G network encompassed a significant section of the cities of Lisbon and Porto, and was present in all district capitals, Funchal and Ponta Delgada.

Optimus has this service available in Lisbon, Porto and all district capitals and aims to provide coverage to 80 percent of the population by the end of 2012.



Graphic 44 – Coverage of 3G (UMTS) in the EU27

Unit: % of population

Source: EC, Digital Agenda Scoreboard 2011, IDATE



Graphic 45 – Territorial coverage of 3G (UMTS) in the EU27, in December 2010

Unit: % of territory

Source: Broadband Coverage in Europe, 2011 Survey. IDATE


Graphic 46 – 3G (HSDPA) coverage in the EU27, in December 2010

Unit: % of population

Source: Broadband Coverage in Europe, 2011 Survey. IDATE

The geographical availability of optical fibre (FTTH/B) is addressed in the section on high-speed networks. Around 33.7 percent of all conventional dwellings were passed with optical fibre (FTTH/B) as at the end of 2011, in terms of all operators.

4.2.3. Internet access service (IAS) providers

As at the end of 2011, there were 51 undertakings in Portugal registered and authorized to provide the fixed IAS and five undertakings licensed to provide mobile Internet access, two of which were virtual mobile network operators. These undertakings are also called Internet service provider (ISP).

Among the ISP legally authorised to provide the fixed Internet access service, 36 were operational.

The following table shows the evolution reported with regard to undertakings with authorising titles for the provision of this service, with indication of market entries and exits during the year.

Company name		Entries	Exits	End
4 Great Wireless Broadband Solutions, S.A. (4G WING)	NA			NA
ADIANIS – Telecomunicações & Multimédia, S.A.	NA			NA
AR Telecom - Acessos e Redes de Telecomunicações, S.A.	А			А
Alcaria – Sistemas de Comunicações, Lda.		Х		А
AT & T – Serviços de Telecomunicações, Soc. Unip., Lda. ⁽¹⁾	NA			Α
Associação Porto Digital		Х		NA
BT Portugal – Telecomunicações, Unipessoal, Lda. ⁽¹⁾	NA			NA
CABOVISÃO – Televisão por Cabo, S.A.	А			А
CGEST, S.A.	А			А
CGPT, Lda.	NA			NA
CLARA.NET Portugal – Telecomunicações, S.A.	А			А
COLT Technology Services, Unipessoal, Lda.	А			А
COGENT Communications Portugal, Lda.	А			А
Companhia IBM Portuguesa	А			А
CORED – Comunicações e Serviços em Rede, S.A.	NA		Х	
CYCLOP NET – Informática e Telecomunicações, Lda.	А			А
EQUANT Portugal, S.A. (ORANGE)	А			А
FLEXIMEDIA – Serviços e Meios Inf. e Comunicação, Lda.	А			А
GLOBAL CROSSING PEC Espana S.A.	А			А
G9SA – Telecomunicações S.A.	А			А
Gowireless – Comércio de Equip. de Telecomunicações Unip., Lda.		Х		А
HSIA Hospitality Services Portugal – Serviços de Internet, S.A.	А			А
IPTV TELECOM – Telecomunicações, Lda.	NA			А

Table 40 – ISP in 2011 - fixed

Company name (cont.)		Entries	Exits	End
KNEWON, S.A.		Х		NA
Kubi Wireless, S.L.		Х		A
Lazer Visão Antenas, Lda.	А			А
MINHOCOM, Gestão de Infraestruturas de Telecomunicações, EIM	NA			NA
Mobizapp – Comunicações Eletrónicas, S.A.	NA		Х	
NETACESSO – Serviços Internet e Multimédia, Lda.	NA			NA
NFSI Telecom, Lda.	А			А
Optimus – Comunicações, S.A.	А			А
ONITELECOM – Infocomunicações, S.A.	А			A
ORBIRECURSO Eletricidade e Comunicações, Lda.	NA			NA
Pinkhair – Unipessoal, Lda.	А			Α
PT Comunicações, S.A.	А			А
PT PRIME –Soluções Empresariais de Telecomunicações e Sistemas, S.A.	А		Х	
REFER Telecom – Serviços de Telecomunicações, S.A.	А			А
SEMCABO – Soluções em Redes Informáticas. Lda.				А
STV – Sociedade de Telecomunicações Vale do Sousa, S.A.	А			A
TAKE SIGNAL, Lda.	NA			NA
T – SYSTEM ITC Iberia, S.A. (Soc. Unipersonal) - (Sucursal em Portugal)	NA			NA
TELE LARM Portugal – Transmissão de Sinais, Lda.	А		Х	
TELVENT Portugal, S.A.	А			А
TMN – Telecomunicações Móveis Nacionais, S.A.	А			Α
TRANSIT Telecom, Sociedade Unipessoal, Lda.	NA			NA
UNITELDATA – Telecomunicações, S.A.	А			А
VALICOM, Gestão de Infraestruturas de Telecomunicações, EIM	NA			NA
VERIZON Portugal – Sociedade Unipessoal, Lda.	А			A
VODAFONE Portugal – Comunicações Pessoais, S.A.	А			A
WING Global Communications, S.A. (WGC)	NA			NA
WORLDBROKER Telecomunicações –Sociedade de Telecomunicações e Multimédia, Lda.	А			А
ZON TV Cabo Açoreana, S.A.	А			А
ZON TV Cabo Madeirense, S.A.	А			А
ZON TV Cabo Portugal, S.A.	А			А
Total active	33			36
Total non-active	16			14
Total overall	49	5	4	50

Source: ICP-ANACOM

Key: A active NA Not active

(1) Undertaking eligible to provide IAS, however, only reporting activity in Other Data Transmission Services (ODTS)

Among the operators listed above, those presented below provide the Internet service using dial-up access.

	Table 41–	Internet access	service	providers	with	dial-up	offers
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AT & T – Serviços de Telecomunicações, Soc. Unip., Lda CLARA.NET Portugal – Telecomunicações, S.A.
FLEXIMEDIA – Serviços e Meios Inf. e Comunicação, Lda.
G9 SA – Telecomunicações, S.A.
ONITELECOM – Infocomunicações, S.A.
Optimus – Comunicações, S.A.
PT Comunicações, S.A.
PT PRIME – Soluções Empresariais de Telecomunicações e Sistemas, S.A.
VODAFONE PORTUGAL – Comunicações Pessoais, S.A.

Source: ICP-ANACOM

The following table lists cable distribution networks operators that, at the end of 2011, were engaged in offering broadband Internet services via cable modem.

Table 42 – Cable distribution network operators providing IAS

CABOVISÃO – Sociedade de Televisão por Cabo, S.A.
IPTV TELECOM – Telecomunicações, Lda.
Lazer Visão Antenas, Lda.
STV – Sociedade de Telecomunicações Vale do Sousa
UNITELDATA – Telecomunicações, S.A.
ZON – TV Cabo Açoreana, S.A.
ZON – TV Cabo Madeirense, S.A.
ZON – TV Cabo Portugal, S.A.

Source: ICP-ANACOM

The providers who were offering broadband Internet access services via ADSL are listed in the following table.

Table 43 – IAS providers offering ADSL access

AR Telecom – Acessos e Redes de Telecomunicações, S.A.
CLARA.NET Portugal – Telecomunicações, S.A.
COLT Telecom – Serviços de Telecomunicações, Unipessoal, Lda.
Companhia IBM Portuguesa
CYCLOP NET – Informática e Telecomunicações, Lda.
G9 SA – Telecomunicações, S.A.
Gowireless – Comércio de Equip. de Telecomunicações Unip., Lda
HSIA Hospitality Services Portugal, S.A.
IPTV TELECOM – Telecomunicações, Lda.
NFSI – Soluções Internet, Lda.
ONITELECOM – Infocomunicações, S.A.
Optimus – Comunicações, S.A.
PT PRIME – Soluções Empresariais de Telecom. e Sistemas, S.A.
PT Comunicações, S.A.
TMN – Telecomunicações Móveis Nacionais, S.A.
VODAFONE PORTUGAL – Comunicações Pessoais, S.A.
WORLDBROKER Telecomunicações — Sociedade de Telecomunicações e Multimédia, Lda.
Kubi Wireless, S.L.

Source: ICP-ANACOM

Providers who were offering broadband Internet access via FTTH/B are listed below.

Table 44 – IAS providers with FTTH/B access offers

CABOVISÃO – Sociedade de Televisão por Cabo, S.A.
COGENT Communications Portugal, Lda.
COLT Telecom – Serviços de Telecomunicações, Unipessoal, Lda.
G9 SA – Telecomunicações, S.A.
HSIA Hospitality Services Portugal, S.A.
Lazer Visão Antenas, Lda.
NFSI Telecom, Lda.
ONITELECOM – Infocomunicações, S.A.
Optimus – Comunicações, S.A.
PT PRIME – Soluções Empresariais de Telecom. e Sistemas, S.A.
PT Comunicações, S.A.
REFER Telecom – Serviços de Telecomunicações, S.A.
VODAFONE PORTUGAL – Comunicações Pessoais, S.A.
ZON – TV Cabo Madeirense, S.A.
ZON – TV Cabo Portugal, S.A.

Source: ICP-ANACOM

Meanwhile, the one licensed provider using FWA technology as at the end of 2011 is listed in the following table⁵⁰.

Table 45 – IAS providers with FWA offers

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ONITELECOM – Infocomunicações, S.A.
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Source: ICP-ANACOM

The following tables list the broadband IAS providers that use other fixed technologies, such as leased lines.

⁵⁰ AR Telecom discontinued its offer supported over FWA in November 2011.

Table 46 – IAS providers – other technologies (fixed)

Alcaria – Sistemas de Comunicações I da
AR Telecom – Acessos e Redes de Telecomunicações, S.A.
AT & T – Serviços de Telecomunicações, Soc. Unip., Lda
CGEST, S.A.
CLARA.NET Portugal – Telecomunicações, S.A.
COLT Telecom – Serviços de Telecomunicações, Unipessoal, Lda.
Companhia IBM Portuguesa
EQUANT Portugal, S.A. (Orange)
FLEXIMEDIA – Serviços e Meios Inf. e Comunicação, Lda.
G9 SA – Telecomunicações, S.A.
GLOBAL CROSSING PEC Espana S.A.
HSIA Hospitality Services Portugal, S.A.
IPTV TELECOM – Telecomunicações, Lda.
NFSI – Soluções Internet, Lda.
ONITELECOM – Infocomunicações, S.A.
Pinkhair
PT PRIME – Soluções Empresariais de Telecom. e Sistemas, S.A.
REFER Telecom – Serviços de Telecomunicações, S.A.
SEMCABO – Soluções em Redes Informáticas. Lda.
TELVENT Portugal, S.A.
VERIZON Portugal, Sociedade Unipessoal, Lda.
VODAFONE Portugal – Comunicações Pessoais, S.A.

Source: ICP-ANACOM

In addition to the identified providers, there are also active providers that have nationwide licenses for international mobile telecommunications systems (IMQ2000/UMTS), and providers supported on these networks (MVNO).

Table 47 – MTS providers offering the MBB IAS

Optimus Telecomunicações, S.A.
TMN – Telecomunicações Móveis Nacionais, S.A.
Vodafone Portugal – Comunicações Pessoais, S.A.
ZON – TV Cabo Portugal, S.A. (MVNO)

Source: ICP-ANACOM

CTT, which has an MVNO operation, sells a MBB offer of TMN under its own brand. Following the multi-band auction, Optimus, TMN and Vodafone Portugal are also eligible to provide 4G services.

4.2.4. The structure of the Internet access offer (fixed)

In recent years, several operations occurred, or were announced, which have affected the offer structure of these services.

On the one hand, in 2007, the spin-off of PT Multimédia from Grupo PT took place, after Optimus launched an unsuccessful takeover bid of Portugal Telecom, SGPS, S.A. Meanwhile, Optimus acquired Tele2 and the residential business of Onitelecom.

As a result of the spin-off of PT Multimédia, which was completed in November 2007, Grupo PT's share of broadband customers declined to 40 percent, 30.6 percentage points less than in the previous year (excluding the effect of the spin-off, Grupo PT's share would have declined by 4.1 percentage points in 2007).

On the other hand, in 2008 ZON Multimédia acquired the companies of Grupo Parfitel (Bragatel, Pluricanal Leiria and Santarém Pluricanal) and TVTEL.

In November 2011, AR Telecom discontinued its offer of telecommunications services to the residential segment, and ZON acquired its customer base.

In December 2011, PT Prime merged into PT Comunicações.

As such, as at the end of 2011, there were 36 operational service providers of Internet access at a fixed location. The following providers were present in these markets:

- the five major electronic communications groups providing integrated offers and with a widespread presence in all markets and segments (Grupo PT, Grupo ZON, Optimus, Vodafone and Cabovisão);
- representatives of major international electronic communications groups (e.g., Colt Telecom, Equant, Global Crossing, PEC España, Swisscom, Verizon) and other companies engaged in the provision of services to the corporate sector and other large customers (e.g. Onitelecom, G9 SA, Ar Telecom);

- providers of integrated or non-integrated offers located in specific geographical segments (e.g. Uniteldata, STV Telecom);
- providers whose offer of electronic communications services, in some cases provided through resale, complemented the provision of other services (e.g. STV Telecom, Cyclop Net, Worldbroker, IPTV Telecom).

Despite the changes that have occurred, Grupo PT remains the main operator of this service with a customer share of 49.4 percent, 2.6 percentage points more than in the previous year.

	2007	2008	2009	2010	2011
Total customers	40.3%	42.1%	44.5%	46.9%	49.4%
ADSL access customers	68.3%	71.4%	75.8%	79.6%	83.5%
Customers with cable modem	0.0%	0.0%	0.0%	0.0%	0.0%
Customers with other access technologies	6.9%	4.3%	36.6%	71.7%	79.4%
of which customers with optical fibre (FTTH/B) access			65.1%	85.0%	79.9%
Unit: %					

Table 48 – Group PT share of FBB customers

Source: ICP-ANACOM

Subsequent to the spin-off, the incumbent operator's share in Portugal fell below the European average (46 percent in 2007 and 2008 and 45 percent in 2009). In July 2011, Grupo PT increased its share, exceeding the European average, which continued to decline (43 percent in July 2011).





Unit: %

Source: EC, COCOM, Broadband access in the EU: situation at 1 July 2011

The evolution reported in Grupo PT's share has not been constant over time. Initially, broadband was provided through cable modem and Cabovisão and TV Cabo were the main operators at this time. Following the launch of ADSL, Grupo PT gained an even more significant position: Grupo PT's share of customers increased by around 16 percentage points between 2001 and 2004, reaching 82 percent at the end of this year.

In 2005, this trend was reversed following intervention by ICP-ANACOM with regard to wholesale Internet access offers and the resulting response by alternative operators:

There were about 69 thousand unbundled broadband loops in 2005; in 2006 the number of new unbundled loops rose to about 120 thousand, falling to about 95 thousand in 2007 and to 13 thousand in 2008. As at the end of 2008, the accumulated volume of unbundled broadband loops was reported at 296 000 accesses – about 30 percent of total ADSL accesses. Using this resource, the new providers were given direct access to the customer's home and developed more competitive voice and broadband offers.

Since 2009 there has been a decline in the number of unbundled loops. By the end of 2011, the accumulated volume of unbundled broadband loops totalled 183 thousand – 46 thousand accesses fewer than reported at the end of 2010.

As at the end of 2011, this type of access represented about 17 percent of all ADSL accesses. The decline which has been observed in the number of unbundled broadband accesses stems mainly from the development of own access networks.



Graphic 48 – Evolution in the number of unbundled FBB accesses

Unit: thousands of accesses

Source: ICP-ANACOM

- over the same period, coverage of the *Rede ADSL PT* (bitstream access) wholesale offer increased, contributing at first, along with other factors, to an increase in the penetration of FBB, as well as to the launch of new offers with higher speeds. In line with unbundled accesses, bitstream accesses have also been declining, so that by the end of the year offers based on the *Rede ADSL PT* offer made up around 6 percent of total ADSL accesses;
- the wholesale naked digital subscriber line offer (naked DSL) has also, albeit to a lesser extent, helped stimulate penetration of broadband services and competition, bringing about a reduction in total costs incurred by end-users in broadband Internet access by enabling Internet access without requiring FTS.

At the end of 2011, about 3.6 thousand ADSL accesses used this model, 1.5 thousand more than at the end of 2010.

In the last three years, Grupo PT's share of broadband accesses has seen some recovery (increasing 5.3 percentage points), in particular due to multiple play offers and FTTH offers from PT Comunicações.

The evolution reported in the shares of the remaining market participants, in terms of accesses, has also seen significant changes since 2007.

Due to acquisitions of the companies of Grupo Parfitel and TVTEL, and owing also to activity of previously existing business units, ZON/TV Cabo's share of accesses increased by 4.9 percentage points in 2008. ZON's share continued to grow in subsequent years, and at the end of 2011, Grupo ZON Multimédia's share of accesses reached 33 percent, rising by 0.5 percentage points over the previous year.

After an Increase of 6.4 percentage points in 2007, Optimus has seen significant declines in its market share: about 3.8 percentage points in 2008, 3.2 in 2009, 2.6 in 2010 and 2.1 in 2011.

Table 49 – Evolutio	on in shares of	FBB accesses
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Providers of the service	2008	2009	2010	2011
Grupo PT	42.1%	44.5%	46.9%	49.4%
PT Comunicações	39.6%	42.2%	44.9%	48.0%
PT Prime	2.4%	2.2%	1.9%	1.4%
PT Wi-Fi/TMN	0.1%	0.1%	0.1%	0.1%
Grupo ZON multimédia	30.7%	31.9%	32.5%	33.0%
ZON TV Cabo Portugal	26.0%	29.6%	30.1%	30.5%
ZON TV Cabo Madeirense	1.6%	1.5%	1.5%	1.6%
ZON TV Cabo Açoreana	0.7%	0.8%	0.9%	0.9%
TVTEL	1.7%	-	-	-
Bragatel	0.4%	-	-	-
Pluricanal Leiria	0.2%	-	-	-
Pluricanal Santarém	0.1%	-	-	-
Alternative providers	27.3%	23.6 %	20.7 %	17.6 %
Cabovisão	9.0%	7.8%	7.9%	7.2%
Optimus	12.3%	9.1%	6.6%	5.4%
Optimus	11.8%	9.1%	6.6%	5.4%
Tele2	0.6%		-	-
Vodafone	3.1%	4.2%	4.2%	4.2%
AR TELECOM	1.6%	1.4%	1.2%	0.1%
ONITELECOM	0.4%	0.3%	0.3%	0.1%
Other alternative providers	0.9%	0.7%	0.6%	0.6%

Unit: %

Source: ICP-ANACOM

There are therefore five undertakings with significant shares in the (fixed) broadband Internet access market: Grupo PT, Grupo ZON/TV Cabo, Cabovisão, Optimus and Vodafone.

The following graph shows the evolution in reported quarterly marginal shares in subscribers with FBB access.

According to available data, in 2011, and in net terms, Grupo PT has managed to acquire the majority of new FBB customers⁵¹.

⁵¹ These new customers correspond to new provider contracts on a net basis and not necessarily the new customers of the service (i.e. these new customers may have previously been customers of other providers).



Graphic 49 – Evolution in quarterly marginal shares of subscribers to FBB

Unit: %

Source: ICP-ANACOM

Note: In 4Q07 there was an overall decline in the number of broadband customers, with alternative operators (overall and in net terms) the only operators which contributed to the increase in the number of customers on a net basis. In 3Q08 and 4Q11 similar situations occurred, although the positions of the two class of providers reversed.

Analyzing the evolution reported in market share by access technology, it can be seen that in 2011 Grupo PT continued to increase its share of ADSL customers. In 2010, Grupo PT group gained 3.9 percentage points in its share of ADSL customers, reaching a total share of 83.5 percent.



Graphic 50 – Evolution in shares of ADSL broadband accesses





However, the competitive positions of the companies in terms of this technology have changed rapidly since the beginning of 2005. Over this period, Grupo PT's share fell by 16 percentage points and during 2007, about 50 percent of new customers opted for the services of alternative operators. However, from 2nd quarter 2008, this trend reversed, with Grupo PT recovering market share in this technology. Since the end of 2007, PTC has recovered 16 percentage points in its share of customers. This recovery may be partly explained by the focus of its major competitors on alternative platforms.

In terms of access through cable modem, in 2011 Grupo ZON's share grew 1.5 percentage points to stand at 81.8 percent.



Graphic 51 – Evolution of shares of accesses using cable modem

Unit: %

Source: ICP-ANACOM

Note: Data from 4Q2008 includes the values resulting from the acquisition of the companies of Grupo Parfitel (Bragatel, Pluricanal Leiria and Pluricanal Santarém), as well as of TVTel by Grupo TV Cabo/ZON, subsequent to the decision of non-opposition issued by *Autoridade da Concorrência* (the Competition Authority) in November 2008.

With the acquisition of the companies of Grupo Parfitel and TVTEL, Grupo ZON now competes with only four other operators when it comes to this technology, the largest of which is Cabovisão.

In 2008, optical fibre began to emerge as an alternative technology to ADSL and cable modem. In 2011, Grupo PT's share in this technology was 79.9 percent, falling 5.1 percentage points from the previous year. Grupo PT is followed by Optimus and Vodafone supplying 10.3 percent and 9.2 percent of accesses, respectively.

As regards other technologies – primarily leased lines and FWA – Grupo PT's share, as reported in 4Q2011, increased to 11.1 percent. This significant increase stems from the fact that one operator discontinued an offer supported by FWA.

In the case of dial-up, Grupo PT's share as at the end of 2011 was reported at about 92.2 percent, increasing 2.2 percentage points compared to 2010. This increased share mainly reflects the accelerated reduction in the number of customers using this type of access (falling 10 percent from 2010).

According to the Barómetro de Telecomunicações - Rede Fixa (Telecommunications Barometer – Fixed network)⁵² from Marktest, when guizzed about their intention of switch Internet provider, the majority of respondents (81.5 percent) reported no intention of switching. Some 4.7 percent reported they would switch in the next three months.

Table 50 - Intention to switch Internet provider in the next three months

Intention to switch provider	4Q2011
Evident intention to switch provider in the next three months (1 to 4)	4.7
Indecision (5-9 and Don't know/No response)	13.9
No intention of switching provider in the next three months (10)	81.5
Total	100

Unit: %

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer), 4Q2011

Base: Total homes without access to Internet service

Note 1: The original response scale: 1 Definitely going to switch, 10 Definitely not going to switch **Note 2**: Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate.

4.2.5. The evolution of commercial offers in Portugal during 2011

The offer of the Internet access service is characterized by a diversity of technologies, transmission speeds and bundles of service. Over the course of 2011, providers have modified their offers, increasing offers supported over high-speed networks and upgrading available speeds. Simultaneously, there has been a proliferation of multiple play offers.

⁵² The Barómetro de Telecomunicações (Telecommunications Barometer) is a regular study of Marktest for the telecommunications sector.

The universe of the Barómetro de Telecomunicações - Rede Fixa (Telecommunications Barometer -Fixed network) comprises dwellings in Mainland Portugal or in the Autonomous Regions of Madeira and the Azores. A sample is compiled on a monthly basis which is proportional to and representative of the study's universe.

The universe of the Barómetro de Telecomunicações - Rede Móvel comprises people aged 10 and over living in Mainland Portugal or in the Autonomous Regions of Madeira and the Azores; a sample is compiled on a monthly basis which is proportional to and representative of the study's universe, corresponding to 1,350 interviews per month.

The analysis presented here does not reflect the relative weight of the offers actually chosen by consumers, but only their availability in the market.

Evolution reported in offers at a fixed location

With regard to offers at a fixed location, at the end of 2011, there were around 112 different offers.

In 2011, Internet access at a fixed location was mainly provided through ADSL access, access via cable modem cable and optical fibre (FTTH/B).

As shown in the graph below, the cable network supports the largest number of offers at a fixed location. Compared to the previous year, there was a reduction in the number of xDSL offers whereas optical fibre (FTTH/B) offers increased.



Graphic 52 – Number of FBB offers available in Portugal at the end of each year

Unit: %

Source: ICP-ANACOM

With respect to broadband Internet access offers using cable modem, it is reported that some operators have upgraded their networks, expanding deployment of the EuroDOCSIS 3.0 standard. Offers based on EuroDOCSIS 3.0 were first launched commercially at the beginning of 2009, and at the end of 2011, represented about 37 percent of all products supported over cable modem.

Meanwhile, and upon the initiative of alternative providers, new retail Internet access offers began to emerge in 2008 based on optical fibre (FTTH/B). This kind of offer saw significant growth in 2011, as a result of the development of offers using this technology, especially offers from PTC, Optimus and Vodafone. Offers supported over optical fibre (FTTH/B) made up 36 percent of total available broadband offers at the end of the year.

Likewise, the number of broadband offers included in multiple play bundles also increased. Broadband offers included in bundles made up 81.2 percent of the total (80 percent in 2010). About 70 percent of broadband offers were integrated into offers comprising three or more services.





Unit: %

Source: ICP-ANACOM

In terms of download speeds, the main speeds available have changed significantly. In 2010, the principal speeds were 10 Mbps, 20 Mbps, 30 Mbps and 100 Mbps. As at the end of 2011, the principal speeds were 12 Mbps, 24 Mbps, 30 Mbps and 100 Mbps.



Graphic 54 – Distribution of FBB offers by transmission speed in Mbps



Source: ICP-ANACOM

The available information suggests that the speeds offered by operators have been upgraded. For example, previous offers of 10 and 12 Mbps are now 15 Mbps. Offers of 20 Mbps have been upgraded to 24 Mbps or 30 Mbps, and offers that used to 300 Mbps are now 360 Mbps.



Graphic 55 - Percentage change in the number of FBB offers by download speed in Mbps

Units: %, Mbps

Source: ICP-ANACOM

The number of offers with speeds exceeding 20 Mbps also increased (64 percent of total offers). The offers with higher transmission speeds were supported over optical fibre or coaxial cable (HFC) using EuroDOCSIS 3.0.

The following graph shows the maximum download speeds of the offers available in the countries of the EU which are members of the OECD.

Almost all countries had speeds available of at least 100 Mbps and six countries, among those considered, including Portugal, had offers with speeds exceeding 150 Mbps.





Unit: Kbps

Source: OECD Broadband Portal

Finally, it is reported that, in Portugal, about 88 percent of broadband offers did not include traffic limits.

Evolution reported in mobile broadband (MBB) offers

The number of MBB offers increased in 2011, to exceed 100 offers. In the previous year, there were only 70 offers available on the market. The number of MBB offers is similar to the number of FBB offers.

About 58 percent of the offers were post-paid, 20 percent pre-paid and 49 percent were offers of Internet on mobile telephones.

Specific offers were also available for tablets, with other offers available for Internet on mobile telephones with daily and weekly tariffs. Many MBB offers remained available as part of bundles including voice, SMS, MMS and offer of Internet traffic, particularly specific offers associated with smartphones such as the iPhone or Blackberry, and also MBB offers included in bundles with satellite television and multiple play over the fixed network or cable. The majority of triple play bundles from major providers offer 100 MB of free MBB traffic through the initial acquisition of a MBB pen.

The maximum download speeds offered increased. As at the end of 2011, 61 percent of offers had maximum download speeds greater than or equal to 4 Mbps, with a maximum speed of 43.2 Mbps offered and a slowest speed of 512 Kbps. Some operators upgraded the speeds offered, resulting in an increase of offers with speeds of 7.2 Mbps. The number of offers with speeds of 1Mbps, the predominant speed in Internet tariffs on mobile phones, was maintained.





Source: ICP-ANACOM

Unit: %

After 2007, when the deployment of HSUPA was announced, an increase was reported in upload speeds. The maximum upload speed announced at the end of 2011 was 11.4 Mbps.

As is the case in Portugal, there are more and more countries offering higher MBB speeds. Some European operators, including Sweden, Austria, Finland, Germany and Norway have launched commercial offers using LTE, which allows a download speed up to 50 Mbps through cards/modem. In Portugal, 4G offers launched in the first quarter of 2012 by the three operators offered speeds of 50 Mbps and 100 Mbps.

In terms of traffic limits, 73 percent of MBB post-paid offers included traffic limits (ranging from 1 GB and 4 GB per month). When the limit is exceeded, the download speed is reduced to 128 Kbps, or alternatively, some tariffs provide an option to acquire a new "packet" of traffic, allowing customers to continue navigating to the same broadband speed.

The tariffs offering unlimited traffic represent about 27 percent. The offers that advertise unlimited traffic impose a policy on the consumer of responsible use which in some cases, limits traffic to 15 GB traffic per month. When this limit is exceeded, navigation is not halted, however, there is a significant reduction in the maximum connection speed to 128 Kbps.



Graphic 58 – Percentage of MBB offers by volume of included monthly traffic in 4Q11

Source: ICP-ANACOM. Operator websites

Units: GB, %

The characteristics of pre-paid broadband offers are distinct from the characteristics of post-paid offers. The limits are defined according to a number of hours of use over a determined number of days; and offers with a limit of included traffic that can be used within a certain period of time (20 days, 30 days, etc.).

In both cases the customer is able to top up the values defined in the offer and acquire more navigation time or more traffic (MB).

In the case of mobile phone Internet offers, announced limits are now in the range of 10 MB/day (for daily tariffs) and 600 MB monthly, with some adjustments reported in these offers.

New tariffs appeared specifically for tablets, with daily or monthly tariff, and with traffic limit ranging from 200MB (daily tariff) to no limit (subject to fair use policy).





Units: MB, %

Source: ICP-ANACOM. Operator websites

4.2.6. Pricing of broadband Internet access service (IAS)

IAS base prices (i.e. excluding equipment or activation/installation fees or additional services) at a fixed location, and taking into account promotions with durations equal to more than one year, range from 16.9 euros (monthly average in the first year of subscription) and 139.9 euros (including bundles with voice, television and MBB).

The range in pricing reflects not only the download speed and upload speed of the Internet service and the number of available channels in the service, but also the type of technology and also the packets of included voice minutes, as can be seen in the table below.

32) Mbps	33) Stand-alone		34) FBB +FTS	4) FBB +FTS 35) TV+FBB		36) FBB+ MBB	FBB+ MBB 37) TV+FBB+FTS		TS
	ADSL	Cabo	FTTH	Cabo	FTTH	ADSL	ADSL	Cabo	FTTH
Min. price	€ 16.9	€ 19.9	€ 30.9	€ 30.9	€ 25	€ 19.5	€ 57.3	€ 24.9	€ 25
0-2	€ 16.9								
3-8	€ 17.9	€ 19.9		€ 30.9	€ 25	€ 19.5		€ 35.9	€ 25
10-15	€ 27.9	€ 25.9			€ 35	€ 29.5		€ 24.9	€ 35
20-24	€ 32.9	€ 37.0				€ 35.5		€ 47.0	
30-50		€ 35.3	€ 30.9	€ 40.2			€ 57.3	€ 45.8	
60-100		€ 60.9	€ 38.4					€ 54.9	
120-300			€ 53.4					€ 64.1	
>300			€ 69.4						

Table 51 – IAS prices by technology and bundle type (I)

Units: Mbps; euros

Source: Websites of Internet access service providers

Mbps	TV+FBB	+MBB	FBB+FT	S+MBB	TV+I	FTS+FBB+N	1BB	TV+FTS+FE +MT	3B+MBB S
	ADSL	FTTH	ADSL	FTTH	ADSL	Cable	FTTH	ADSL	FTTH
Min. price	€ 39.0	€ 39.0	€ 19.5	€ 26.9	€ 33.9	€ 29.2	€ 30.9	€ 53,2	53,2 €
0-2									
3-8					€ 41.5	€ 29.2	€ 30.9		
10-15			€ 19.5		€ 39	€ 39.2	€ 39		
20-24	€ 39		€ 24.5		€ 33.9	€ 50.2	€ 43.9	€ 53,2	53,2€
30-50		€ 39		€ 26.9		€ 59.9	€ 33.9		
60-100		€ 53.1		€ 35.9		€ 54.7	€ 46.7		66,9 €
120-300				€ 79.7		€ 63.7	€ 96.2		
>300						€ 139.9			

Units: Mbps; euros

Source: Websites of Internet access service providers

The average price of the offers available in 2011 - 44.40 euros – was below the average price reported in the previous year (44.80 euros). The average download speed was higher (42.8 Mbps in 2010). The increase in VAT affect these values.

	Minimum price	Minimum download (Mbps)	Average price	Average download (Mbps)	Maximum price	Maximum download (Mbps)
ADSL	€ 16.9	2	€ 35.8	16	€ 62.3	24
stand-alone	€ 16.9	2	€ 25.8	9	€ 35.9	24
FBB+MBB	€ 19.5	4	€ 27.2	12	€ 35.5	24
FBB+FTS+MBB	€ 19.5	12	€ 21.9	18	€ 24.5	24
TV+FBB+MBB	€ 39	24	€ 39	24	€ 39	24
TV+FBB+FTS+MBB	€ 33.9	8	€ 44.2	19	€ 51	24
TV+FBB+FTS+MBB+MTS	€ 53.5	24	€ 57.7	24	€ 62.3	24
Cabo	€ 19.9	3	€ 47.9	41	€ 139.9	360
stand-alone	€ 19.9	3	€ 35.9	25	€ 61	100
TV+FBB	€ 31	8	€ 37.9	23	€ 42.6	30
TV+FBB+FTS	€ 25	6	€ 49.6	35	€ 69.9	120
TV+FBB+FTS+MBB	€ 29.2	6	€ 57.9	63	€ 139.9	360
FTTH	€ 25	6	€ 47.7	68	€ 96.2	360
TV+FBB	€ 25	8	€ 30	10	€ 35	12
FBB+FTS	€ 31	50	€ 47.8	178	€ 68.4	360
FBB+FTS+MBB	€ 27	30	€ 42.1	93	€ 79.7	200
TV+FBB+MBB	€ 39	30	€ 46.1	65	€ 53.2	100
TV+FBB+FTS	€ 25	8	€ 32.5	10	€ 40	12
TV+FBB+FTS+MBB	€ 31	6	€ 48.7	58	€ 96.2	200
TV+FBB+MTS+MBB	€ 57.4	30	€ 57.4	30	€ 57.4	30
TV+FBB+FTS+MBB+MTS	€ 53.2	24	€ 60.8	49	€ 66.9	100
	€ 16.9	2	€ 44.4	44	€ 139.9	360

Table 52 – IAS prices by technology and bundle type (I)

Source: Websites of Internet access service providers

According to Marktest's *Barómetro de Telecomunicações* (Telecommunications Barometer), the monthly charge paid by dwellings paying for the Internet access service in a separate bill was 20.20 euros as at the end of 2011, falling one euro from the previous year.





Unit: euros

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer)

Base: Homes with fixed Internet not included in a bundle

A study conducted by the EC in September 2011⁵³ – Broadband Internet Access Cost (BIAC) –, compares broadband access prices across EU countries. The study compares the prices of the FBB offers presented, on a stand-alone basis or as part of a bundle of services.

In this study, eight usage profiles are defined as can be seen in the following table:

⁵³ European Commission, Broadband Internet Access Cost (BIAC), available at http://ec.europa.eu/information_society/digital-agenda/scoreboard/pillars/broadband/index_en.htm___A study of offers available in February 2011. Prices are calculated in €/PPP and include other costs in addition to the monthly subscription charge, such as installation costs, modem or router costs and activation costs. The monthly subscription charge includes the cost of the subscriber line or subscription to the cable television service, where these are necessary components of the offer. Discounts and promotions are taken into account where available to all consumers who purchase the same offer in the same period and if these will be in place for the duration of the contract.

According to the methodology of this study, the minimum priced offer refers to the offer with a determined range of speeds. Lower priced offers with speeds exceeding the range are not considered.

	Internet serv	access ⁄ice	Fixed telephone service			
Baskets	Volume of data (GB)	Hours/ month	Minutes to fixed network	Minutes to mobile network	Average call duration (min)	
1. 144-512 Kbps (incl.)	1	20	70	30	5	
2. 512-1024 kbps (incl.)	1	20	70	30	5	
3. 1024-2048 kbps (incl.)	2	20	70	30	5	
4. 2048-4096 kbps (incl.)	5	20	70	30	5	
5. 4096-8192 kbps (incl.)	5	20	70	30	5	
6. 8192 Kbps-12 Mbps (incl.)	10	20	70	30	5	
7. 12 Mbps-30 Mbps (incl.)	10	-	70	30	5	
8. 30+Mbps	30	-	70	30	5	

Table 53 – Normalisation baskets and parameters used in BIAC study

Source: European Commission, Broadband Internet Access Cost (BIAC), 2011

For transmission speeds between 8 Mbps and 12 Mbps (the range which encompasses the most commonly used stand-alone offers in Portugal), the price in Portugal was about 7.5 percent below the EU27 average⁵⁴. The offer considered for Portugal refers to an ADSL offer from PTC, with a transmission speed of 12 Mbps and 30 GB of included traffic.

⁵⁴ Offers considered for Cyprus and Spain include FTS. These offers were also considered as standalone offers since they were the only offers available for customers who only want the fixed Internet access service. Under the assumption that the customer does not use additional services, the actual monthly cost was calculated without normalization for fixed telephony.





Unit: monthly cost in €/PPP (incl. VAT)

Source: European Commission, Broadband Internet Access Cost (BIAC), 2011

Note: There are no offers at this speed range in four countries: France, Germany, Greece and the Netherlands.

Comparing only the offers of the incumbent operators in each country, for the same range of speeds, the least expensive offer of PTC was found to be 50 percent below the average of the least expensive offers in the EU27.



Graphic 62 – Least expensive Internet-only offer – (8192 kbps – 12 Mbps (incl.)) – incumbent operators only

Unit: monthly cost in €/PPP (incl. VAT)

Source: European Commission, Broadband Internet Access Cost (BIAC), 2011

Note: There are no offers from incumbent operators in this speed range in the following countries: Austria, Bulgaria, Czech Republic, Denmark, Estonia, Ireland, Italy, Latvia, Romania, Slovakia, Spain, United Kingdom, France, Germany, Greece and the Netherlands.

For higher speed ranges, particularly in the 12-30 Mbps range and above 30 Mbps, the least expensive prices in Portugal were 8.6 percent and 29 percent above the EU27 average, respectively.

However, in the 12-30 Mbps range, the offer considered in Portugal is an offer from PTC with 24 Mbps and including free calls in the evenings and at weekends. The offer considered in the basket of offers with speeds exceeding 30 Mbps is an optical fibre offer from PTC, with a speed of 100 Mbps.

The study also examines the prices of Internet access offers included in bundles, for example in Internet + fixed telephone and Internet + television double play, and Internet + fixed telephone + television triple play bundles.

In Portugal double play offers only exist (Internet + fixed telephone) for speed exceeding 8 Mbps. Compared with the EU27 average, the prices of bundled offers in

Portugal were below the European average for all ranges of download speeds above 8Mbps.

Baskets	Divergence Portugal from EU27 average	Ranking
8-12 Mbps (incl.)	-8.1%	5 (out of 18)
12-30 Mbps (incl.)	-6.9%	16 (out of 26)
30+ Mbps	-4.2%	9 (out of 15)

Table 54 – Comparison of prices of bundled offers [Internet + fixed telephone]

Unit: %

Source: European Commission, Broadband Internet Access Cost, 2011

Comparing prices of double play offers (Internet + fixed telephone), for the range of speeds between 8-12 Mbps, it is reported that Portugal was below the EU27 average at about 8.1 percent.

Graphic 63 – Least expensive price for bundled offers of internet fixed telephone – 8192 Kbps-12 Mbps (incl.) (All ISP)



Unit: monthly cost in €/PPP (incl. VAT)

Source: EC, Broadband Internet Access Cost, 2011

In double play offers with Internet and television, the prices of offers considered in Portugal were above the European average for all ranges of download speeds above 8 Mbps.

However, in Portugal, the majority of the offers that incorporate Internet and television also included the FTS. Only seven offers were considered in the analysis of the prices of such bundles.

The offer considered for the 8-12 Mbps range corresponds to a 10 Mbps offer from Cabovisão (the one that falls within the range). In the second interval, the difference in price from the average is explained by the fact that a bundle of services is being considered with 30 Mbps and 103 TV channels (Offer from ZON), when most countries have offers with speeds equal to or less than 20 Mbps and significantly fewer than 100 channels.

In the range of speeds above 30 Mbps, an offer was considered in Portugal with 100 Mbps and 100 TV channels (from PTC). Only two more offers of 100 Mbps were considered, from two countries, but both with less than 60 channels.

Baskets	Divergence Portugal from EU27 average	Ranking
8-12 Mbps (incl.)	+60%	13 (out of 13)
2-30 Mbps (incl.)	+37%	17 (out of 19)
30+ Mbps	+72%	14 (out of 14)

Unit: %

Source: EC, Broadband Internet Access Cost, 2011





Source: EC, Broadband Internet Access Cost, 2011

As regards triple play offers with Internet, voice and television, with the exception of the range of speeds 4-8 Mbps, the most inexpensive offers in Portugal were above the EU27 average.

The bundled offers considered for Portugal include higher speeds and more television channels than the majority of the offers analyzed. Furthermore, the normalisation cost of the FTS, particularly in calls to the mobile network, penalized Portugal's position in the ranking, since the tariff considered only includes calls to the fixed network.

Unit: monthly cost in €/PPP (incl. VAT)

Baskets	Divergence Portugal from EU27 average	Ranking
38) 2-4 Mbps (incl.)	39) +50%	40) 12 (out of 12)
41) 4-8 Mbps (incl.)	42) -14%	43) 8 (out of 20)
44) 8-12 Mbps (incl.)	45) +14%	46) 15 (out of 19)
47) 12-30 Mbps (incl.)	48) +22%	49) 21 (out of 26)
50) 30+ Mbps	51) +43%	52) 19 (out of 20)

Table 56 – Comparison of prices of bundled offers [Internet + television + fixed telephone]

Unit: %

Source: EC, Broadband Internet Access Cost, 2011





Source: EC, Broadband Internet Access Cost, 2011

The results of international comparisons of prices of residential ADSL, cable and optical fibre (FTTH/B) offers of 21 European OECD countries are detailed below. For this purpose, use was made of the methodology defined by the OECD⁵⁵ and information available with reference to September 2011.

The OECD analyzes the prices of broadband offer according to low consumption and high consumption usage baskets for five levels of download speeds. The baskets defined by the OECD are presented in the following table

Unit: monthly cost in €/PPP (incl. VAT)

⁵⁵ The OECD determined the monthly price of residential offers, with and without the price of subscriber line, and considering input prices. Prices shown include VAT and are not expressed in PPP.

Prices are only calculated for stand-alone broadband Internet offers and do not take bundle offers into account. However, in cases where the operator does not offer the service separately, the prices of bundled offers are considered.

	Lo consur	w nption	High consumption		
Range of speeds	GB Hours		GB	Hours	
>0.25 Mbps	2	10	6	30	
> 2.5 Mbps	6	15	18	45	
> 15 Mbps	11	20	33	60	
> 30 Mbps	14	25	42	75	
> 45 Mbps	18	30	54	90	

Table 57 – Definition of the baskets used by the OECD (monthly use)

Units: GB, hours

Source: OECD Broadband Portal, 2011

Considering the ranges of download speeds considered by the OECD, the average prices of offers that fall within each interval and the results for Portugal in terms of ranking and percentage deviations from the average⁵⁶ are presented in the following table.

Table 58 – Monthly average of offers in September 2011

	Low con	sumption	High cons	sumption
Download speed	% deviation from average	Ranking	% deviation from average	Ranking
Basket 1: offers >0.25 Mbps	-10.8%	9 out of 21	-8.7%	9 out of 21
Basket 2: offers >2.5 Mbps	-13.9%	7 out of 21	-14.9%	7 out of 21
Basket 3: offers > 15 Mbps	-13.8%	7 out of 21	-13.8%	7 out of 21
Basket 4: offers> 30 Mbps	-22.9%	6 out of 20	-22.9%	6 out of 20
Basket 5: offers> 45 Mbps	-9.4%	9 out of 20	-9.4%	9 out of 20

Unit: %

Source: ICP-ANACOM. OECD, Broadband Portal, 2011

⁵⁶ This is the simple average excluding the price reported for Portugal.
Mobile broadband (MBB)

In the case of MBB, prices range from 95 cents per day (minimum price for mobile Internet) and 49.99 euros (monthly charge for MBB with unlimited traffic).

The dispersion of prices reflects, in addition to download speeds associated with the offer, the limit of included traffic and the platform supporting the MBB service (mobile phone Internet and MBB through cards/modem USB).

The prices of mobile phone Internet offers have very different characteristics from the mobile Internet using cards/modem USB, the main difference being the volume of traffic associated with the offer. On the other hand, there are daily and weekly tariffs that are only offered for mobile phone Internet or tablets.

The average price of the mobile phone Internet offers included in this comparison was 10.3 euros monthly, 2.73 euros weekly and 0.99 euros daily.

As regards MBB using cards/modem, the analysis covered prices of post-paid offers for use anywhere and for use in one place. For the MBB service in any place, prices ranged from 9.9 euros to 49.99 euros per month.

1.	2. Min price.	3. Min download (Mbps)	4. Min. incl. traffic	5. Av P	erage orice	6.	Average download (Mbps)	7.	Average incl. traffic	8.	Maxim um price	9.	Maximum download (Mbps)	10.	Max. incl. traffic
Internet on mobile phone															
Daily	€ 0.95	0.512	10 MB	€	0.99		0.512		12 MB		€ 1.04		0.512		15 MB
Weekly	€ 1.29	1	25 MB	€	2.73		1.8		95 MB		€ 5.49		4	2	50 MB
Monthly	€ 5.08	1	100 MB	€	10.3		4.1		342 MB	(€ 15.58		7.2	6	00 MB
Tablets															
Daily	€ 3.12	1	200 MB	€	3.12		1		200 MB		€ 3.12		1	2	00 MB
Monthly	€ 12.49	1	1 GB	€	20.62		3.5		5.5 GB*		€ 29.9		7.2		unlim**
MBB															
Post-paid anywhere	€ 9.9	1	300 MB	€ 2	25.97		8.8		7.2 GB*	ŧ	€ 49.99		43.2	u	nlim.**
Post-paid single location	€ 20.49	4	4 GB	€	28.0		5.8		9.5 GB*		€ 35.77		72	u	nlim.**

Table 59 – Prices of MBB

Unit: euros

Source: Websites of Internet access service providers

Note: * Average traffic of offers including offers with limited traffic, whose fair use policy imposes a traffic limit (15 GB).

* Offers with unlimited traffic are subject to a fair use policy that enforces broadband traffic limits (15 GB).

The MBB service in one place had an average price of 28 euros per month.

In terms of prices by download speeds, it is reported that the least expensive prices are slightly lower in the mobile phone Internet offers. However, these offers do not have the same traffic limits.

Table 60 - Least expensive prices for MBB by download speed

	Mob	ile phone Ir	nternet	M	BB
Min. price	Daily	Weekly	Monthly	Post-paid anywhere	Post-paid single location
512 kbps	€ 0.95	-	-	-	-
1 Mbps	-	€ 1.29	€ 5.08	€ 9.9	-
2 Mbps	-	-	-	€ 17.49	-
3 Mbps	-	-	-	€ 23.96	-
4 Mbps	-	€ 4.99	€ 7.99	€ 22.49	€ 20.49
5 Mbps	-	-	-	€ 31.57	€ 23.96
7.2 Mbps	-	-	€ 12.25	€ 12.49	€ 31.06
21.6 Mbps	-	-	-	€ 34.99	-
43.2 Mbps	-	-	-	€ 44.99	-

Units: euros; Kbps, Mbps

Source: Websites of Internet access service providers

In fact, by analyzing prices by limit of included traffic, it is clear that the mobile phone Internet limits are far below those offered in MBB through cards/USB modem, with a maximum of 600 MB and unlimited traffic, respectively.

	Mobile phone Internet			Tabl	ets	MBB		
Min. price	Daily	Weekly	Monthly	Daily	Monthly	Post-paid anywhere	Post-paid single location	
< 100 MB (incl.)	€ 0,91	€ 1,29	€ 5,08	-	-	-	-	
100-300 MB (incl.)	-	€ 4,99	€ 7,99	€ 3,12	-	€ 13,50	-	
300-900 MB (incl.)	-	-	€ 12,25	-		-	-	
900 MB-1GB (incl.)	-	-	-	-	€ 12,49	€ 9,90	-	
1 - 2 GB (incl.)	-	-		-	€ 17,49	€ 17,49	-	
2 -8 GB (incl.)	-	-		-	€ 22,49	€ 22,49	€ 20,49	
8 -15 GB (incl.)	-	-	-	-	-	€ 34,99	€ 35,77	
> 15 GB	-	-	-	-	€ 29,99	€ 29,90	€ 31,06	

Table 61 – Minimum prices of MBB by traffic limit

Unit: euros

Source: Websites of Internet access service providers

4.3. The quality of service delivered

A study by ICP-ANACOM in 2010⁵⁷ examined the quality of service of Internet access provided by different national FBB access operators (cable and ADSL) and 3G mobile.

According to this study, and in the case of downloading files using FTP, the fixed access transmission speed offered for national servers, with the exception of Clix, reported values above 65 percent of the advertised theoretical maximum speed. With regard to foreign servers, these speeds drop to less than half. Except for the offer from Sapo (4 Mbps), which has values above 50 percent, all other operators have values below 40 percent.

Meanwhile speeds offered by mobile operators vary from 1218 Kbps to 2164 Kbps for national servers and from 724 Kbps to 1872 Kbps for servers based abroad.

With respect to file upload transfer speed, good performance is reported for most operators for national servers, with the exception of Sapo.

⁵⁷ http://www.anacom.pt/streaming/QoSacesso_internet_julho2010.pdf?contentId=1052807&field=ATTACHED_FILE

Meanwhile upload speeds for International server varied between 24 and 79.9 per cent.

With regard to web browsing, fixed access provided average page download times less than those offered by mobile technology – in some cases less than half the average download time –, although the difference is reduced to more distant destinations.

MBB has the highest latency values for all destinations. The values reported in the worst case does not prevent provision of VoIP, but does not allow online gaming with interactive games that more sensitive to this parameter (online games with multiple players playing simultaneously). The values recorded for MBB latency were on average about twice those recorded for the FBB.

4.4. The customer profile and usage customer of the Internet access service (IAS)

Characteristics of the user and use of the Internet are presented below, along with the evolution reported in 2011.

4.4.1. Profile of the Internet access service customer (IAS)

Residential customers⁵⁸ constitute the vast majority of Internet access service customers, representing about 87.9 percent of total customers.

⁵⁸ Residential customer should be considered as being any customers who mostly do not use the service in question as intermediate consumption of their economic activity.



Graphic 66 - Characterization of IAS customers according to customer segment



Source: ICP-ANACOM

According data from INE (Statistics Portugal), in 1st Quarter 2011, about 58 percent of Portuguese dwellings had an Internet connection, an increase of 4.3 percentage points over the same period of 2010.



Graphic 67 - Evolution in the residential penetration rate of the IAS

Unit: %

Source: INE (Statistics Portugal), Inquérito à Utilização de Tecnologias da Informação e da Comunicação pelas Famílias (Survey on the Use of Information and Communications Technology by Households)---2011

In the residential segment, data shows regional differences with regard to Internet penetration. Lisbon and Vale do Tejo remain the regions with the highest IAS penetration rate. In contrast, Internet penetration in the North, Alentejo, Centre regions and A.R. of Madeira were below the national average (58 per 100 inhabitants in 2011).

Regions	Mar. 07	Mar. 08	Mar. 09	Mar. 10	Mar. 11
North	32.7	45.5	47.3	51.3	55.1
Centre	41.1	39.6	41.4	49.4	52.5
Lisbon	46.4	54.1	55.4	62.1	68.0
Alentejo	37.1	38.0	38.5	43.7	48.8
Algarve	42.0	46.3	50.6	55.5	58.3
A.R. Azores	39.9	41.1	46.7	54.0	59.6
A.R. Madeira	40.9	44.7	49.7	54.0	55.0

Table 62 - Possession of Internet connections in households, by NUTS II

Unit: %

Source: INE (Statistics Portugal), Inquérito à Utilização de Tecnologias da Informação e da Comunicação pelas Famílias (Survey on the Use of Information and Communications Technology by Households) - 2007, 2008, 2009, 2010 and 2011

The regions reporting more significant growth were Lisbon (5.9 percentage points), the Autonomous Region of the Azores (5.6 percentage points) and Alentejo (5.1 percentage points), whereas all other regions saw Internet penetration grow between 2010 and 2011.

As regards the socio-economic characterization of the user, and according to *Barómetro de Telecomunicações – Rede Fixa* (Telecommunications Barometer – Fixed Network)⁵⁹, from Marktest, the IAS residential customer had above average net income, with the existence of the IAS in the home statistically associated with the household's social class (Cramer V coefficient of 0.459 in 4th quarter 2011).

⁵⁹ The *Barómetro de Telecomunicações* (Telecommunications Barometer) is a regular study conducted by Marktest for the Telecommunications sector.

The universe of the *Barómetro de Telecomunicações - Rede Fixa* (Telecommunications Barometer – Fixed Network) – comprises dwellings in Mainland Portugal or in the Autonomous Regions of Madeira and the Azores. A sample is compiled on a monthly basis which is proportional to and representative of the study's universe.

The universe of the *Barómetro de Telecomunicações – Rede Fixa* (Telecommunications Barometer – Fixed Network) – Rede Móvel comprises people aged 10 and over living in Mainland Portugal or in the Autonomous Regions of Madeira and the Azores; a sample is compiled on a monthly basis which is proportional to and representative of the study's universe, corresponding to 1,350 interviews per month.

Table 63 – IAS Penetration by level of social class

Social class	4Q2008	4Q2009	4Q2010	4Q2011
A – Alta	88.2	90.7	91.6	90.5
B – Upper middle	80.6	84.5	88.4	87.4
C1 – Middle	65.7	70.9 1	73.6	78.8 ↑
C2 – Lower Middle	47.2	54.7↑	59.8 ↑	64.7 ↑
D – Lower	20.2	27.8 1	25.8	28.0
Total	53.4	59.5↑	61.4	64.6个

Unit: %

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q2008-4Q2011

Base: Total homes with voice electronic communications service according to social class (excluding non-responses)

Note 1: Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate. **Note 2** The shaded proportions indicate those that are significantly different (horizontal) according to the test of two samples for proportions. Higher proportions are highlighted in light shading and lower proportions in dark shading. **Note 3:** The upward pointing arrow signals a statistically significant increase between the instances t-1 and t, and a downward arrow signals a statistically significant decrease, through the statistical test of the difference between two proportions for large and independent samples, considering a 95 percent confidence level.

Note 4: Social class A is the highest social class and D is the lowest.

Note 5: The Internet service includes fixed and/or mobile access at home.

Note 6: The social class variable is not included in the stratification groups of the dwellings sample (Marktest district and region). This information is purely indicative of the profile of the user.

Similarly, the larger the family size, the greater the likelihood of Internet access. More than 82 percent of households with more than three individuals had Internet at home. The existence of the IAS at home is statistically associated with family size (Cramer V coefficient of 0.368 in 4th guarter 2011).

Number of individuals in home	4Q2008	4Q2009	4Q2010	4Q2011
One individual	24.9	40.8 🕇	34.8↓	38.6
Two individuals	40.3	44.0	46.0	48.5
Three individuals	62.6	71.0 个	73.8	78.0 ↑
Four of more individuals	71.1	75.1 🕇	80.2 1	82.6
Total	53.4	59.5↑	61.4	64.6 ↑

Table 64 – IAS penetration by type of family structure

Unit: %

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q2008-4Q2011

Base: Total households with voice electronic communications service according to the type of family structure (excluding non-responses)

Note 1: Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate **Note 2:** The shaded proportions indicate those that are significantly different (horizontal) according to the test of 2 samples for proportions. Higher proportions are highlighted in light shading and lower proportions in dark shading. **Note 3** The upward pointing arrow signals a statistically significant increase between the instance t-1.

Note 4: The Internet service includes fixed and/or mobile access at home.

Note 5: The variable "number of individuals in the home" is not included in the stratification groups of the dwellings sample (Marktest district and region). This information is purely indicative of the profile of the user.

Meanwhile, Internet penetration is higher in lower age groups.

Age group	2006	2007	2008	2009	2010	2011
16 – 24	75.2	84.8	87.4	88.1	89.3	92.7
25 – 34	53.9	58.4	69.5	77.1	79.2	82.1
35 – 44	36.3	40.5	47.3	53.3	62.4	70.6
45 – 54	24.0	26.0	30.5	36.0	40.6	45.7
55 – 64	12.1	16.7	18.7	21.4	27.7	28.3
64 – 74	3.0	4.0	5.2	6.6	10.4	12.5

Table 65– Internet penetration by age group

Unit: %

Source: INE (Statistics Portugal), Inquérito à Utilização de Tecnologias da Informação e da Comunicação pelas Famílias (Survey on the Use of Information and Communications Technology by Households) – 2006- 2011

As regards the non-residential segment, about 95 percent of companies had access to the Internet and about 85.7 percent used broadband. The larger the size of the company, the greater the likelihood that it will have broadband Internet access.

Table 66 - Internet penetration by company size

	Internet	Broadband
10 to 49 staff	94,2	84,3
50 to 249 staff	100,0	92,9
250 and more staff	100,0	98,4
Total	95,0	85,7

Unit: %

Source: INE (Statistics Portugal), Inquérito à Utilização de Tecnologias da Informação e da Comunicação nas Empresas (Survey on the Use of Information and Communications Technology by Companies), 2011

By sector of activity, only lodging, restaurants and similar activities have Internet penetration significantly lower than 90 percent (79.4 percent). In the case of broadband (fixed or mobile), only the construction sector (76.8 percent) and lodging, restaurants and similar (74.5 percent) have penetration rates below 80 percent.

Table 67– Internet	penetration	by sector	of activity ⁽¹⁾
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	Internet	Broadband
C - Manufacturing	97.3	86.9
D+E - Electricity, gas, steam and air conditioning. Collection, treatment and distribution of water, sanitation, waste management and de-pollution	100.0	89.8
F - Construction	91.8	76.8
G - Wholesale and retail trade, repair of motor vehicles and motorcycles	97.1	88.1
H - Transportation and storage	100.0	99.3
I - Lodging, restaurants and similar	79.4	74.5
J - Activities of Information and communication	100.0	97.3
K - Financial and insurance services	100.0	97.6
L - Real estate	99.7	89.4
M - Consultancy, scientific, technical and similar activities	100.0	99.4
N - Administrative activities and support services	100.0	88.8
S - Other services (group 95.1)	100.0	100.0
Total	95.0	85.7

Unit: %

Source: INE (Statistics Portugal), Inquérito à Utilização de Tecnologias da Informação e da Comunicação nas Empresas (Survey on the Use of Information and Communications Technology by Companies), 2011

Note: Economic Activities according to CAE Rev.3

Fixed broadband users (FBB) vs. mobile broadband users (MBB)

As at the end of 2011, about 28 percent of individuals aged 15 or older who had broadband made use of both types of access fixed and mobile. This type of consumption has been growing significantly in recent years. The use of MBB on an exclusive basis among broadband customers has declined, falling to 31 percent at the end of 2011.



Graphic 68 - Broadband Internet service with fixed and/or mobile connection

Source: Marktest - *Barómetro de Telecomunicações* (Telecommunications Barometer) Study, 2Q2010-4Q2011 Base: Individuals aged 15 years or over with broadband Internet (excludes non-responses)

Note 1: Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate. Note 2: For this purpose the individual was considered as the unit of analysis since the service being analysed is the MBB. Therefore, the individual has MBB where they indicated that they have access to this service on their phone, using a data card or other device; and has FBB if they have this service at home.

There are differences between the characteristics of individuals who consume FBB and characteristics of individuals who use the MBB.

It was possible to identify three profiles of broadband use through cluster analysis⁶⁰. The table below illustrates the main characteristics identified in each obtained group, enabling comparison of the incidence of each characteristic in the respective group and in comparison to the total population.

Unit: %

⁶⁰ Cluster analysis makes it possible to identify groups sharing homogeneous behaviour, whereas use has been made of the non-hierarchical K-means method, based on the Euclidean distance and centroid criterion for the aggregation of responses. The methodology of this type of analysis is described in detail in Annex 2 of the State of Communications Report, 2009.

Table 68 – Profile of FBB users vs. MBB users

	GROUP 1			GROUP 2			GROUP 3		
	Non-user of broadband			FBB user simultaneously or	FBB user simultaneously or not, with MBB				
		% group	% overall		% group	% overall		% group	% overall
Broodbond upor	Without broadband	92.2	41.3	FBB only	34.9	24.0	MBB only	26.3	18.1
Broaubanu user				FBB+MBB	28.9	16.5			
Pegion	North Interior	25.6	21.3	Greater Lisbon	24.9	18.7	North Coast	21.4	18.5
Region				Greater Porto	12.7	10.5	North Interior	24.6	21.3
Size of household	Up to two individuals	84.3	45.3				Three or more individuals	77.4	54.7
Presence of children/elderly	Elderly	73.6	27.8				Children	57.7	36.1
	55 years or over	85.4	32.5	25-54 years	52.6	35.7	15-24 years	26.0	16.7
Age group							45-54 years	22.4	15.2
Level of education	Up to 1st cycle basic ed.	80.7	28.4	Secondary and higher education	83.3	44.3	2nd and 3rd cycle of basic education	57.8	27.3
	Retired/pensioners/unempl oyed	81.4	33.0	Upper management	7.2	3.0	Skilled workers	37.0	16.8
Professional	Stay-at-home	7.0	4.5	Middle Management	13.2	5.5	Unskilled workers	21.1	9.7
status and				Specialist technicians	9.2	4.0	Students	16.7	11.2
status				Small business owners	6.2	3.0			
				Service/retail/administrative employees	19.9	9.3			
				Students	15.1	11.2			
Social class	D	74.5	27.8	A/B/C1	92.1	41.9	C2	88.2	30.3

Source: This analysis is provided by ICP-ANACOM based on Marktest microdata - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q2011

Base: Individuals aged 15 years or over with access to voice electronic communications services (excludes non-responses).

Note 1: Cluster analysis using K-means method with three classes. According to the distance matrix between the groups, it is observed that groups 1 and 2 are set furthest apart from each other (2.118)

The identified groups have the following characteristics:

- the first group identified refers to individuals who do not use broadband. They are characterized especially by belonging to households consisting of one or two individuals, with the presence of elderly persons and a low social class (D). Respondent individuals from these households tend to be older individuals with lower education levels and unemployed, retired and or otherwise inactive in terms of employment;
- the second group comprises users who have FBB, whether or not simultaneously with the MBB. They are mostly individuals from households with a higher social class (A/B/C1). In terms of individual characteristics, they are reported as having high levels of education and being employed (senior and middle management, specialist technicians, small business owners and service employees) or students;
- finally, the last group refers to individuals who have only MBB. These individuals are more likely to belong to larger families, with the presence of children and have a strong tendency to belong to the lower middle class (C2). The most evident individual characteristics refer to intermediate levels of education (2nd and 3rd cycles), and employment status (student or skilled or unskilled employees).

According to the study of ICP-ANACOM on MBB in Portugal⁶¹, half of fixed Internet users have had the service for more than three years and more than half of MBB customers have had the service for less than two years. MBB via mobile phone, in particular, has more recent use.

⁶¹ This study results from the Survey on forms of Internet access that sought to understand how the different means of Internet access are currently used in Portugal; the means of Internet access considered were: a) fixed access, b) USB pen and or; c) a mobile phone. The survey work was conducted by Spirituc - Investigação Aplicada, Lda., using the CATI (Computer-Assisted Telephone Interviewing) method for fixed and mobile telephones, between 14 June and 20 July 2011, covering the resident population in Portugal aged 15 years or over. The sample for each type of access comprised 2,377 fixed Internet users; 1,368 Internet users with USB pen access; 1,067 Internet users with mobile telephone access. The results were weighted to provide representation of the Portuguese population, taking into account gender, age group, and the region of the country, according to the available information associated with each form of Internet access.

Table 69– Longevity of use of Internet access

	Fixed Internet	MBB through USB pen	MBB through mobile phone
[1 month; 6 months]	8.8	16.8	34.1
[6 months; 1 year]	14.8 *	19.9	29.3
[1 year; 2 years]	15.5 *	21.0	19.0
[2 years; 3 years]	10.9 *	21.5	6.3 *
> 3 years	50.0	20.8	11.4 *
Total	100	100	100

Unit: %

Source: ICP-ANACOM, based on the study *A banda larga móvel em Portugal* (Mobile broadband in Portugal) with data referring to July 2011 **Base:** Individuals aged 15 years or over according to type of Internet access (excludes non-responses)

Note: Key to symbols on estimates: (#) estimate is not reliable); (*) acceptable estimate; (no symbol) reliable estimate.

Users of optical fibre Internet access service (FTTH/B)

Socio-demographic and economic profiles were identified for the consumer of FTTH/B based on the estimation of an econometric discrete choice model – logit⁶² and for this purpose, use was

The logit models is based on the assumption that the relationship between P(y = 1|X) and the explanatory variables P(y = 1|X) is not linear and that the probabilities vary between 0 and 1. In this sense the model has the following structure: $P(y = 1|x_1, x_2, ..., x_k) = G(\beta_0 + \beta_1 x_1 + \dots + \beta_k x_k)$

where G refers to a function which satisfies the condition 0 < G(z) < 1, for any real value z . In the case of the logit model, G refers to the logistic distribution function: $G(z) = \frac{\exp(z)}{1 + \exp(z)}$

⁶² This type of model makes it possible to identify, in an integrated manner, the economic and socio-demographic factors that most strongly distinguish homes with optical fibre

^{access.} The dependent variable refers to a binary variable that can be 1 (where the household has fixed Internet access over optical fibre) or 0 (where the household does not have fixed Internet access over optical fibre). The following explanatory variables were considered: the discrete variables of Marktest region, social class, age group, level of education, employment status, family size, presence of children or elderly in the home, type of multiple play offer and satisfaction with the service and Internet access.

The estimation of the model's parameters uses the method of maximum likelihood. Only discrete variables were considered which are shown, in conjunction or individually, as determinant to the explanation of the model; whereas it is noted, that according to the logit model with robust variance (robust Huber/White estimator) all parameter signals are in line with theoretical expectations. The model's global specification test reveals no evidence of omitted

made of Marktest's *Barómetro de Telecomunicações* (Telecommunications Barometer), with reference to 2nd quarter 2011⁶³.

The analysis made shows that⁶⁴:

- Among households with fixed Internet access, there was increased likelihood of optical fibre (FTTH/B) access in homes in the regions of Greater Lisbon, Greater Porto and Centre Coast compared to households located in the North Interior. Optical fibre Internet access is not available evenly throughout the territory, a fact that strongly influences this result.
- Social class is another of the characteristics which distinguishes households that access
 fixed Internet with optical fibre (FTTH/B) from households with other accesses. The
 probability of having optical fibre access (FTTH/B) among households with fixed Internet
 access was higher in households of higher social class. Likelihood of such access
 increases, the higher the social class.
- Households that have bundled services are more likely to have optical fibre Internet access (FTTH/B), especially triple play followed by double play STVS and Internet.
- Customers with IAS over optical fibre (FTTH/B) were more likely to be satisfied with the network availability/quality of their fixed Internet access.

explanatory variables that are significant in explaining the dependent variable and the Pearson and Hosmer-Lemeshow adjustment tests show that the model is fitting to the data.

⁶³ The unit of observation used refers to the home and the sample is represented by the totality of homes with fixed Internet access, who know what type of access they have and providing response to the questions selected in the final model, making a total of 3,319 sample cases.

⁶⁴ This analysis is provided by ICP-ANACOM based on Marktest microdata – *Barómetro de Telecomunicações* (Telecommunications Barometer) Study, 2nd half 2011.

Profile of mobile broadband (MBB) user according to the equipment used to access the service

According to data from Marktest's *Barómetro de Telecomunicações* (Telecommunications Barometer), as at the end of 2011, about 34 percent of individuals aged 15 or over had the MBB service, mainly accessed by devices other than mobile telephones.



Graphic 69 - Form of access to MBB service

Unit: %

Source: Marktest - *Barómetro de Telecomunicações* (Telecommunications Barometer), 4Q2011 **Base:** Individuals aged 15 years or over with voice electronic communications service (excluding non-responses) **Note:** Key to symbols on estimates: (#) estimate is not reliable); (*) acceptable estimate; (no symbol) reliable estimate.

MBB user profiles were identified according to the form of access^{65,}

Availability of EC services: Fixed telephone service, Internet access service at home and TV subscription service.

⁶⁵ Firstly, an econometric discrete choice model was estimated – logit to identify the profile of the individual with MBB access. The dependent variable is binary with the value 1 (where the individual aged 15 or over has MBB) and 0 (where there is no access to MBB). The following explanatory variables were considered a priori:

Socio-demographic and economic characteristics: Marktest region, social class, gender, age, level of education, employment status, family size, presence of children or elderly at home;

Taking this analysis with the results of the two models, it is concluded that⁶⁶:

- there is a greater penetration of MBB among younger users, including access to MBB through mobile telephones;
- individuals using MBB tend to belong to a higher social class. But social class is not significant in distinguishing the type of equipment used;

The logit models is based on the assumption that the relationship between P(y = 1|X) and the explanatory variables $X = (x_1 x_2 \dots x_k)$ is not linear and that the probabilities vary between 0 and 1. In this sense the model has the following structure: $P(y = 1|x_1, x_2, \dots, x_k) = G(\beta_0 + \beta_1 x_1 + \dots + \beta_k x_k)$ where G refers to a function which satisfies the condition 0 < G(z) < 1, for any real value z . In the case of the logit model, G refers to the logistic distribution function: $G(z) = \frac{\exp(z)}{1 + \exp(z)}$.

The subsample considered consists of individuals aged 15 years or over providing response to the questions considered in the final model, which totals 3,628 sample cases.

Secondly, an econometric discrete choice model was estimated – multinomial logit to distinguish the profile of individuals with MBB access according to the type of access: (i) through mobile telephone only (ii) through other devices only (connection via cards/modem) other than mobile telephone (iii) through mobile telephone and other devices.

This type of model makes it possible to identify, in an integrated manner, the factors that most strongly distinguish MBB users according to type of equipment used in access. The dependent variable refers to a polytomous variable with the following possible values: 1 – where the individual uses the MBB service through mobile telephone only; 2 – where the individual uses the MBB service only through other devices other than the mobile telephone; 3 – where the individual uses the MBB service through mobile telephone; 3 – where the individual uses the MBB service through mobile telephone and other mobile devices. The explanatory variables considered a priori are similar to those considered in the model explained in the previous footnote.

The most appropriate model for this type of information is the multinomial logit model, given that the dependent variable refers to a discrete nominal variable. A reference category is selected and the probability of an individual belonging to the remaining dependent variable groups (2, 3, k) is compared with the probability of an individual belonging to this reference category (1).

The subsample considered consists of individuals aged 15 years or over with MBB and providing response to the questions considered in the final model, which totals 1,311 sample cases.

⁶⁶ This analysis is provided by ICP-ANACOM based on Marktest microdata – *Barómetro de Telecomunicações* (Telecommunications Barometer) Study with reference to 4th quarter of 2011.

- no significant regional differences are reported, either in terms of MBB penetration nor the type of equipment used;
- use of MBB is directly related to the educational level of the individual. Propensity to have MBB increases in line with level of education. However, level of education does not provide a distinction between the users of the various types of equipment considered;
- in terms of employment status, it can be seen that employees in middle or senior management and specialist staff, as well as students, are more likely to have MBB;
- individuals belonging to larger families are more likely to use MBB. The difference is even more significant with regard to the use of MBB access equipment other than mobile telephones (i.e. cards/modem);
- individuals who do not have fixed Internet or FTS at home are more likely to use MBB. In particular, users of other mobile devices other than mobile telephones (such as cards/modem) are less likely to have fixed Internet at home.

Furthermore, according to ICP-ANACOM's study "*A banda larga móvel em Portugal*" (Mobile broadband in Portugal), the vast majority of MBB users have post-paid tariffs, especially in the case of customers using MBB through USB pen (70 percent). Customers using MBB through mobile telephone are the ones that make most use of pre-paid tariffs, both in terms of number of hours (16 percent) and in terms of traffic (11 percent).

	MBB through USB pen	MBB through mobile telephone
Pre-payment by the number of hours	13.0	16.3
Prepayment by amount of GB	3.2 *	10.8
Payment at end of month	69.6	53.5
Company pays	9.8	10.4
Don't know/no response	4.3	9.1
Total	100	100

Table 70 – MBB Internet access payment methods

Unit: %

Source: ICP-ANACOM, based on the study A banda larga móvel em Portugal (Mobile broadband in Portugal) with data for July 2011

Base: Individuals aged 15 years or over according to the type of MBB access

Note: Key to symbols on estimates: (#) estimate is not reliable); (*) acceptable estimate; (no symbol) reliable estimate.

The location of use of MBB through USB pen varies according to whether the user also has fixed Internet access. About three out of four customers who only have USB pen tend to use it at home. Customers who have both forms of accesses (fixed Internet and MBB through USB pen USB) tend to use USB pen outside the home (60 percent use outside the home only).

Table 71– Location of use of Internet access through USB pen

	Total USB pen accesses	USB pen access only	USB pen access, supplemented by fixed access
Only at home	14.5	26.8	7.5 *
Mainly at home	28.1	49.6	9.7 *
Mainly away from home	20.2	17.2 *	21.6
Only away from home	35.5	5.4 *	59.0
Don't know/no response	1.7	1.1	2.3
Total	100.0	100.0	100.0

Unit: %

Source: ICP-ANACOM, based on the study A banda larga móvel em Portugal (Mobile broadband in Portugal) with data for July 2011

Base: Individuals aged 15 years or over according to USB pen access coupled with fixed access

Note: Key to symbols on estimates: (#) estimate is not reliable); (*) acceptable estimate; (no symbol) reliable estimate.

4.4.2. The usage profile of the IAS

Most IAS users used broadband. As at the end of 2011, 98.8 percent of fixed Internet access customers were FBB customers.



Graphic 70 - Distribution of fixed IAS customers by bandwidth in 2011

Unit: % Source: ICP-ANACOM

Meanwhile, according to previously cited information from INE (Statistics Portugal), at the end of 1st quarter 2011, 95 percent of companies with more than 10 employees had Internet and 85.7 percent used broadband⁶⁷.

In terms of the access speeds chosen by users, in 2011, the majority of FBB customers (71 percent) used accesses which exceeded 10 Mbps. About 33 percent had accesses above 20 Mbps and 27 percent used accesses with speeds between 2 Mbps and 10 Mbps.

⁶⁷ See INE (Statistics Portugal), *Inquérito à Utilização de Tecnologias da Informação e da Comunicação nas Empresas* (Survey on the Use of Information and Communications Technology by Companies) – 2011.

Graphic 71 – FBB accesses by download speed



Unit: % Source: ICP-ANACOM

The number of FBB Internet accesses by class of service (defined in terms of downstream speeds) varies according to supporting technology. At the end of 2011, optical fibre (FTTH/B) and cable modem with EuroDOCSIS 3.0 or equivalent had accesses with the highest speeds. The largest percentage of leased lines comprises accesses up to 2 Mbps.



Graphic 72 - FBB accesses by technology and download speed

Unit: %

Source: ICP-ANACOM

In the EU, an average of 42 percent of accesses have capacity equal to or greater than 10 Mbps. In the majority of the countries considered, the access speed with most use is in the range between 2 and 10 Mbps. Portugal had the second highest proportion of accesses equal to or greater than 10 Mbps (74 percent) as at the end of 2011.



Graphic 73 - International comparison of FBB access by download speed, July 2011

Unit: %

Source: EC, COCOM, Broadband access in the EU: situation at 1 July 2011

Objectives of Internet use

Referring to the use which each individual makes of information and communication technologies (ICT), the table below details activities reported on the Internet, both fixed and mobile, in relation to communication practices.

Table 72 – Activities conducted on the Internet, related to communication practices

	2006	2007	2008	2009	2010	2011
Use search engine	37.7	42.2	43.9	48.2	52.4	57.7
Send email with file attachments	33.2	37.0	38.4	41.8	45.0	50.3
Post messages on chat	11.4	23.7	18.4	24.2	37.7	32.4
Use file sharing programme	9.0	11.4	13.8	12.6	14.2	14.2
Use Internet to make telephone calls	7.8	11.5	15.5	17.1	18.7	20.2
Create web pages	5.2	7.5	7.6	9.0	8.7	10.0

Unit: %

Source: INE (Statistics Portugal)/UMIC (Knowledge Society Agency), Inquérito à Utilização de Tecnologias da Informação e da Comunicação pelas Famílias (Survey on the Use of Information and Communications Technology by Households), 2006-2011

In terms of frequency of Internet service use, most users connect to the Internet every day or almost every day (75.2 percent). Over 17 percent percentage of Internet users connect to the Internet at least once per week.

Table 73 – Frequency of use of the Internet service

	Internet user
Every or almost every day	75.2
As least once per week	17.4
At least once per month	5.8
Less than once per month	1.5

Unit: %

Source: INE (Statistics Portugal), Inquérito à Utilização de Tecnologias da Informação e da Comunicação pelas Famílias (Survey on the Use of Information and Communications Technology by Households), 2011

Base: Individuals aged between 16 and 74 years, residing in the national territory, who used the Internet in the first three months of the year.

ICP-ANACOM's study "A banda larga móvel em Portugal" (Mobile broadband in Portugal), distinguishes frequency of Internet use by type of access. Over 90 percent of fixed Internet users use the service on a daily basis and 14 percent have it permanently connected. MBB use

is less frequent. 63 percent of customers with USB pen access and 54 percent of customers with access through mobile telephones use the MBB on a daily basis.





Unit: %

Source: ICP-ANACOM, based on the study "A banda larga móvel em Portugal" (Mobile broadband in Portugal) with data referring to July 2011

Base: Individuals aged 15 years or over according to type of access

4.4.3. Barriers to take-up of the service

At the end of 2010, as in previous years, the main reason given for not having Internet was lack of usefulness (27.8 percent) and secondly, lack of interest (20.2 percent). About 16.1 percent reported that they do not know how to use the service and given in fourth place as a barrier to take up, the price of the service (13.3 percent).

Table 74 --- Main reasons for not having Internet access at home

	4Q2010	4Q2011
It is not necessary	32.5	27.8 🗸
Do not want / dislike / not interested	16.8	20.2 ↑
Do not know how to use / do not understand	11.2	16.1 ↑
Very expensive / financial difficulties	9.8	13.3 ↑
Do not have a computer	9.3	7.9
Do not use	8.4	8.6
[Other]	7.4	5.7 *
[DON'T KNOW/NO RESPONSE]	9.1	2.8

Unit: %

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q2010 and 4Q2011

Base: Total households without access to Internet service

Note 1: The following key is used: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate.

Note 2: Multiple choice question.

Note 3: The upward pointing arrow signals a statistically significant increase between the instance t-1 and t and a downward arrow signals a statistically significant decrease between these two instances.

It should be noted that the main reasons given above are identical to those given by EU consumers for not having Internet. However, "lack of interest" and "costs associated with the Internet" are more important barriers among European consumers.

Graphic 75 - Main reasons for not having Internet access at home in the EU27



Unit: %

Source: EC, E-communications household survey, 2011

With regard specifically to the reasons cited for not having mobile Internet access, the most mentioned reason is lack of interest (26.9 percent). Only 5.7 percent refer to pricing.

	4Q10	4Q11
No need of mobile Internet	34.9	22.0↓
No need to access the Internet	13.7	8.5↓
Do not know how to use / do not understand	7.8	11.2 1
Do not want / not interested / do not like	6.8	26.9 🕇
Not interested in internet / do not want	5.9	3.7↓
More expensive	4.8	5.7 *
Do not use Internet	4.4	7.6 1
Do not have a computer	3.8	2.7↓
Other	6.7 *	7.0 *

Table 75 – Main reasons t	for not	having mobile	Internet access
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Unit: %

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q2010 and 4Q2011

Base: Individuals aged 15 years or over without mobile Internet access

Note 1: Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate.

Note 2: Multiple choice question.

Note 3: The upward pointing arrow signals a statistically significant increase between the instance t-1 and t and a downward arrow signals a statistically significant decrease between these two instances.

4.4.4. Level of service use: evolution in number of customers, access, traffic and revenues

A description is given below of the evolution reported in the level of use of the service measured in terms of customers, accesses and revenues.

Internet access customers

As at the end of 2011, there were about 2.2 million customers of the Internet access service at a fixed location, 5.1 percent more than in 2010.

There were around 11.2 million users **eligible** to use MBB services⁶⁸, of which 4.2 million **actually used** services characteristic of 3rd generation (i.e. video telephony, broadband data transmission, mobile TV, etc.) in the last month of 2011. Of these 2.9 million accessed the Internet using MBB.

Table 76 – Number of customers

	2010	2011	Var. (%) 2010/2011	Var. (%) annual average 2007/2011	Var. (%) accumulat ed 2007/2011
Total fixed Internet customers	2.104	2,212	5.1 %	8.2 %	37.3 %
dial-up offers	29	26	-10.1 %	-28.4 %	-73.8 %
FBB access	2,075	2,186	5.3 %	9.7 %	44.6 %
MBB users (eligible)	10,496	11,171	6.4%		
of which active users of 3G services, upgrades and equivalent standards	4,078	4 ,54	1.8%		
of which users of MBB Internet access service	2,566	2,924	14.0%	45.1%	343%

Units: thousands of customers, %

Source: ICP-ANACOM

The number of FBB customers rose by 5 percent in 2011, whereas dial-up access customers declined by about 10 percent. 98.8 percent of fixed Internet access customers were FBB customers, 0.2 percentage points more than that observed in 2010.

⁶⁸ In 2010, a new set of Mobile Service indicators on entered into force, as approved by ICP-ANACOM on 8.07.2009. The descriptions and definitions of the indicators were changed in relation to previously published reports. To see the updated definitions of the indicators, see ICP-ANACOM's website: Homepage > Statistics > Operators / providers - informação periódica a remeter à ANACOM > Questionários trimestrais por serviço > Serviços Móveis > Mobile Services - Determination of 08.07.2009, as amended by determinations of 17.06.2010 and 19.08.2010 (http://www.anacom.pt/render.jsp?contentId=963861).

Due to the entry into force of the new questionnaire, it is not always possible to make comparisons with previous periods.

In 2011, there were around 111 thousand new FBB customers, an increase which lags the average growth reported over the 2007/2011 period.

According to the available information, the number of customers will continue to grow over the short term: around 9 percent of homes without IAS expressed an intention to subscribe to the service in coming months.

	4Q2007	4Q2008	4Q2009	4Q2010	4Q2011
Will definitely take up	5.0	5.7	4.4 *	3.1 *	2.6
Will perhaps take up	13.9	11 7 🗸	904	74	6.4
	70.0	70.4	0.0 •		07.0
Will definitely not take up	76.8	79.1	83.8	86.6	87.8
[Don't know/No response]	4.3	3.4	2.8	2.8	3.3
Total	100	100	100	100	100

	Table 77	 Intent to take ι 	p Internet access	s service over the	e next three months
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Unit: %

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q2010 and 4Q2011

Base: Total of households without access to Internet service

Note 1: Key to symbols on estimates: (#) Unreliable estimate; (*)

Note 2: The upward pointing arrow signals a statistically significant increase between the instance t-1 and t and a downward arrow signals a statistically significant decrease between these two instances.

Physical access to broadband Internet at a fixed location

At the end of 2011, there were 2.2 million accesses to broadband Internet at a fixed location, 5.3 percent more than in the previous year.

Table 78 – Number of FBB accesses, by type of access

	2010	2011	Var. (%) 2010/2011	Var. (%) annual average 2007/2011	Var. (%) accumulat ed 2007/2011
Total FBB accesses	2,127	2,240	5.3%	8.2 %	37.3 %
ADSL access	1,112	1,099	-1.2%	4.3%	18.4%
% do total de FBB	52.3%	49.1%			
Cable modem	860	903	5.0%	10.5%	49.0%
% do total de FBB	40.4%	40.3%			
Optical fibre access (FTTH/B)	130	237	81.4%		
% do total de FBB	6.1%	10.6%			
Other access technologies	25	2	-93.7%	-43.7%	-89.9%
% do total de FBB	1.2%	0.1%			

Units: thousands of accesses; %

Source: ICP-ANACOM

The evolution reported in the number of broadband Internet accesses in 2011 is below lower limit of the forecast range resulting from the historical trend and estimated seasonal adjustments.



Graphic 76 - Evolution in number of FBB accesses (all technologies) and forecast range

Unit: thousands of accesses

Source: ICP-ANACOM

Note 1: * Forecast range with a significance level of 95 percent.

Note 2: A multiple linear regression model was used with the following significant independent variables at a 95 percent confidence level: linear trend up to 4th quarter 2007, linear trend up from 4th quarter 2007 up to 3rd quarter 2008 and linear trend from 3rd quarter 3009, with the latter coinciding with the greatest offer of services in bundles: $Y = -207768,402+67303,388t1+61872,490t2+58995,726t^3$. The adjusted R² is 0.99.

The indicators compiles by ICP-ANACOM have been altered so that this analysis is now performed in terms of ADSL accesses.

Analyzing the geographical distribution of broadband accesses, it appears that the regions of Lisbon and the North were those with higher percentages of accesses, making up more than 60 percent of total accesses. The autonomous regions of Madeira and the Azores were the regions with the lowest number of broadband Internet accesses.

Table 79 – Number of access and	penetration of broadband IAS in 4Q2011
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			Residential accesses			Non-residential accesses	
			N.º de residential accesses	Residential accesses/100 private households	Residential accesses/ 100 inhabitants	No. of non- residential accesses	Non-residential accesses /100 establishments*
North			556	41.8	14.9	102	73.0
Centre			342	37.8	14.4	64	71.5
Lisbon			731	63.7	25.7	88	83.2
Alentejo			109	35.9	14.5	19	65.4
Algarve			95	52.0	21.7	18	73.5
Autonomous Azores	Region	of	50	60.6	20.2	6	77.0
Autonomous Madeira	Region	of	52	55.5	20.8	7	82.9
Total			1934	47.8	18.2	306	75.1

Units: thousands of accesses; accesses per 100 households; accesses per 100 inhabitants; accesses per 100 establishments

Source: ICP-ANACOM. INE (Statistics Portugal)- Private households (No.) by Place of residence (based on 2011 Census), GEP - Gabinete de Estratégia e Planeamentog (Office of Strategy and Planning), Ministry for Solidarity and Social Security - Personnel 2009.

Note: According to the GEP, an establishment is considered as the local unit which, under single ownership or control, solely or principally produces a homogeneous group of goods or services at a single site.

Meanwhile, it appears that 48 percent of IAS broadband accesses are concentrated in Lisbon (37.8 percent of subscribers), and the North region (28.7 percent).

Non-residential customers are more concentrated in the northern region (33.5 percent) and in the region of Lisbon (28.8 percent).



Graphic 77 – Distribution of accesses per NUTS II – 2011



The penetration rate of residential FBB accesses in terms of private households was higher in the region of Lisbon and the Autonomous Region of the Azores, with values exceeding 60 accesses per 100 households. The North and Centre have values below the national average (47.8 accesses per 100 households).

In terms of penetration of residential accesses in terms of population, the regions of Lisbon and Algarve were those with higher values, exceeding 21 lines per 100 inhabitants.

As regards penetration of non-residential accesses, the regions of Lisbon and Madeira had the highest values with about 83 accesses per 100 establishments.

Even while ADSL remains the main access technology, as since the end of 2004, its relative weight decreased in 2011. The predominance of ADSL is explained by its greater geographic availability, as well as by the development of offers based on local loop unbundling.



Graphic 78 - Evolution of the number of FBB accesses

Unit: thousands of accesses

Source: ICP-ANACOM

In 2011, the number of ADSL accesses fell by 1.2 percent. The evolution reported in the number of ADSL accesses in 2011 was below the lower limit of the forecast range resulting from the historical trend- a growth trend is evident, with a slight slowdown (negative quadratic trend). This evolution may stem from developments with other forms of access, including those that allow higher download speeds.



Graphic 79 - Number of ADSL accesses and forecast range

Unit: thousands of accesses

Source: ICP-ANACOM

Note 1: * Forecast range with a significance level of 95 percent.

Note 2: A regression model with quadratic trend was used, with the following independent significant variables at a confidence level of 95 percent: dummies in respect of the change of structure from 4th quarter of 2007 and as associated with competition from other technology (including optical fibre) from 3rd quarter 2010, both with quadratic trend (Y= 1 153 488 - 44 185,2t + 2073,37t² + (-817037 + 132843,1t - 4886,06 t²)*D4T2007 + (34 597,27t - 1749,14t²)*D3T2010. The adjusted R² is 0.999.

Despite the prevalence of this technology, penetration of DSL in Portugal was the lowest in the EU27.



Graphic 80 - Broadband access via DSL per 100 inhabitants in the EU27 in July 2011

Unit: accesses per 100 inhabitants

Source: EC, COCOM, Broadband access in the EU: situation at 1 July 2011

Internet access via cable modem grew 5 percent in 2011, below the average of recent years, although higher than the growth rate reported for DSL. However, the number of broadband Internet accesses using cable modem was slightly below the forecast range resulting from the historical trend.



Graphic 81 - Evolution in number of accesses using cable modem and forecast range

Unit: thousands of accesses

Source: ICP-ANACOM

Note 1: * Forecast range with a significance level of 95 percent.

Note 2: Stationary series modelling was used – primary consecutive differences after log transformation – with significant lags evident of two and three periods of the dependent variable: $\Delta lnY_t=0,0067+0,4586\Delta lnY_{t-2}+0,24227\Delta lnY_{t-3}$ with adjusted R² of 0.92.

Penetration of cable modem access was relatively high in Portugal, with the country ranked 6th.


Graphic 82 - Cable modem accesses per 100 inhabitants in the EU27, July 2011

Unit: accesses per 100 inhabitants

Source: EC, COCOM, Broadband access in the EU: situation at 1 July 2011

Other access technologies, representing 11 percent of total broadband accesses, increased by approximately 53.6 percent compared to the previous year.

This growth is mainly explained by the growth of Internet access offers supported over optical fibre (FTTH/B). At the end of 2011 there were 237 thousand Internet accesses using optical fibre (FTTH/B), an increase of 81.4 percent over the previous year. This evolution reflects the life cycle of offers supported over optical fibre (FTTH/B) which, despite being launched in 2008, have been given new impetus with the appearance of offers from the incumbent operator at the end of 2nd quarter 2009.

Products supported over FTTH/B accounted for most new customers in net terms from 2nd quarter 2010.



Graphic 83 – Evolution in number of residential customers using optical fibre (FTTH/B) and forecast range

Unit: thousands of accesses

Source: ICP-ANACOM

Note 1: * Forecast range with a significance level of 95 percent.

Note 2: A regression model was used with quadratic trend and with the following expression: $Y = 16392,14 - 11970,53 t + 1791,62 t^2$. The adjusted R2 of the model is 0.99.

The penetration of optical fibre access (FTTH/B) in Portugal, in July 2011, was reported as 1.6 per 100 inhabitants, more than double the European average (0.59 percent).



Graphic 84 - FTTH accesses per 100 inhabitants in the EU27 in July 2011

Unit: accesses per 100 inhabitants

Source: EC, COCOM, Broadband access in the EU: situation at 1 July 2011

Note: Data not available for the United Kingdom, Slovenia, Cyprus and Slovakia.

As can be seen in the chart above, apart from Denmark, Sweden and the Baltic states, optical fibre remains relatively undeveloped in most countries of the EU27.

Users of mobile broadband (MBB)

The number of active users of the IAS with MBB grew by about 14 percent during 2011.

As at the end of 2011, there were about 1.1 million active users with connections using cards/modem, a decrease of 11.3 percent over the previous year.

Table 80 - Number of MBB users

	2008	2009	2010	2011	Var. (%) 2010/2011
Number of users with MBB Internet access, active at end of reported period.	1,161	2,170	2,566	2,924	14,0 %
Of which had connections using cards/modem	904	1,197	1,279	1,134	-11,3%

Units: 1 user; %

Source: ICP-ANACOM





Unit: thousands

Source: ICP-ANACOM

Evolution in the number of users of this service has been influenced not only by the commercial policy of the operators (see section on the offer of this service), but also by government policies to promote the information society which, in partnership with operators, provided students,

teachers and trainees with portable computers and MBB Internet access at discounted prices. With the suspension of the program at the end of 2010, consecutive declines have been reported in the number of active users with MBB Internet access through cards. The percentage of active users with MBB Internet access using cards, as proportion of total MBB Internet users, has therefore been falling (39 percent at end of 2011).

Traffic

The traffic originated by FBB customers in 2011 totalled 745 million GB, representing an increase of 30.4 percent over the previous year. Traffic generated by MBB customers increased by about 16.7 percent in 2011, totalling 34.1 million GB, of which 32.7 million were generated by mobile Internet access users with cards/modem.

Table 81 – Traffic originated by broadband customers

	2010	2011	Var. (%) 2010/2011
Total traffic of broadband Internet access service	600 673 683	778 984 953	29,7%
Fixed Internet traffic	571 466 695	744 888 629	30,4%
Mobile Internet traffic	29 206 988	34 096 324	16,7%
of which via cards	28 666 553	32 787 212	14,4%

Units: GB; %

Source: ICP-ANACOM

In 2011, each FBB customer generated an average of 29.5 GB traffic per month, the highest reported to date, and 21 percent higher than the corresponding value from 2010.

	2008	2009	2010	2011	Var. (%) 2010/2011
Average traffic of broadband Internet access service per user/session					
MB per fixed Internet user (monthly)	11,433	19,198	24,368	29,450	20,9%
MB per active mobile Internet user (monthly)	1,199	908	1,052	1,060	0,7%
of which via cards			1,906	2,319	21,7%
MB per MBB session	27	27	30	25	-15,5%

Table 82 – Evolution in broadband Internet access traffic per user/session

Units: MB; %

Source: ICP-ANACOM

No significant alteration was reported in terms of monthly traffic per active MBB user, compared to 2010, while Internet traffic per session declined by about 15.5 percent,

Average traffic generated per customers with actual MBB use (1.1 GB per customer per month) is significantly lower than the average traffic of fixed broadband.

The traffic generated by active MBB Internet access customers using cards/modem, in 2011, on average terms (2.3 GB per customer per month), was also significantly lower than average FBB traffic.



Graphic 86 - Average monthly traffic per broadband Internet customer (fixed and mobile) in GB

Unit: GB Source: ICP-ANACOM

The difference between the traffic generated by FBB and MBB customers is due to the lower speeds and lower traffic limits in MBB offers, and to the pricing of each technology and the different user and usage profiles associated with the two types of Internet access.

Revenues from service

In 2011, total revenues from stand-alone IAS and from bundles of services which include IAS totalled 986 million euros. Of this amount, approximately 213.8 million euros (21.7 percent) corresponds to stand-alone offers, 88.1 million (8.9 percent) stems from double play offers and the remaining 684.6 million euros (69.4 percent) is associated with triple play offers.

2011 revenues are not comparable with revenues published in previous years. ICP-ANACOM altered the criteria for reporting revenues of services included in bundles of services and according to the new definition; where the service is offered in a bundle of services revenue is recorded as revenue of the bundle of services and not separately.

	Jan-Dec 2011	
Internet only	213, 809	21,7%
2 Play		
Fixed Internet + TV	41, 171	4,2%
Fixed Internet + fixed telephone	46, 937	4,8%
3 Play		
Fixed Internet + TV + fixed telephone	684, 572	69,4%
Total	986, 489	100%

Table 83 – Revenues from fixed Internet access service (accumulated since the beginning of the year)

Units: thousands of euros, %

Source: ICP-ANACOM

Revenue from the mobile Internet access service amounted to 355 million euros in 2011, a value 5.7 percent lower than in the previous year.

Table 84 – Separable revenues from mobile Internet access service (accumulated since the beginning of the year)

	2010	2011	Annual variation 2010/2011
Revenues from mobile Internet access (separable)	376,592	355,015	-5.7%
Of which Revenues from Internet access in roaming out	16,550	23,684	43.1%

Units: thousands of euros, %

Source: ICP-ANACOM

4.4.5. Consumer evaluation

According to the results of Marktest's *Barómetro de Telecomunicações* (Telecommunications Barometer), and in line with previous years, consumer perceptions as to the quality of fixed Internet services is generally positive, although about 19 percent of respondents rated it with

values below seven (on a scale of 1 to 10 where 1 means "very dissatisfied" and 10 means "very satisfied").

4Q2008	4Q2009	4Q2010	4Q2011
8.6	9.5	6.6 🗸	4.8 🗸
18.3	18.8	14.8 🗸	14.4
46.6	42.2 🗸	42.6	45.6 🕇
26.5	29.5 🕇	36.0 🕇	35.2
100	100	100	100
	4Q2008 8.6 18.3 46.6 26.5 100	4Q2008 4Q2009 8.6 9.5 18.3 18.8 46.6 42.2↓ 26.5 29.5↑ 100 100	4Q2008 4Q2009 4Q2010 8.6 9.5 6.6↓ 18.3 18.8 14.8↓ 46.6 42.2↓ 42.6 26.5 29.5↑ 36.0↑ 100 100 100

Table 85 – Level of overall satisfaction with IAS which is provided by the operator

Unit: %

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4th quarters from 2008 to 2011

Base: Total homes with voice electronic communications service and with internet access service (excluding non-responses)

Note 1: Scale of original measurement: 1: Completely dissatisfied; 10: Totally satisfied.

Note 2: Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate.

Note 3: The upward pointing arrow signals a statistically significant increase between the instance t-1 and t and a downward arrow signals a statistically significant decrease between these two instances.

The level of overall satisfaction with mobile Internet access providers is reported at 7.4. The level of satisfaction reported with regard to transmission speed is slightly lower (around 7.0). When compared to fixed broadband service, the mobile service has a lower level of satisfaction.

Type of Internet access Assessment criteria		4Q2010	4Q2011
Fixed Internet only	Overall satisfaction with the provider	7.8	7.9
Fixed internet only	Satisfaction with the connection speed	7.5	7.8 🕇
	Overall satisfaction with the provider	7.5	7.4
	Satisfaction with the connection speed	7.1	7.0
Fixed Internet and mobile	Overall satisfaction with the provider	7.6	8.0 1
Internet	Satisfaction with the connection speed	7.4	7.8 🕇

Table 86 – Average level of satisfaction (overall and speed) by type of Internet access

Unit: scale of 1 (totally dissatisfied) to 10 (totally satisfied)

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q2010 and 4Q2011

Base: Total homes with voice electronic communications service and with internet access service (excluding non-responses)

Note 1: The maximum absolute margins of error in averages are: 0.13 for homes with fixed Internet only; 0.18 for homes with mobile Internet.

Note 2: The upward pointing arrow signals a statistically significant increase between the instance t-1 and t and a downward arrow signals a statistically significant decrease between these two instances.

In 2011, the factor that gave rise to a lower level of satisfaction (on average) was "pricing". However, it appears that, on average, the level of satisfaction is high – ratings above 7 in all evaluated criteria (on a scale of 1 to 10 where 1 means "very dissatisfied" and 10 means "very satisfied").

Table 87 – Average level of satisfaction with the IAS as provided by the operator according to different criteria

Satisfaction with the provider's overall service	4Q2009	4Q2010	4Q2011
Availability/quality of the network	7.3	7.6 ↑	7.7 ↑
Pricing	6.8	7.0 ↑	7.0
Customer service	7.0	7.3 ↑	7.5 ↑
Diversity of products and services	7.3	7.6 ↑	7.7 ↑
Connection speed	7.0	7.4 ↑	7.6 ↑
Overall service of provider	7.3	7.7↑	7.8

Unit: scale of 1 (totally dissatisfied) to 10 (totally satisfied)

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer), 4Q2009 to 2011

Base: Total homes with voice electronic communications service and with internet access service (excluding non-responses)

Note 1: The absolute margins of error in the averages on a scale of 1 to 10 are less than 0.1.

Note 2: The upward pointing arrow signals a statistically significant increase between the instance t-1 and t and a downward arrow signals a statistically significant decrease between these two instances.

Characterization of residential consumer that is less satisfied with Internet access service (IAS)

In order to characterize the less satisfied residential IAS consumer, a less satisfied customer was considered as a customer who expresses satisfaction with the overall service provided by their main IAS provider of less than or equal to five points (on a scale of 1 "totally dissatisfied" to 10 "totally satisfied"). In contrast, the more satisfied customer refers to customers expressing satisfaction with more than five points.

According to data from the 2nd half of 2011 in Marktest's *Barómetro de Telecomunicações* (Telecommunications Barometer), it appears that the less satisfied group represents 12.3 percent of households with IAS⁶⁹.

⁶⁹ Households that did not respond when quizzed about the level of overall satisfaction with the IAS provider were not considered.

On average less satisfied consumers rated the service with 4.1 points. The contracted connection speed and pricing were the factors with the lowest average rating in this group.





Unit: scale 1 (Totally dissatisfied) to 10 (Totally satisfied)

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 2nd half 2011 Base: Homes with voice electronic communications service and with internet access service (excluding non-responses)

Note 1: (*) Average satisfaction with connection speed refers to the 4th quarter 2011.

Note 2: The absolute margins of error in the averages on a scale of 1 to 10 are less than 0.06 for group of more satisfied customers and less than 0.20 for the group of less satisfied customers.

The contracted connection speed again presents the greatest discrepancy in the evaluation between the two groups. It is noted that the distribution of contracted connection speed among less satisfied customers and more satisfied customers is not the same⁷⁰. The less satisfied customers have lower contracted speeds, especially 3 to 4 Mbps, while more satisfied customers have higher connection speeds, especially in the 10 to 15 Mbps range.

⁷⁰ The hypothesis of equality of distributions is rejected according to the chi-square test of homogeneity.



Graphic 88 – Distribution of contracted connection speeds, differentiation between more and less satisfied customers

Unit: %

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q2011

Base: Homes with voice electronic communications service and with internet access service (excluding non-responses)

Note: Results for speeds below 1 Mbps are not presented since estimates are unreliable; other estimates for the less satisfied customers are acceptable (*) and more satisfied customers are reliable. However, note should be made of the fact that the rate of non-response to the question about contracted connection speed is 42 percent in the group of less satisfied customers and 51 percent in the group of more satisfied customers.

The pricing variable is the variable where the evaluation between the two groups is closest.

In order to try to identify the characteristics and factors – socio-demographic, economic, possession of other electronic communication services, type of Internet access and intention to switch provider – which may distinguish these two groups, an econometric of discrete model choice was estimated – logit⁷¹, and it was concluded that⁷²:

⁷¹ The dependent variable is binary with the value 1 (where the home is less satisfied with the IAS) and 0 (where the home is more satisfied with the IAS). The available independent variables selected to explain, initially, the situation of lower customer satisfaction refer to:

socio-demographic and economic characteristics (Marktest region, social class, family size, presence of children
or elderly in the home, age and gender of the respondent, level of education, employment status and professional
status of the respondent)

- The only economic and socio-demographic characteristics to provide statistically significant differentiation between less satisfied customers and more satisfied customers is level of education. Customers with lower educational levels are reported as more likely to be less satisfied. As the level of education increases, customers are less likely to belong to the group of less satisfied customers.
- Customers with access supported over optical fibre are less likely to be dissatisfied. In contrast, ADSL subscribers are more likely to be dissatisfied with the service.
- The incorporation of IAS in a bundle of services also reduces the likelihood of dissatisfaction with the service.
- As expected, less satisfied customers were more likely to express an intention to switch provider in the short term.

where G refers to a function which satisfies the condition 0 < G(z) < 1, for any real value z. In the case of the logit model, G refers to the logistic distribution function: $G(z) = \frac{\exp(z)}{1 + \exp(z)}$

The estimation of the model's parameters uses the method of maximum likelihood. Only discrete variables were considered which are shown, in conjunction or individually, as determinant to the explanation of the model; whereas it is noted that, according to the logit model with robust variance (robust Huber / White estimator), all parameter signals are in line with theoretical expectations. The model's global specification test reveals no evidence of omitted explanatory variables that are significant in explaining the dependent variable and the Pearson and Hosmer-Lemeshow adjustment tests show that the model is fitting to the data.

⁷² This analysis is provided by ICP-ANACOM based on Marktest microdata – *Barómetro de Telecomunicações* (Telecommunications Barometer) Study, 2nd half 2011.

Possession of services and types of access (possession of MBB, FTS or STVS at home, fixed Internet access via CABLE, via ADSL or over optical fibre, possession of Internet access service as part of a bundle) and

 $[\]cdot$ switch of IAS provider (intention to switch IAS provider within next three months).

The logit models are based on the assumption that the relationship between P(y = 1|X) and the explanatory variables $X = (x_1 x_2 \dots x_k)$ is not linear and that the probabilities vary between 0 and 1. In this sense the model has the following structure: $P(y = 1|x_1, x_2, \dots, x_k) = G(\beta_0 + \beta_1 x_1 + \dots + \beta_k x_k)$

4.5. Broadband penetration

As at the end of 2011, the penetration rate of broadband Internet access was reported at 21.1 per 100 inhabitants for fixed access and 27.5 per 100 inhabitants for mobile access with actual use.

	53) 2 0 1 0	54) 25 0 1 1	Var. (pp) 2010/2011	Var. (pp) annual average 2007/2011	⁵⁶ Var. (pp) accumulated 2007/2011
Broadband accesses (fixed)	20.0	21.1	1.1	1.6	6.5
ADSL accesses	10.5	10.3	-0.2	0.4	1.6
Cable modem accesses	8.1	8.5	0.4	0.7	2.8
Optical fibre accesses (FTTH/B)	1.2	2.2	1.0		
Other types of access	0.2	0.0	-0.2	0.0	-0.1
Broadband customers (mobile) ⁷³	24.1	27.5	3.8	5.3	21.3
Active broadband (mobile) customers using cards/modem	12.0	10.7	-1.4		

 Table 88– Evolution in the broadband penetration rates

Unit: accesses per 100 inhabitants

Source: ICP-ANACOM

There is an evident slowdown in the penetration growth of FBB and MBB, compared to the average rate of growth over the last five years.

Geographically, the penetration rate of FBB accesses in terms of population was higher in the region of Lisbon and in the Algarve, with values exceeding 25 accesses per 100 inhabitants. The autonomous regions also had values above the national average.

⁷³ Customers of mobile operators who can access the MBB Internet and who established at least an IP session to access the broadband Internet in the period being reported, i.e. recorded traffic in the last month of the quarter. Corresponds to indicator 2.5.1.1 in the Quarterly questionnaire on mobile services. See definition of this indicator on ANACOM's website at http://www.anacom.pt/render.jsp?contentId=963861 (Página Inicial > Estatísticas > Operadores / prestadores - informação periódica a remeter à ANACOM Questionários trimestrais por serviço > Operadores / prestadores - informação periódica a remeter à ANACOM Questionários trimestrais por serviço > Operadores / prestadores - informação periódica a remeter à ANACOM Questionários trimestrais por serviço > Serviços Móveis - Deliberação de 17.06.2010 (para envio a partir do 2.º trimestre 2010 e até 30 julho 2010)).

Table 89– Penetration of broadband accesses in terms of total population, by NUTS II

NUTS II	Total accesses
North	17.6
Centre	17.1
Lisbon	28.8
Alentejo	17.1
Algarve	25.8
Autonomous Region of the Azores	22.7
Autonomous Region of Madeira	23.8
Total	21.1

Unit: accesses per 100 inhabitants

Source: ICP-ANACOM, INE (Statistics Portugal)



Source: ICP-ANACOM

Figure 5 – Geographical distribution of penetration of broadband Internet accesses (Autonomous Regions of Azores and Madeira)



Autonomous Region of Madeira

Autonomous Region of Azores



Source: ICP-ANACOM

In 2011, the penetration rate of residential accesses, calculated in terms of dwellings, was reported at 33.6 accesses per 100 dwellings. The penetration rate measured in terms of private households was reported at 47.8 percent.

Table 90 – Penetration of residential broadband accesses

NUTS II	Residential accesses per 100 dwellings	Residential accesses per 100 private households
North	29,8	41,8
Centre	24,2	37,8
Lisbon	51,3	63,7
Alentejo	23,4	35,9
Algarve	27,0	52,0
Autonomous Region of the Azores	46,2	60,6
Autonomous Region of Madeira	42,0	55,5
Total	33,6	47,8

Units: accesses per 100 dwellings, p.p.; accesses per 100 private households, p.p.

Source: ICP-ANACOM; INE

Note: Conventional dwellings (housing stock – No.). INE, Statistics of Concluded Projects. 2010 data, revised on 29.07.2011. Private households (No.) by Place of residence (based on 2011 Census).

The following map illustrates the geographical distribution of penetration of residential broadband accesses of this service by municipality. The municipalities of the regions of Lisbon and Porto stand out as having penetration rates between 50 and 75 accesses per 100 dwellings and major district capitals with penetration rates between 25 and 50 accesses per 100 dwellings.

Figure 6 - Geographical distribution of penetration of residential broadband Internet accesses (Mainland Portugal)



Acessos SAI residenciais por 100 alojamentos 4T2011

75 a	100
50 a	75
25 a	50
0 a	25
0	

Source: ICP-ANACOM

Figure 7 – Geographical distribution of penetration of residential broadband Internet accesses (Autonomous **Regions of Azores and Madeira)**



Autonomous Regions of Madeira

Autonomous Regions of Azores Western Group Eastern Group Central Group

Source: ICP-ANACOM

> The growth reported in FBB penetration in Portugal was lower than in OECD countries. The differential between the growth of broadband penetration in OECD and growth of broadband in Portugal was 0.1 percentage points.

Graphic 89 - Variation in the penetration rate of FBB accesses



Unit: p.p.

Source: ICP-ANACOM, OECD Broadband Portal

* Variation between June 2010 and June 2011.

The growth in FBB penetration in Portugal was the 18th highest in the EU.



Graphic 90 - New FBB accesses per 100 inhabitants between July 2010 and July 2011

Unit: p.p. Source: EC, COCOM, Broadband access in the EU: situation at 1 July 2011 Portugal is in 21st place in ranking of FBB penetration in the EU27, the same position as in July 2011.



Graphic 91 – FBB penetration in EU27 in July 2011

Unit: customers per 100 inhabitants

Source: EC, COCOM, Broadband access in the EU: situation at 1 July 2011

In the case of MBB and according to the EC, Portugal was 13th in the ranking of EU countries, 2 percentage points above the EU average⁷⁴, falling six places compared to January 2011.

⁷⁴ The base information used by the EC is different from that published by ICP-ANACOM. The information of the Communications Committee (COCOM) refers to the number of MBB access customers who were active during the period.



Graphic 92 - MBB penetration in EU27 in June 2011

Unit: users per 100 inhabitants

Source: EC, COCOM, Broadband access in the EU: situation at 1 July 2011

As at the end of 2011, about 27.3 percent of mobile users in Portugal used PCMCIA cards or USB modems to access the Internet through desktop computers and laptops. The number of users with this type of equipment fell by 11.3 percent over the last year. The EC compiled information on this specific indicator, allowing a comparison of MBB penetration in the mode which is most similar to fixed broadband in the EU27 countries. In this ranking, Portugal was in 6th position at the end of 2011 (same position as in January 2011).



Graphic 93 - MBB penetration via PCMCIA cards or USB modems in EU27 - July 2011

Unit: cards/modem per 100 inhabitants

Source: EC, COCOM, Broadband access in the EU: situation at 1 July 2011

Box I - Development of highspeed networks and services in Portugal in 2011

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BOX I – Development of high-speed networks and services in Portugal in 2011

At the end of 4th quarter 2011 (4Q11), there were around 16 operators with deployed highspeed accesses. The main network operators that have deployed high-speed accesses in Portugal were ZON, PT Comunicações, S.A. (PTC), Cabovisão, Optimus and Vodafone.

In December 2010, Optimus and Vodafone signed an agreement to share NGA infrastructure.

Cabled dwellings

In 4Q11, the number of dwellings cabled with optical fibre (FTTH/B) for all operators was reported at 1.93 million^{75,76}, an increase of 31.3 percent over the same period of the previous year.

The number of dwellings with accesses using EuroDOCSIS 3.0 – standard used by cable TV operators to provide high-speed services – totalled 3.9 million, which represents an increase of 1.8 percent over the same period of the previous year.

NUTS II	2010	2011	Var. (%) 2010/2011
North	401	538	34.1%
Centre	92	138	49.5%
Lisbon	935	1,189	27.2%
Alentejo	1	8	533.5%
Algarve	25	39	52.7%
A.R. Azores	4	4	4.2%
A.R. Madeira	15	19	24.8%
Total	1474	1935	31.3%

Table 91 – Dwellings cabled with optical fibre (FTTH/B), by NUTS II

Units: thousands; %

Source: ICP-ANACOM

⁷⁵ The information presented here was compiled from providers and may be modified if there are revisions or updates.

⁷⁶ The provision of the service by more than one operator in the same area implies the possibility of multiple cabling of the same dwellings. This means that the sum of cabled dwellings by all operators may result in duplicate counting.

NUTS II	2010	2011	Var. (%) 2010/2011
North	967	981	1.4%
Centre	570	585	2.8%
Lisbon	1,818	1,839	1.1%
Alentejo	140	150	7.0%
Algarve	213	218	2.5%
A.R. Azores	76	78	2.4%
A.R. Madeira	67	67	0.8%
Total	3851	3919	1.8%

Table 92- Cabled dwellings supported by EURODOCSIS 3.0 or equivalent, by NUTS II

Units: thousands; %

Source: ICP-ANACOM

In terms of cabled dwellings per 100 dwellings, it is reported that 33.7 percent of total dwellings are cabled with FTTH/B. Dwellings cabled with DOCSIS 3.0 made up 68.2 percent of total dwellings, twice the number of dwellings cabled with optical fibre.

The provision of the service by more than one operator in the same region implies the possibility of multiple cabling of the same dwelling. This means that the sum of cabled dwellings by all operators may result in duplicate counting.

It has been estimated that the effect of double counting reaches a maximum of 27.5 percent in the case of FTTH/B, 13.4 percent in the case of EuroDOCSIS 3.0 and 40.9 percent, if FTTH/B and EuroDOCSIS 3.0 are considered together.

As such, high-speed accesses were available in at least 88 percent of households and 60 percent of dwellings in Portugal.

Geographic distribution of high-speed accesses in Portugal is not homogeneous. High-speed accesses are concentrated in the North and Lisbon regions.

In about 45 municipalities, more than 5 percent of dwellings have already been cabled with optical fibre, and these networks are also available in over 124 municipalities, although to a

lesser extent. HFC (DOSCSIS) was present in more than 5 percent of dwellings in 149 municipalities.

NUTS II	Cabled dwellings (FTTH/B) per 100 dwellings	Cabled dwellings (DOCSIS 3.0) per 100 dwellings
North	28.9%	52.6%
Centre	9.7%	41.4%
Lisbon	83.5%	129.2%
Alentejo	1.8%	32.3%
Algarve	11.0%	61.9%
A.R. Azores	3.8%	72.4%
A.R. Madeira	15.7%	54.9%
Total	33.7%	68.2%

Table 93 – Dwellings cabled with optical fibre (FTTH/B) and DOCSIS 3.0 per 100 dwellings

Unit: %

Source: ICP-ANACOM



Figure 8 – Geographic distribution of dwellling cabled with FTTH/B and Euro DOCSIS 3.0

Unit: percentage of cabled dwellings

Source: ICP-ANACOM

Alojamentos cablados com HFC (DOCSIS3.0) no total de alojamentos 4T2011

>100%	
75% a	100%
50% a	75%
25% a	50%
5% a	25%
0% a	5%
0%	

Alojamentos cablados com FTTH/B no total de alojamentos 4T2011

>100%	
75% a	100%
50% a	75%
25% a	50%
5% a	25%
0% a	5%
0	

246/501

Customers of services supported by high speed accesses

According to available data, in 4Q11, there were about 263 thousand subscription television customers and 236 thousand Internet access customers using FTTH technology.

However, in terms of the IAS, only 77.5 thousand FTTH customers and 227 thousand DOCSIS 3.0 customers were customers of offers equal to or exceeding 30 Mbps.

Table 94 – Customers/accesses with high-speed access in 4Q11

	4Q2010	4Q2011	Var. 4Q2011/4Q2010
Television subscription service customers using FTTH	143	263	+83.5%
Internet accesses using FTTH	130	237	+81.4%
of which with speeds >= 30 Mbps	44	78	+74.6%
Internet accesses using DOCSIS 3.0	306	n.d.	
of which with speeds >= 30 Mbps	136	227	+66.6%

Unit: thousands of customers

Source: ICP-ANACOM

International comparisons

According to a study by *Institut de l'Audiovisuel et des Télécommunications en Europe* (IDATE), Portugal was ranked 2nd among European countries in terms of homes passed with optical fibre. Lithuania topped this ranking, while the average of homes passed with FTTH/B in the EU27 was about 9 percent.



Graphic 94 – Coverage of FTTH in EU27 in December 2010

Unit: homes passed per 100 dwellings

Source: Broadband Coverage in Europe, 2011 Survey. IDATE

Meanwhile, Portugal is one of the European countries in the FTTH Council Europe's Global Ranking since the end of 2009. This ranking consists of the countries where the number of subscribers exceeds 1 percent of households.

The list was headed by Lithuania (where 28.3 percent of homes now have Internet connections via optical fibre), Norway (14.7 percent) and Sweden (13.6 percent). Of the EU27 countries considered in the study, the countries with the highest number of subscribers are Lithuania, Sweden, Bulgaria, Slovenia and Latvia. Portugal was in 9th place in the European ranking, with a penetration rate of 6.5 subscribers per 100 dwellings.





Unit: 100 subscribers by cabled dwellings

Source: FTTH Council Europe. December 2011 European Ranking

Note: Only countries with more than 200 thousand dwellings were considered.

SUBSCRIPTION TELEVISION SERVICE (STVS)

5. Subscription television service (STVS)

This chapter describers the evolution of STVS reported during 2011 and preceding years.

STVS covers the TV distribution services supported over cable distribution networks, satellite distribution networks (DTH), over the public switched telephone network and optical fibre networks (FTTH/B)⁷⁷. The Mobile TV service is presented in the chapter on mobile services, since it is currently a unicast type.

During 2011, the process was begun to switch off the analogue television signal with migration to DTT. Given that the services provided under this category are not covered by the definition of subscription TV⁷⁸, this process is not covered here.

5.1. Key aspects of the evolution reported in 2011

There were around 2.98 million subscription television customers at the end of 2011⁷⁹, an additional 202 thousand compared to the previous year. This corresponds to 73 subscribers per 100 private households. According to available information, the penetration rate of subscription TV in Portugal remained above the European average in 2011.

The number of subscribers reported as at the end of 2011 is slightly below the forecast range resulting from the recent historical trend in this variable, possibly due to the discontinuation of an STVS offer provided using wireless access (FWA) and to a slowdown in the growth of offers supported over ADSL.

⁷⁷ During 2011, AR Telecom offered subscription TV services using FWA. This offer was discontinued in November 2011.

⁷⁸ All television signal distribution and broadcasting services which are not free-to-air, including services included in bundles of services where subscription/use involves payment of a charge.

⁷⁹ This number includes services provided under the protocol signed between the Government of the Republic, the Regional Governments, ICP-ANACOM and an operator of television distribution networks currently operating in each of these two regions. The services provided under these protocols covered around 41.6 thousand households in 4Q11.

The FTTH/B platform was the main driver of growth in the number of subscribers, accounting for 120 thousand new subscribers in net terms. This form of access represented 9 percent of total subscribers as at the end of 2011. The number of subscribers supported over ADSL offers was the second driver of the service's growth (69 thousand subscribers) and now represents 19 percent of total subscribers. The main means of accessing the service – satellite TV (DTH) (23 percent) and cable TV (49 percent) – grew 4.3 percent and 0.6 percent, respectively. After three consecutive years of declines in the number of cable TV subscribers, a recovery of 10 thousand subscribers was reported in 2011, in likelihood due to offers with EuroDOCSIS 3.0.

Grupo ZON/TV Cabo remains the main operator of the subscription television service, with a 53.9 percent share of subscribers. PT Comunicações saw its share of subscribers continue to increase, to 35 percent, while Cabovisão remains the third largest operator, with a share of 8.6 percent of total subscribers.

• Meanwhile, the presence of offers sold in bundles continued to grow, in conjunction with the fixed/mobile broadband Internet service and/or the voice telephony service.

The monthly charge paid by homes paying for TV with an individual bill was 28.10 euros.

As at the end of 2011, about 26.3 percent of homes had access to premium channels, about 2 percentage points less than reported for the same period of the previous year and 4.7 percentage points less than at the end of 2009.

Overall satisfaction with the paid television service (measured on a scale of 1 to 10, from "dissatisfied" to "very satisfied") is high. About 84 percent of respondents rate the service with a score of 7 or higher. Compared to the previous year, the proportion of high positive ratings (9 or 10) of the service decreased by about 12 percentage points.

5.2. The subscription TV service offer

The activity of the providers of the subscription television distribution service entails the transmission and retransmission of information, including first and third party television and radio broadcasting, encrypted or otherwise.

5.2.1. The subscription TV services and platforms

Subscription television was introduced in Portugal with the development of cable distribution networks. The first authorization titles were granted on a regional and local basis in 1994.

Currently, STVS reaches consumers through the following platforms:

- CATV Hybrid networks of optical fibre and coaxial cable which distribute the TV signal received at head end through cells that constitute the local access networks, each connecting a few hundred dwellings. Lately, cable operators have upgraded their networks by investing in network upgrades to the DOCSIS 3.0 standard and extending fibre infrastructure closer to users so that they can offer higher bandwidth services, such as high definition television (HD) and other interactive services;
- satellite television (DTH) as an alternative to cable, subscription television operators have been offering a satellite service since 1998. To use this service, customers need a satellite dish, a receiver/decoder and an access card. This offer has expanded the geographic coverage of subscription television services, whereas the corresponding number of subscribers has grown considerably. Currently, the commercial television offer is identical to the cable offer. However, interactivity is not possible. In 2008, in addition to its IPTV offer, PTC also launched a DTH offer;
- IPTV and terrestrial digital television broadcasting system (DVB-T) at the end of 2005, two new television distribution offers were launched, the "SmarTV" service from Novis (currently Optimus) and the TV.NET.TEL from AR Telecom. While the former is an IPTV offer, the service provided by AR Telecom used a proprietary technology called Tmax. Tmax was a digital, wireless technology with high transmission capacity supported over the DVB-T standard and IP. This offer was discontinued in November 2011. In June 2007, Grupo PT also launched a commercial IPTV offer and, in September 2009, VODAFONE launched another offer of the same type;
- FTTH/B in 2007 TVTEL (now part of ZON/TV Cabo) began construction of an optical fibre network to provide the subscription television service in certain areas around Lisbon. In 2008, Sonaecom also invested in optical fibre networks (FTTH/B), but also limited to certain areas of Greater Lisbon and Porto. During 2009, PTC also launched subscription
television offers based on FTTH/B. In mid-2010, Vodafone also launched offers based on optical fibre (FTTH/B);

 mobile networks – television distribution offers are also available based on 3G mobile services (since March 2012 it has also been possible to use this service over 4G networks). However, this service is provided in unicast mode. Therefore, in this report, the evolution of this type of mobile TV offer is addressed in the chapter on mobile services;

5.2.2. Geographic availability of the service

With regard to the geographic availability of the service, satellite television offers allow access almost everywhere in the country.

IPTV services provided over the public switched telephone network (ADSL) are potentially available at all locations where the fixed network is deployed, provided there are no restrictions stemming from the technical conditions of the loop and the available bandwidth. Three out of four areas of exchange areas of the public switched telephone network had ADSL2, an ADSL format that enables this service. Meanwhile, at the end of 2011 there were IPTV customers present in 297 of the country's 308 municipalities.

The offer of subscription TV over FTTH/B is potentially available in at least 1.4 million dwellings in 173 of Portugal's municipalities (in the section on high-speed networks in Portugal, the national dispersion of the optical fibre is shown). At the end of the year, subscription TV customers using optical fibre were concentrated in only 58 municipalities.

An analysis of the geographical coverage of cable TV networks is conducted below.

Cabled dwellings of cable TV service⁸⁰

⁸⁰ The provision of the service by more than one operator in the same region implies the possibility of multiple cabling of the same dwelling. This means that the sum of cabled dwellings by all operators may result in duplicate counting. This is evident, for example, in the Lisbon region, where the sum of cabled dwellings for all operators is greater than the total dwellings. This has gained importance with the growing competition between operators. It is estimated that this effect of double counting accounts for a maximum of 13.5 percent of cabled dwellings.

The following maps show the geographic availability of the CDS at two different points of time: end of 2002 and end of 2011.



Figure 9 – Geographical distribution of the sum of cabled dwellings by all operators ⁸⁰

Unit: percentage of cabled dwellings

Source: ICP-ANACOM

It is concluded that operators of cable distribution networks have deployed their networks in the most densely populated areas of the country, specifically, Greater Lisbon, Porto, Setúbal Peninsula, the northern coast and the Algarve. More recently, investment has intensified in areas with an intermediate level of population density (North and Algarve) and in areas where cable TV networks were previously undeveloped (Alentejo).

Lisbon and the North represent more than 72.4 percent of cable dwellings, with this type of network available in 172 of Portugal's 308 municipalities.





Source: ICP-ANACOM

In 2011, the sum of cabled dwellings for all operators exceeded 4 million. Over this year, there was a decrease of 44,500 cable dwellings. This reduction was due to the discontinuation of MMDS coverage⁸¹ in the municipalities of Madeira (23,900) – this form of wireless distribution has so far been counted as cable TV – and a correction in the number of cabled dwellings

⁸¹ Multichannel Multipoint Distribution Service is a wireless telecommunications technology used as an alternative method of cable television programming reception in areas with difficult access or where cable installation is not economically viable.

reported in Braga, Leiria and Santarém under responsibility of ZON TV Cabo Portugal, also following the acquisitions made in 2007 (57,100 accesses).

If these two effects are discounted, the number of cabled dwellings would have been reported as 4,092 million, an increase of 0.9 percent over the previous year. This development was mainly due to investments in Lisbon and in the North by Grupo ZON TV Cabo

	2010	2011	Var. (%) 2010/2011	Var. (%) annual average 2007/2011	Var. (%) accumulated 2007/2011
North	1,082	1,063	-1.7%	-3.2%	-12.0%
Centre	596	586	-1.8%	1.0%	3.9%
Lisbon	1,829	1,839	0.5%	1.2%	4.8%
Alentejo	159	150	-5.4%	0.4%	1.7%
Algarve	222	226	1.7%	2.5%	10.2%
Autonomous Region of Azores	76	78	1.6%	8.6%	38.9%
Autonomous Region of Madeira	91	70	-23.2%	-6.3%	-23.1%
Total	4,056	4,011	-1.1%	-0.1%	-0.4%

Table 95 – Sum of cabled dwellings per operator

Units: thousands, %

Source: ICP-ANACOM

Since 2008, a decline has been reported in the number of cabled dwellings; this is essentially explained by elimination of duplication and double-counting following mergers and acquisitions. This reduction in the number of dwellings mainly affected the northern and central regions.



Graphic 97 – Evolution in the sum of cabled dwellings per operator

Unit: thousands of dwellings

Source: ICP-ANACOM

5.2.3. Operational operators

At the end of 2011, there were 11 operational providers STVS, two fewer than in 2010. During 2011, AR Telecom and Entrónica discontinued provision of this service.



Graphic 98 – Evolution in the number of operational providers

Source: ICP-ANACOM

Between 2000 and 2007, there were no significant changes in the number of cable TV distribution network operators. There was in fact a reduction in the number of operational operators in 2002. However, this resulted from the merger of CATVP's regional companies operating on the mainland into a single company. The increases reported in the following years stem from the authorizations granted to residents' associations, whose networks are of small size and not available to the public, or to regional operators with small networks. In 2009, the reported evolution resulted from the acquisition of TVTEL, Bragatel and Pluricanais by ZON/TV CABO and the entry of two operators, including Vodafone.

Of the 11 operational in activity, eight were cable TV operators. A list of CDS providers is given below.

Company name	Status	
Associação de moradores do litoral de Almancil	А	
Associação de moradores da urbanização Quinta da Boavista	А	
Cabovisão – Sociedade de Televisão por Cabo, S.A.	А	
STV – Sociedade de Telecomunicações do Vale do Sousa, S.A.	А	
UNITELDATA - Telecomunicações, S.A.	А	
ZON TV Cabo Açoreana, S.A. (Grupo ZON)		
ZON TV Cabo Madeirense, S.A. (Grupo ZON)	А	
ZON TV Cabo Portugal, S.A.	А	
Total active	8	
Total inactive	0	
Overall total	8	

Table 96 – Subscription TV service providers using cable – 2011

Source: ICP-ANACOM

Key: A - active NA - Not active

* Cable distribution networks not available to the public

A list of operational undertakings in each region is given below⁸². However, the fact that an operator is operating in a determined region does not mean that it is present in all the municipalities of these regions.

NUTS II		Operational operators		
North		Cabovisão, ZON TV Cabo, STV, Uniteldata		
Centre		Cabovisão, ZON TV Cabo		
Lisbon		Cabovisão, ZON TV Cabo		
Alentejo		Cabovisão, ZON TV Cabo		
Algarve		Associação de moradores do litoral de Almancil, associação de moradores da urbanização Quinta da Boavista, Cabovisão, ZON TV Cabo		
Autonomous of Madeira	Region	ZON TV Cabo Madeirense		
Autonomous of Azores	Region	ZON TV Cabo Açoreana		

Table 97 – Operators of cable distribution networks in activity, by NUTS II

Source: ICP-ANACOM

The following table lists the companies that provide the TV subscription service via DTH.

Table 98 – Providers of subscription television service over DTH – 2011

Company name	
PT Comunicações, S.A.	
ZON TV Cabo Açoreana, S.A. (Grupo ZON)	А
ZON TV Cabo Madeirense, S.A. (Grupo ZON)	
ZON TV Cabo Portugal, S.A	
Total active	
Total inactive	
Overall total	

Source: ICP-ANACOM

Key: A - active NA - Not active

In 2011, the number of operational service providers remained unchanged.

⁸² Unit of level 2 of the Nomenclature of Territorial Units for Statistics (NUTS), as established by Decree-Law no. 244/2002 of 25 November. Under this law the following seven NUTS II were established in Portugal: North (Minho-Lima Cávado, Ave, Grande Porto, Tâmega, Entre Douro e Vouga, Douro e Alto-Trás-os-Montes), Centre (Baixo Vouga, Baixo Mondego, Pinhal Litoral, Pinhal Interior Norte, Pinhal Interior Sul, Dão-Lafões, Serra da Estrela, Beira-Interior Norte, Beira Interior Sul, Cova da Beira, Oeste e Médio Tejo), Lisboa (Grande Lisboa e Península de Setúbal), Alentejo (Lezíria do Tejo, Alentejo Litoral, Alto Alentejo, Alentejo Central e Baixo Alentejo), Algarve, ARA and ARM.

The table below shows the list of providers DTH operating in each region:

NUTS II	Operational operators
North	PT Comunicações, ZON TV Cabo
Centre	PT Comunicações, ZON TV Cabo
Lisbon	PT Comunicações, ZON TV Cabo
Alentejo	PT Comunicações, ZON TV Cabo
Algarve	PT Comunicações, ZON TV Cabo
Autonomous Region of Madeira	PT Comunicações, ZON TV Cabo Madeirense
Autonomous Region of Azores	PT Comunicações, ZON TV Cabo Açoreana

Table 99 – Operators of DTH distribution networks in activity, by NUTS II

Source: ICP-ANACOM

As regards operators with products supported over FTTH/B, after discontinuing the offers of the former TVTEL following its acquisition of this company, ZON/TV Cabo Portugal reported a small number of customers using this form of access to the service at the end of 2011, as also ZON/TV Cabo Madeirense. In addition to this company, the companies which had previously launched offers of this type remained in activity: Vodafone, which started to provide the service in the metropolitan areas of Lisbon and Oporto in 2010, Optimus, which maintained its offer in Lisbon, Porto and Setubal, and PTC which has customers in 37 municipalities.

Company name	Status
PT Comunicações, S.A.	A
Optimus Comunicações, S.A. ⁽¹⁾	A
Vodafone Portugal – Comunicações Pessoais, S.A.	A
ZON TV Cabo Portugal, S.A	A
ZON TV Cabo Madeirense, S.A. (Grupo ZON)	A
Total active	5
Total inactive	0
Overall total	5

Table 100 – Providers of subscription television service over optical fibre – FTTH/B – 2011

Source: ICP-ANACOM

Key: A - active NA - Not active

1) Sonaecom - Serviços de Comunicações, S.A changed its name to Optimus Comunicações, S.A.

The table below lists providers using FTTH/B operating in each of the regions:

NUTS II	Operational operators
North	Optimus, PT Comunicações, Vodafone
Centre	Optimus, PT Comunicações, ZON TV Cabo
Lisbon	Optimus, PT Comunicações, Vodafone, ZON TV Cabo
Alentejo	PT Comunicações
Algarve	PT Comunicações
Autonomous Region of Madeira	PT Comunicações, ZON TV Cabo Madeirense
Autonomous Region of Azores	PT Comunicações

Table 101– Operators of distribution networks using FTTH/B in activity, by NUTS II

Source: ICP-ANACOM

There are also four operators eligible to provide STVS supported over ADSL, three of which were in operation as at the end of 2011. Optimus has been eligible to provide the television and video signal distribution service since November 2005 and provided an IPTV offer in 92. PTC launched an IPTV service as part of a triple play offer in July 2007 (months before the spin-off of PT Multimédia that occurred in November 2007), currently covering 296 municipalities. Finally in 2009, Vodafone began offering an IPTV service, reporting subscribers in 114 municipalities at the end of 2011.

Table 102 – Providers of subscription television service – other platforms – 2011

Company name	Status
AR Telecom – Acessos e Redes de Telecomunicações, S.A	NA
IPTV Telecom – Telecomunicações, Lda.	NA
PT Comunicações, S.A. ¹	А
Optimus Comunicações, S.A. ^{1,2}	А
Vodafone Portugal – Comunicações Pessoais, S.A. ¹	А
Total active	3
Total inactive	2
Overall total	5

Source: ICP-ANACOM

Key: A - active NA - Not active

¹ Optimus, PTC and Vodafone offer subscription television over ADSL.

² Sonaecom - Serviços de Comunicações, S.A changed its name to Optimus Comunicações, S.A.

The table below lists providers using other platforms in each region:

NUTS II	Operational operators
North	Optimus, PT Comunicações, Vodafone
Centre	Optimus, PT Comunicações, Vodafone
Lisbon	Optimus, PT Comunicações, Vodafone
Alentejo	Optimus, PT Comunicações, Vodafone
Algarve	Optimus, PT Comunicações, Vodafone
Autonomous Region of Madeira	PT Comunicações
Autonomous Region of Azores	PT Comunicações, Vodafone

Table 103 – Operators of distribution networks using other platforms, by NUTS II

Source: ICP-ANACOM

5.2.4. The offer structure

Grupo ZON/Cable TV remained the largest STVS operator with a 53.9 percent share of subscribers, 24.5 percentage points less than its share in 2007.

Apart from Grupo ZON/TV Cabo, there were two operators with significant shares: PT Comunicações (35.0 percent), and Cabovisão (8.6 percent).

In the last year, only PTC, Optimus and Vodafone increased their shares of customers.

Table 104 – Shares of subscription TV subscribers

	2010	2011	Var. (p.p.) 2010/2011	Var. annual average (p.p.) 2007/2011	Var. acum. (p.p.) 2007/2011
Grupo ZON/TV Cabo ⁸³	57.9%	53.9%	-4.0	-6.1	-24.5
ZON TV Cabo Portugal	52.2%	48.8%	-3.4	-5.2	-20.8
ZON TV Cabo Açoreana	2.7%	2.4%	-0.3	-0.5	-2.1
ZON TV Cabo Madeirense	3.1%	2.8%	-0.3	-0.4	-1.7
PTC	29.9%	35.0%	5.1	8.5	34.0
Cabovisão	9.4%	8.6%	-0.8	-1.6	-6.3
OPTIMUS	1.1%	1.2%	0.1	0.2	0.8
VODAFONE	0.7%	1.2%	0.5	0.3	1.2
AR TELECOM	0.9%	-	-	-	-
Other alternative providers	0.2%	0.1%	-0.1	-0.5	-1.9
Units: %, p.p.					

Source: ICP-ANACOM

With specific regard to the distribution of cable television service, which makes up 48.6 percent of all subscription TV subscribers, Grupo ZON/TV Cabo subscribers have about 82 percent of subscribers.

⁸³ Since 2008, ZON Multimédia has included the companies acquired from Grupo Parfitel (Bragatel, Pluricanal Leiria and Pluricanal Santarém), such as TVTel, which on 31 July 2009, was incorporated into ZON TV CABO.

Table 105 – Distribution of cable TV subscribers by operator

	2007	2008	2009	2010	2011
Grupo ZON/TV Cabo ⁸⁴	74.0%	80.6%	82.0%	81.6%	82.0%
ZON TV Cabo Portugal	66.2%	67.4%	74.3%	74.3%	75.2%
ZON TV Cabo Açoreana	3.1%	3.1%	3.1%	3.0%	2.9%
ZON TV Cabo Madeirense	4.7%	4.8%	4.6%	4.3%	4.0%
TVTEL	-	3.4 %	-	-	-
Bragatel	-	0.8%	-	-	-
Pluricanal Leiria	-	0.6%	-	-	-
Pluricanal Santarém	-	0.5%	-	-	-
Cabovisão	20.1%	19.3%	17.8%	18.1%	17.7%
TVTEL	3.7%	-	-	-	-
Other alternative providers	2.2 %	0.2%	0.2%	0.3%	0.3%

Unit: %

Source: ICP-ANACOM

In the case of DTH, which represents 23.5 percent of total subscription TV subscribers, Grupo ZON/TV Cabo was the only service provider until 2007, when TVTEL entered this activity (since acquired by Grupo ZON/TV Cabo). Grupo ZON/TV Cabo has a 59.7 percent share of DTH subscribers. In 2008, PTC began offering this service. The share of this operator rose 5.1 percentage points in 2011, reaching 40.3 percent.

Table 106 – Distribution of DTH television subscribers by operator

	2007	2008	2009	2010	2011
Grupo ZON/TV Cabo ⁸⁴	99.0%	79.1%	68.1%	64.8%	59.7%
ZON TV Cabo Portugal	85.8%	66.5%	59.6%	56.6%	51.9%
ZON TV Cabo Açoreana	9.2%	6.9%	5.2%	4.7%	4.2%
ZON TV Cabo Madeirense	4.0%	3.5%	3.2%	3.5%	3.5%
TVTEL	-	2.2%	-	-	-
PTC	-	20.9%	31.9%	35.2%	40.3%
TVTEL	1.0%	-	-	-	-

Unit: %

Source: ICP-ANACOM

⁸⁴ Since 2008, ZON Multimédia has included the companies acquired from Grupo Parfitel (Bragatel, Pluricanal Leiria and Pluricanal Santarém), such as TVTel, which on 31 July 2009, was incorporated into ZON TV CABO.

With regard to the service over optical fibre/FTTH (8.8 percent of all subscribers), PTC has a share of 83.4 percent of subscribers.

	2007	2008	2009	2010	2011
PTC	-	-	69.2%	87.6%	83.4%
TVTEL	100.0%	46.7%	-	-	-
ZON/TV Cabo Portugal	-	-	1.1%	-	0.0%
Optimus	-	53.3%	29.7%	10.6%	9.3%
Vodafone	-	-	-	1.8%	7.3%

Table 107 – Distribution of television subscribers using FTTH/B by operator

Unit: %

Source: ICP-ANACOM

The STVS provided over ADSL made up a total of around 19.1 percent of subscription TV subscribers by the end of 2011, with PTC reporting a share of about 95.3 percent.

Table 108 – Distribution of IPTV television subscribers by operator

	2007	2008	2009	2010	2011
PTC	72.2%	94.2%	93.7%	94.1%	95.3%
Vodafone	-	-	2.1%	3.2%	2.7%
Optimus	27.8%	5.8%	4.2%	2.8%	2.5%

Unit: %

Source: ICP-ANACOM

5.2.5. The commercial offers in Portugal at the end of 2011

At the end of 2011, there were more than 160 commercial subscription television offers in Portugal (10 more than in 2010), of which 39 percent were cable television, 25 percent were DTH, 25 percent were fibre and 11 percent ADSL. Compared to the previous year, there was an increase of about 70 percent reported in the number of optical fibre offers (FTTH/B), and a decrease of 18 percent in the number of cable distribution service offers.

The offers sold in bundles represented approximately 68.8 percent of total offers as at the end of 2011, about 9 percentage points less than in 2010.



Graphic 99 - Type of offer by technology

Unit: %

Source: ICP-ANACOM

Generally, bundled offers are in the majority across all technologies, except in the case of DTH where, due to the nature of the service, the television service continues more often to be provided individually. However, even in this case, services are increasingly available in bundles that include Internet and telephone services offered over DSL or using mobile technologies. Meanwhile, the number of services per bundle has been increasing.

The overwhelming majority of offers are provided in digital format.

These offers always include a minimum of four channels⁸⁵, and may reach up to 138 channels. The number of channels per offer has tended to increase and there are now about 118 offers that provide more than 50 channels.





Source: ICP-ANACOM

According to Marktest's *Barómetro de Telecomunicações* da Marktest – *Rede Fixa* (Telecommunications Barometer – Fixed network)⁸⁶, the number of homes with TV subscribers who have actual access to over 80 channels has been increasing, reaching about 46.5 percent of the total.

Units: %, no. of channels

⁸⁵ Offer launched by ZON/TV Cabo in November 2011.

⁸⁶ The *Barómetro de Telecomunicações* (Telecommunications Barometer) is a regular study of Marktest for the telecommunications sector. The universe of the *Barómetro de Telecomunicações – Rede Fixa* (Telecommunications Barometer – Fixed network) comprises dwellings in mainland Portugal and in the Autonomous Regions of Madeira and the Azores. A sample is compiled on a monthly basis which is proportional to and representative of the study's universe.

Graphic 101 – Number of channels accessed at home



Unit: %

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) 2009-2011

Base: Homes with subscription television (Total)

As at the end of 2011, about 26.3 percent of homes had access to premium channels, about 2 percentage points less than reported for the same period of the previous year and 4.7 percentage points less than at the end of 2009.

With respect to pricing of the base-service (i.e. excluding equipment or activation/installation fees or additional services or premium channels) offered by operators, these ranged between 9.99 euros (monthly average in the first year of signing up to the service) and 139.99 euros. This dispersion reflects not only the quantity of available channels, but also the download speed and upload speed of the Internet service, the bundles in which the service is included, and the service's physical support.

Table 109 – Prices of the television service by bundle type

	Minimum price	Average price	Maximum price
stand-alone	10.39	25.87	42.06
TV+FTS	9.99	26.79	36.99
TV+MBB	23.84	35.21	49.78
TV+NET	25.00	35.69	42.59
TV+MBB+FTS	30.50	38.72	49.61
TV+NET+FTS	24.99	46.71	69.99
TV+NET+MBB	42.59	47.90	57.99
TV+FTS+Mobile voice	52.19	52.19	52.19
TV+NET+FTS+MBB	29.22	53.43	139.99
TV+NET+Mobile voice+MBB	62.59	62.59	62.59
TV+NET+FTS+Mobile voice+MBB	57.99	64.99	72.99
Total	9.99	38.90	139.99

Unit: euros

Source: Service providers' websites

Note: Average values are simple averages of the offers available and are not weighted by actual consumer choice.

Compared to the previous year, the average price saw an overall decrease of 1.59 euros.

	Minimum price	Average price	Maximum price
Cabo	9.99	41.50	139.99
stand-alone	10.39	24.32	34.21
TV+FTS	9.99	27.91	36.89
TV+NET	40.17	41.38	42.59
TV+NET+FTS	24.99	50.06	69.99
TV+NET+FTS+MBB	29.22	57.94	139.99
DTH	10.39	27.99	49.78
stand-alone	10.39	27.41	42.06
TV+FTS	15.00	21.33	26.20
TV+MBB	32.01	40.90	49.78
TV+FTS+MBB	32.94	40.82	48.69
FTTH/B	17.49	43.26	105.41
stand-alone	17.49	17.50	17.50
TV+FTS	17.50	26.70	36.99
TV+NET	25.00	30.00	35.00
TV+MBB	23.84	23.84	23.84
TV+FTS+MBB	30.52	40.07	49.61
TV+FTS+Mobile voice	52.19	52.19	52.19
TV+NET+FTS	25.00	32.50	40.00
TV+NET+MBB	42.59	50.29	57.99
TV+NET+FTS+MBB	30.99	53.11	105.41
TV+NET+Mobile voice+MBB	62.59	62.59	62.59
TV+NET+FTS+Mobile voice+MBB	57.99	66.32	72.99
ADSL	19.99	44.61	67.99
stand-alone	19.99	19.99	19.99
TV+FTS	32.19	34.59	36.99
TV+FTS+MBB	30.50	30.50	30.50
TV+FTS+Mobile voice	52.19	52.19	52.19
TV+NET+MBB	43.12	43.12	43.12
TV+NET+FTS+MBB	37.41	46.19	55.49
	57.99	62.99	67.99
Total	9.99	38.90	139.99

Table 110 – Prices of the television service by technology and bundle type

Unit: euros Source: Service providers' websites Note: Average values are simple averages of the offers available and are not weighted by actual consumer choice.

According to Marktest's *Barómetro de Telecomunicações* (Telecommunications Barometer), the monthly charge paid by homes paying for TV with an individual bill paid practically the same. As at the end of 2011, the average bill was 28.10 euros, in line with the value reported at the end of 2010.



Graphic 102 – Monthly subscription TV service bill (individual bill)

Unit: euros

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer)

Base: Homes with cable TV paid through individual bills

5.3. The profile of the subscription television service (STVS) subscriber and usage of the service in 2011

The following section provides a characterization of the subscription television user according to the *Barómetro de Telecomunicações* (Telecommunications Barometer)

5.3.1. Profile of subscription television service subscriber (STVS)

The existence of the subscription television service at home is statistically associated with Marktest region (Cramer V coefficient of 0.252 in 4Q11). The service's penetration is significantly higher in the autonomous regions, in Lisbon and Porto and significantly lower in the North interior and North coast and in the South.

Marktest region	4Q08	4Q09	4Q10	4Q11
Greater Lisbon	67.4	67.6	71.1	75.6 ↑
Greater Porto	66.1	62.6	67.2	75.6 ↑
North Coast	39.7	47.7 ↑	51.1	56.7 ↑
Litoral Centre	46.2	55.4 ↑	56.6	64.8 ↑
North Interior	27.7 *	31.3 *	36.3 ↑	44.3 ↑
South	43.6 *	48.2 *	54.9 ↑	57.8
Madeira	80.7	79.3	76.2	85.6
Azores	77.8	68.6	77.9	83.2
Total	48.7	52.3 ↑	56.1 ↑	62.5 ↑
Unit: %				

Table 111 – Dwellings subscribing to subscription television by Marktest region

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q2008 to 4Q2011

Base: Total homes with voice electronic communications service according to Marktest region (excluding non-responses)

Note 1: Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate. **Note 2:** The shaded proportions indicate those that are significantly different (horizontal) according to the test of two samples for proportions. Higher proportions are highlighted in light shading and lower proportions in dark shading.

Note 3: The upward pointing arrow signals a statistically significant increase between the instance t-1 and t and a downward arrow signals a statistically significant decrease between these two instances.

Meanwhile, it is concluded that the existence of the television subscription service is statistically associated with the dwelling's social class (Cramer V coefficient of 0.257 in 4Q11): the higher the respondent's socio-economic class, the greater the probability of having a subscription television service.

Table 112 - Homes subscribing to television by social class

Social class	4Q08	4Q09	4Q10	4Q11
A - Upper	69.6	73.2	78.5	82.2
B - Upper middle	68.1	71.2	75.6	78.6
C1 - Middle	58.4	60.1	63.2	68.9↑
C2 - Lower middle	41.5	45.9↑	50.5↑	60.0↑
D - Lower	29.0	34.0↑	38.1	43.7↑
Total	48.7	52.3 ↑	56.1 ↑	62.5 ↑

Unit: %

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q2008 to 4Q2011

Base: Total homes with voice electronic communications service according to social class (excluding non-responses)

Note 1: Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate.

Note 2: The shaded proportions indicate those that are significantly different (horizontal) according to the test of two samples for proportions. Higher proportions are highlighted in light shading and lower proportions in dark shading.

Note 3: The upward pointing arrow signals a statistically significant increase between the instance t-1 and t and a downward arrow signals a statistically significant decrease between these two instances.

Note 4: Social class A is the highest social class and D is the lowest.

Note 5: The social class variable is not included in the stratification groups of the dwellings sample (Marktest district and region). This information is purely indicative of the profile of the user.

Statistical evidence was also found of a relationship between family size and availability of the service (Cramer V coefficient of 0.368 in 4Q11); where the household is made up of three individuals, the likelihood of subscription television is higher, while in households with two or fewer individuals the likelihood is significantly lower.

Table 113 – Homes subscribing to television by family structure

Number of individuals in the home	4Q08	4Q09	4Q10	4Q11
One individual	34.9	34.5	35.5	41.7
Two individuals	49.6	52.2	54.6	57.4
Three individuals	51.4	54.9	61.9↑	68.4 ↑
Four or more individuals	50.6	58.4↑	62.4↑	72.0↑
Total	48.7	52. 3 ↑	56.1 ↑	62.5 ↑

Unit: %

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q2008 to 4Q2011

Base: Total households with voice electronic communications service according to the type of family structure (excluding non-responses)

Note 1: Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate.

Note 2: The shaded proportions indicate those that are significantly different (horizontal) according to the test of 2 two samples for proportions. Higher proportions are highlighted in light shading and lower proportions in dark shading.

Note 3: The upward pointing arrow signals a statistically significant increase between the instance t-1 and t and a downward arrow signals a statistically significant decrease between these two instances.

Note 4: The variable "number of individuals" in the home is not included in the stratification groups of the dwellings sample (Marktest district and region). This information is purely indicative of the profile of the user.

There is also positive correlation between the respondent's level of education and the percentage of households subscribing to a subscription television service, (Cramer V coefficient of 0.288 in 4Q11). As the level of education increases, so does the likelihood of the household having the service.

Level of education	4Q08	4Q09	4Q10	4Q11
Below 1st cycle of basic education	23.4 *	20.1 *	20.8 *	21.3 *
1st cycle of basic education	32.7	36.7	39.5	46.1↑
2nd cycle of basic education	43.4	44.8	49.9	59.3↑
3rd cycle of basic education	48.7	52.9	56.1	67.4↑
Secondary education	57.0	59.9	65.2↑	69.6↑
Higher education	65.5	68.1	73.1↑	76.6
Total	48.7	52.3 ↑	56.1 ↑	62.5 ↑

Table 114- Homes subscribing to television by respondent's level of education

Unit: %

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q2008 to 4Q2011

Base: Total homes with voice electronic communications service according to respondent's level of education (excluding non-

responses)

Note 1: Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate.

Note 2 :The shaded proportions indicate those that are significantly different (horizontal) according to the test of two samples for proportions. Higher proportions are highlighted in light shading and lower proportions in dark shading.

Note 3: The upward pointing arrow signals a statistically significant increase between the instance t-1 and t and a downward arrow signals a statistically significant decrease between these two instances.

Note 4: The level of education variable refers to an individual characteristic whereby it is not part of the stratification of the sample of dwellings (Marktest district and region). This information is purely indicative of the profile of the user.

5.3.2. Profile of non-subscriber to TVS and reasons for not subscribing

Socio-demographic and economic profiles were identified for households which do not have the subscription TV service, based on the estimation of an econometric discrete choice model – logit⁸⁷ and for this purpose, use was made of microdata from Marktest's *Barómetro de Telecomunicações* (Telecommunications Barometer), with reference to 2nd half 2011⁸⁸.

The analysis made shows that ⁸⁹:

The logit models are based on the assumption that the relationship between P(y = 1|X) and the explanatory variables $X = (x_1 x_2 \dots x_k)$ is not linear and that the probabilities vary between 0 and 1. In this sense the model has the following structure: $P(y = 1|x_1, x_2, \dots, x_k) = G(\beta_0 + \beta_1 x_1 + \dots + \beta_k x_k)$

where G refers to a function which satisfies the condition 0 < G(z) < 1, for any real value z. In the case of the logit model, G refers to the logistic distribution function: $G(z) = \frac{\exp(z)}{1 + \exp(z)}$

The estimation of the model's parameters uses the method of maximum likelihood. Only discrete variables were considered which are shown, in conjunction or individually, as determinant to the explanation of the model; whereas it is noted, that according to the logit model with robust variance (robust Huber / White estimator) all parameter signals are in line with theoretical expectations. The model's global specification test reveals no evidence of omitted explanatory variables that are significant in explaining the dependent variable and the Pearson and Hosmer-Lemeshow adjustment tests show that the model is fitting to the data.

⁸⁸ The unit of observation used in this is the home, making a total of 7,642 sample cases responding to the questions considered.

⁸⁹ This analysis is provided by ICP-ANACOM based on Marktest microdata – *Barómetro de Telecomunicações* (Telecommunications Barometer) Study, 2nd half 2011.

⁸⁷ This type of model makes it possible to identify, in an integrated manner, the economic and socio-demographic factors that most strongly distinguish homes which subscribe vs. home that do not subscribe to the pay-television service.

The dependent variable refers to a binary variable that can be 1 (where the household does not have the subscription television service) or 0 (where the household does have the subscription television service). The following explanatory variables were considered: the discrete variables of Marktest region, social class, gender, age group, level of education, employment status, family size, presence of children or elderly in the home.

- the dwelling's geographical location is a differentiating component determining subscription or non-subscription to the pay-TV service. Homes located in the North Interior and North Coast regions are much less likely to have the subscription TV service;
- the household's social class also influences subscription to STVS. The lower the social class of the household, the greater is the tendency not to acquire the service;
- respondents with lower qualifications (less than or equal to 1st cycle of basic education) and respondents aged up to 45 are especially unlikely to acquire the TV subscription service;
- the presence of children in the home increases the propensity of subscription to the subscription TV service;
- individuals who live alone are less likely to subscribe to pay-television.

Regarding the main reasons for not having subscription television, 31 percent of respondents continue to consider the service as too expensive; about 20 percent cited lack of need and 19 percent lack of interest.

	4Q2011
Very expensive / financial difficulties	30.6↑
It is not necessary / not essential	19.5 ↓
Do not want / dislike / not interested	19.4↑
Seldom watch television	13.2
Decision is made by another person	1.9 *↓
Spend little time at home	6.3 * ↑
No/poor coverage in area of residence	1.7 *
Moved house recently / planning to move	#
[Other]	7.0
[Don't know/No response]	4.5↑

Table 115 – Reasons for not having STVS

Unit: %

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer), 4th quarter 2011

Base: Total households with voice electronic communications service and without access to subscription TV service

Note 1: Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate. Note 2: Multiple choice question.

Note 3: The upward pointing arrow signals a statistically significant increase between the instance t-1 and t and a downward arrow signals a statistically significant decrease between these two instances.

5.3.3. Service usage

The evolution reported in the number of subscribers to subscription television service in its various forms, and respective penetration is presented below.

Usage of subscription TV service: an integrated perspective

There were around 2.8 million subscription television customers at the end of 2011, 202 thousand more than in the previous year.

	2010	2011	Var. (%) 2010/2011	Var. (%) annual average 2007/2011	Var. (%) accumulated 2007/2011
Cabo	1,438	1,448	0.6 %	-0.7 %	-2.8 %
DTH	670	699	4.3 %	9.7 %	44.6 %
FTTH/B	143	263	83.8 %	-	-
ADSL	498	567	8.6 %	>100 %	>100 %
FWA	25	-	-	-	-
Total	2,774	2,977	7.3 %	10.3 %	47.8 %

Table 116 – Number of subscription TV subscribers

Units: thousands of subscribers, %

Source: ICP-ANACOM

The number of subscribers reported as at the end of 2011 is slightly below the forecast range resulting from the recent historical trend in this variable.



Graphic 103 – Evolution in number of subscription TV subscribers (all technologies) and forecast range

Unit: thousands of subscribers

Source: ICP-ANACOM

Note 1: * Forecast range with a significance level of 95 percent.

Note 2: A linear trend regression model was used (with the following significant independent variables at a 95 percent confidence level: dummy with linear trend from the 4th quarter 2007, coinciding with the spin-off da PT Multimédia (agora ZON): Y = 1.696.176 + 17.728,22 + (-515.066 + 46.110,6t) D4T2007. Adjusted R² is 0.998.

This service's penetration rate was 51.8 per hundred conventional dwellings. However, given that the number of traditional private dwellings includes dwellings of habitual residence and dwellings of seasonal use or second homes, it is also relevant to calculate penetration based on the number of private households. In this case, STVS penetration was 73 per 100 families.

Compared to other EU countries⁹⁰, pay-TV penetration in Portugal was slightly above the average.

⁹⁰ Data with reference to the second quarter of 2011.



Graphic 104 – Comparison of penetration of subscription TV subscribers – 2Q11

Unit: subscribers per 100 private households

Source: EC Digital Agenda 2012 (Provisional data with reference to July 2011)

It is found that STVS penetration was higher in more densely populated areas, particularly in the regions of Greater Lisbon and Greater Porto and in the Autonomous Regions. On the other hand, the North interior and parts of the Centre and Algarve had lower penetration rates.

Figure 10 – Geographic distribution of the penetration of STVS (Mainland Portugal)



25 a 50 0 a 25 0

281/501



Figure 11 – Geographic distribution of STVS penetration (Autonomous Regions)

Source: ICP-ANACOM

In 2011, offers supported over optical fibre (FTTH/B) were the main drivers of the service's growth in terms of number of subscribers, with over 120 thousand additional customers on a net basis. About six out of every 10 new customers in net terms subscribed to services supported on this platform. Despite the high growth rate recorded (83.8 percent), FTTH/B made up only 8.8 percent of total subscribers.

The number of STV subscribers supported over ADSL increased by 69 thousand in 2011, representing about one third of new subscribers on a net basis. The reported growth (8.6 percent) was nevertheless below the average of recent years, possibly as a result of the appearance of offers based on own next generation networks. ADSL represented 19 percent of total subscribers.

DTH grew 4.3 percent in 2011, below the average of the last five years. The 29 thousand new subscribers to the service with this form of access were not enough to maintain the relative weight, which fell to 23.5 percent, 0.7 percentage points less than in the previous year.

After three consecutive years of decline in the number of cable TV subscribers, subscriber numbers recovered by around 9.1 thousand in 2011. The cable TV remained the main form of access to the service with 48.6 percent of all users of the subscription TV service.





Unit: thousands of subscribers

Source: ICP-ANACOM

In relative terms, the presence of DTH is notable, especially in the centre where it is in the majority and in the Azores and the Alentejo where it is virtually in line with cable and ADSL, respectively. In the Lisbon and Madeira regions, the cable television service represented more than 50 percent of the total, while it was also the most widely used platform in the North (45.2 percent). FTTH/B was mainly present in Lisbon and in the North.

NUTS II	Cable	DTH	FTTH/B	ADSL
North	45.2	27.8	9.6	17.4
Centre	32.3	39.9	3.7	24.0
Lisbon	66.0	6.9	14.5	12.5
Alentejo	24.8	36.4	0.1	38.7
Algarve	41.3	22.4	4.1	32.2
Autonomous Region of Azores	39.0	37.7	1.5	21.8
Autonomous Region of Madeira	54.1	27.1	3.1	15.7
Total	48.6	23.5	8.8	19.1

Table 117 – Distribution of total subscribers by NUTS II region and by technology – 2011

Source: ICP-ANACOM

Unit: %

In 2011, total revenues from the stand-alone subscription TV service and from bundles of services that include this service totalled 1,166,1 million euros. Of this amount, 340,1 million euros is derived from stand-alone offers, 138,4 million is derived from double play offers. The remaining 687,6 million is derived from triple play bundles. Comparisons with previous year are not shown, since the definitions of these indicators have changed.

Table 118 – Revenue from subscription TV services

	2011	
TV only	340,058	29.2%
2 Play		
TV+FBB	41,171	3.5%
TV+MBB	2,441	0.2%
TV+Fixed telephone	94,835	8.1%
3 Play		
TV + Internet + Fixed telephone	684,572	58.7%
TV+Fixed telephone + MBB	2,987	0.3%
Total	1,166,055	100%

Unit: thousands of euros

Source: ICP-ANACOM

Evolution of the CDS: number of subscribers

At the end of 2011, there were around 1.45 million CDS subscribers in Portugal⁹¹, an increase of about 9 thousand subscribers over the previous year (an increase of 0.6 percent). This value is slightly higher than that resulting from the recent historical trend.



Graphic 106 - Evolution of cable TV subscribers and forecast range

Unit: thousands of subscribers

Source: ICP-ANACOM

Note 1: * Forecast range with a significance level of 95 percent.

Note 2: The modelling was performed from 4th quarter of 2004, given that on this date there was a change of series effected by one of the operators. A linear regression model was used with the following significant independent variables at a 95 percent confidence level: linear trend until 1st quarter 2008 and logarithmic trend from 2nd quarter 2008. This period of change in trend coincides with increased competition associated with the offer of bundled services after the spin-off of PT Multimédia. The adjusted R² is 0.95.

⁹¹ This number includes services provided under the protocol signed between the Government of the Republic, the Regional Governments, ICP-ANACOM and an operator of television distribution networks currently operating in each of these two regions and which seeks to provide the citizens of the archipelagos with free access to the national mainstream channels as well as enable gradual migration from analogue to digital technology. The services provided under these protocols covered around 9.7 thousand households in 4Q11.

From 2nd quarter 2008, there was a change in trend of the subscribers series due to increased inter-modal competition resulting from the spin-off of PT Multimédia.

Until that time the number of cable customers had been growing - on average the service added about 11 thousand new subscribers each quarter. Subsequently, the trend was reversed into a slight decline (negative quadratic trend).

The value reported was near the upper limit of the forecast range in 2010 and exceeded this limit in 2011. This evolution can be associated with multiple play offers supported over EuroDOCSIS 3.0.

In 2011, the reported growth is due mainly to the North and Centre regions, which grew above the average of the last five years. Lisbon, as the region where penetration of new FTTH/B networks is higher, continues to lose cable TV subscribers, along with the autonomous regions. In the Alentejo and Algarve, where penetration is lower, growth was above-average.

	2010	2011	Var. (%) 2010/2011	Var. (%) annual average 2007/2011	Var. (%) accumulated 2007/2011
North	377	390	3.5%	1.4%	5.9%
Centre	173	179	3.4%	0.0%	0.0%
Lisbon	687	679	-1.2%	-1.5%	-6.0%
Alentejo	44	47	7.4%	0.0%	-0.2%
Algarve	53	54	2.1%	-1.0%	-4.1%
Autonomous Region of Azores	43	41	-3.3%	-2.5%	-9.7%
Autonomous Region of Madeira	62	57	-7.0%	-4.9%	-18.2%
Total	1,438	1,448	0.6%	-0.7%	-2.8%

Table 119 – Number of CDS subscribers

Units: thousands of subscribers, %

Source: ICP-ANACOM

Graphic 107 – Evolution in CDS subscribers



Unit: thousands of subscribers

Source: ICP-ANACOM

Meanwhile, it appears that 48 percent of subscribers to the cable television distribution service are concentrated in Lisbon (46.9 percent of subscribers) and the North region (26.9 percent).

Graphic 108 – Distribution of subscribers by NUTS II – 2011



Unit: %

Source: ICP-ANACOM

At the end of 2011, about 79.2 percent of CDS subscribers were already receiving the signal in digital format.

Table 120 – Number	of	digital	CDS	subscribers
--------------------	----	---------	-----	-------------

	2010	2011	Var. (%) 2010/2011
North	293	322	9.8%
Centre	124	126	1.7%
Lisbon	516	548	6.3%
Alentejo	32	34	5.5%
Algarve	39	42	8.5%
Autonomous Region of Azores	26	26	2.1%
Autonomous Region of Madeira	45	48	7.3%
Total	1,074	1,147	6.7%

Units: thousands of subscribers, %

Source: ICP-ANACOM

Evolution in CDS: penetration

In 2011, the penetration rate of cable television subscribers, calculated in terms of dwellings, was reported at 25.2 subscribers per 100 dwellings. Between 2007 and 2011, the penetration rate of cable television subscribers in terms of total households fell 1.4 percentage points.

NUTS II	2010	2011	Var. (p.p.) 2010/2011	Var. (p.p.) annual average 2007/2011	Var. (p.p.) accumulated 2007/2011
North	20.2	20.9	0.7	0.2	0.6
Centre	12.3	12.7	0.4	-0.1	-0.3
Lisbon	48.3	47.7	-0.6	-1.0	-4.1
Alentejo	9.4	10.1	0.7	 -0.1	 -0.2
Algarve	14.9	15.3	0.3	-0.4	-1.5
Autonomous Region of Azores	39.8	38.5	-1.3	-1.4	-5.7
Autonomous Region of Madeira	50.3	46.8	-3.5	 -3.2	-12.9
Total	25.0	25.2	0.2	-0.4	-1.4

Table 121 – Penetration of cable TV subscribers in terms of total households

Units: subscribers per 100 dwellings, p.p.

Source: ICP-ANACOM; INE (Statistics Portugal)

It is also possible to measure the penetration of cable TV subscribers in terms of the sum of dwellings cabled by each operator.


Graphic 109 – Evolution in CDS penetration in terms of cabled dwellings

Unit: subscribers per 100 cabled dwellings Source: ICP-ANACOM

As can be seen, the service's penetration rate was about 36.1 per 100 cable dwellings.

Meanwhile, according to available information, it appears that the penetration of cable television in homes is above average when compared to rates elsewhere in Europe.



Graphic 110 – Comparison of the penetration rate of cable TV subscribers in relation to dwellings - 2Q11

Unit: subscribers per 100 dwellings

Source: EC Digital Agenda 2012 (provisional data)

DTH Service

The DTH service is an important component of the activity of a number of cable distribution network operators, including Group ZON/TV Cabo and, since 2008, PTC.

At the end of 2011, there were 699 thousand subscribers to the satellite television distribution service in Portugal⁹². In 2011, growth in this service was reported at 4.3 percent, which in absolute terms translates to the addition of about 28 thousand new subscribers, which is below the average of the last five years.

⁹² This number includes services provided under the protocol signed between the Government of the Republic, the Regional Governments, ICP-ANACOM and an operator of television distribution networks currently operating in each of these two regions. The services provided under these protocols covered around 31.8 thousand dwellings in 3Q11.

Between 2007 and 2011, annual growth rates for the DTH service were reported which were significantly higher than those reported for the cable television distribution with an average of about 54 thousand new subscribers every year, corresponding to an average growth rate of 9.7 percent per year.

The growth reported in 2011 is within the forecast range resulting from the recent historical trend.





Unit: thousands of subscribers

Source: ICP-ANACOM

Note 1: * Forecast range with a significance level of 95 percent.

Note 2: A regression model was used with quadratic trend and with the following independent significant variables at a confidence level of 95 percent: *dummy* with quadratic trend associated with the entry of other providers in the market (TVTEL in 3rd quarter 2007 and PTC in 2nd quarter 2008) and *outliers* in 1st, 2nd and 3rd quarters of 2006 as a result of serial changes made by an operator: $Y = 119526,4 + 2097,69t - 340,51t^2+(-1095983 + 53532,74t - 495,28t^2)$ D3Q2007 - 26 045,4Outlier1Q06 - 23 675,2Outlier2Q06 - 24 202. Adjusted R² is 0.998.

Since 3rd quarter 2007, there have been changes in the structure of the series referring to the number of customers of the DTH service. This change resulted from new entrants in the market from that date (TVTEL in that quarter and then PTC in 2nd quarter 2008).

Until 3rd quarter 2007, the trend in the number of customers had been increasing but with a sharp slowdown (negative quadratic trend). After the entry of these operators in these markets, the trend changed, showing stronger growth (positive quadratic trend).

In terms of the regional distribution of growth in the number of subscribers, the North and Centre were the regions that contributed most in absolute terms in 2011. In the Azores, Algarve and Lisbon subscriber numbers declined.

	2010	2011	Var. (%) 2010/2011	Var. (%) annual average 2007/2011	Var. (%) accumulated 2007/2011
North	230	240	4.2%	11.2%	52.9%
Centre	204	221	8.6%	12.8%	61.7%
Lisbon	73	71	-2.8%	8.5%	38.7%
Alentejo	65	69	7.0%	7.1%	31.7%
Algarve	30	29	-1.6%	7.0%	31.1%
Autonomous Region of the Azores	42	40	-5.4%	-2.8%	-10.6%
Autonomous Region of Madeira	27	29	6.1%	10.5%	48.8%
Total	670	699	4.3%	9.7%	44.6%

Table 122 – Number of DTH subscribers

Units: thousands of subscribers, %

Source: ICP-ANACOM

At the end of 2011 there were DTH customers in all municipalities.

Graphic 112 – Evolution in DTH TV subscribers



Unit: thousands of subscribers

Source: ICP-ANACOM

DTH was present mainly in the North and Centre of the country. The graph below illustrates the geographic distribution of DTH subscribers as at the end of 2011, with the North (34 percent of the total) and Centre (32 percent) regions remaining with the highest percentage of users of this technology.



Graphic 113 – Distribution of DTH TV subscribers by NUTS II – 2011



Source: ICP-ANACOM

In 2011, the penetration rate of satellite TV subscribers was reported at 12.2 subscribers per 100 dwellings. Between 2007 and 2011, the penetration of satellite TV subscribers in terms of total dwellings increased by 3.5 percentage points.

According to available information, Portugal is placed 13th in the European rankings in terms of penetration of satellite TV subscribers, with a penetration rate of 17.1 per 100 homes.



Graphic 114 – Penetration of satellite subscribers in terms of dwellings

Unit: subscribers per 100 dwellings

Source: EC Digital Agenda 2012 (provisional data)

Note: Data from Greece refers to 2009. Data from Portugal refers to DTH only.

Subscription television service over ADSL

As mentioned above, towards the end of 2005, IPTV-based subscription TV services appeared supported over ADSL (and also over DVB-T⁹³). The penetration of these services has continued to grow at very significant rates since PTC's entry into these markets, representing about 19.4 percent of subscription television offers.

In 2011, there were 567 thousand subscribers in Portugal, 69 thousand more than in the previous year, representing growth of 13.9 percent. After growth in recent years, the ADSL is starting to slow down.

⁹³ This offer was from AR Telecom and was discontinued in November 2011.

The growth reported in 2011 is in line with the historical trend observed since the launch of the service (increasing linear trend), approaching the lower limit of the forecast range resulting from this trend.





Unit: thousands of subscribers

Source: ICP-ANACOM

Note 1: * Forecast range with a significance level of 95 percent.

Note 2: Stationary series modelling was used - primary consecutive differences after log transformation - with significant lags evident of three periods of the dependent variable: $\Delta lnYt = 0.0068 + 0.46\Delta lnY_{t-3}$ with adjusted R² of 0.92.

These offers are present in 297 of Portugal's 308 municipalities, including in the Autonomous Regions.

Table 123– Subscribers of offers supported over ADSL

	2010	2011	Var. (%) 2010/2011
57) North	130	150	15.2%
58) Centre	108	133	23.4%
59) Lisbon	131	129	-2.1%
60) Alentejo	61	73	20.0%
61) Algarve	36	42	15.6%
62) Autonomous Region of the Azores	18	23	29.8%
63) Autonomous Region of Madeira	12	17	33.9%
Total	498	567	13.9%

Unit: thousands of subscribers

Source: ICP-ANACOM

The service's penetration in terms of total dwellings is 9.9 per 100 dwellings. Meanwhile, compared to other EU countries, according to data from the European Commission's Implementation Report, Portugal is 4th in the ranking of penetration of IPTV subscribers per 100 dwellings, above the European average.



Graphic 116 - Penetration of IPTV subscribers in terms of total households - 2Q11

Unit: subscribers per 100 dwellings

Source: EC, Digital Agenda 2012 (provisional data)

Subscription television service over optical fibre (FTTH)

The first offer of subscription TV over optical fibre to the customer's home came in 2007. At the end of 2008, a second offer appeared, also entirely based on optical fibre. In 2009, the number of customers grew very significantly, and in 2010 the number of customers exceeded 100 thousand.

During the 2011, the number of subscription TV customers over optical fibre reached about 263 thousand, representing a penetration rate of 4.6 per 100 conventional dwellings and 6.7 per 100 households.

	64) 2010	65) 2011	Var. (%) 2010/2011
66) North	67) 49	68) 83	69) 69.8%
70) Centre	71) 12	72) 21	73) 71.0%
74) Lisbon	75) 76	76) 149	77) 96.1%
78) Alentejo	79) -	80) 0.1	81)
82) Algarve	83) 3	84) 5	85) 83.1%
86) Autonomous Region of the Azores	87) 1	88) 2	89) 49.3%
90) Autonomous Region of Madeira	91) 2	92) 3	93) 32.7%
94) Total	95) 143	96) 263	97) 83.4%

Table 124 – Subscription television service subscribers over optical fibre

Unit: thousands of subscribers

Source: ICP-ANACOM

About 88 percent of STVS subscribers using FTTH are in Lisbon and Porto.

5.3.4. Assessment of consumers

According to Marktest's *Barómetro de Telecomunicações* (Telecommunications Barometer), overall satisfaction with the paid television service (measured on a scale of 1 to 10, from "dissatisfied" to "very satisfied") is high. About 84 percent of respondents rate the service with a score of 7 or higher. Compared to the previous year, the proportion of high positive ratings (9 or 10) given to the service decreased by about 12 percentage points.

Table 125 – Level of overall satisfaction with subscription TV service that is provided by the operator

	4Q2009	4Q2010	4Q2011
Negative (1-4)	5.7	3.6 * ↓	3.6 *
Low positive (5-6)	15.6	12.8 ↓	14.7
Medium positive (7 and 8)	42.2	39.7	50.1 ↑
High positive (9 and 10)	36.7	43.9 ↑	31.7↓
Total	100	100	100

Unit: %

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q2009 to 4Q2011

Base: Total homes with voice electronic communications service and access to subscription TV service (excluding non-responses) Note 1: Scale of original measurement: 1: Completely dissatisfied; 10: Completely satisfied.

Note 2: Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate.

Note 3: The upward pointing arrow signals a statistically significant increase between the instance *t*-1 and *t* and a downward arrow signals a statistically significant decrease between these two instances.

This high satisfaction is reflected in a relatively low intention to switch providers.

Table 126 – Intention to switch subscription TV provider in the next three months

	4Q2011
Evidence of intention to switch providers in the next three months (1-4)	3,5 *
Indecision (5-9 and Don't know/No response)	13,1
No intention of switching provider in the next three months (10)	83,4
Total	100

Unit: %

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q2011

Base: Total homes with voice electronic communications service and access to subscription TV service (excluding non-responses)

Note 1: The original response scale: 1 (Definitely going to switch), 10 (Definitely not going to switch).

Note 2: Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate.

5.3.5. Profile of consumers less satisfied with the subscription TV service (STVS)

In order to characterize the residential consumer of the subscription TV service who are "less satisfied customers", such customers are considered as those who expressed a level of satisfaction less than or equal to 5 points with the overall service provided by their main provider of STVS (on a scale of 1 "totally dissatisfied" to 10 "totally satisfied"). In contrast, the "more satisfied customer" refers to customers who expressed a level of satisfaction exceeding 5 points.

According to data from the 2nd half of 2011 in Marktest's *Barómetro de Telecomunicações* (Telecommunications Barometer), it appears that the less satisfied group represents 9.4 percent of dwellings with the subscription TV service⁹⁴.

⁹⁴ Households that did not respond when quizzed about the level of overall satisfaction with the STVS provider were not considered.

On average less satisfied consumers rated the service with 4.1 points. Pricing and customer service are the factors with the lowest average rating in both groups and are the factor which determine greater discrepancy between them.





Unit: scale 1 (Totally dissatisfied) to 10 (Totally satisfied)

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer), 2nd half 2011

Base: Homes with voice electronic communications service and with subscription TV service (excluding non-responses)

Note: The absolute margin of error in the averages on a scale of 1 to 10 are less than 0.06 for group of "more satisfied customers" and less than 0.22 for the group of "less satisfied customers".

In order to characterize the profile of less satisfied residential consumers with a view to other analysis parameters (including socio-demographic and economic characteristics of the household, consumption characteristics of other electronic communication services, type of STVS use in terms of access, the number of channels and possession of encrypted channels) a discrete choice econometric model is estimated - logit⁹⁵.

⁹⁵ The dependent variable is binary with the value 1 (where the home is "less satisfied" with the STVS) and 0 (where the home is "more satisfied" with the STVS). The available independent variables selected to explain, initially, the situation of lower customer satisfaction refer to:

According to the analysis⁹⁶:

- The age of the respondent influences the level of satisfaction with the STVS. As the age of the respondent rises and up to around 50 years, subscription TV customers, there is increased likelihood of belonging to the group of customers who are less satisfied with the service provider and, possibly, who are more demanding.
- Subscription TV customers with less than 60 channels are more likely to belong to the group of less satisfied customers.

socio-demographic and economic characteristics (Marktest region, social class, family size, presence of children
or elderly in the home, age and gender of the respondent, level of education, employment status and professional
status of the respondent);

possession of services and types of access (possession of BLM, STF or SAI at home, access to subscription TV service over by satellite or optical fibre, possession of subscription TV service as part of a bundle);
 characteristics of the service: number of contracted channels, acquisition of extra channels.

The logit models are based on the assumption that the relationship between P(y = 1|X) and the explanatory variables $X = (x_1 x_2 \dots x_k)$ is not linear and that the probabilities vary between 0 and 1. In this sense the model has the following structure: P(y = 1|X) where G refers to a function which satisfies the condition 0 < G(z) < 1, for any real value z. In the case of the logit model, G refers to the logistic distribution function: $G(z) = \frac{exp(z)}{1+exp(z)}$.

The estimation of the model's parameters uses the method of maximum likelihood. Only discrete variables were considered which are shown, in conjunction or individually, as determinant to the explanation of the model; whereas it is noted, that according to the logit model with robust variance (*robust Huber/White estimator*) all parameter signals are in line with theoretical expectations. The model's global specification test reveals no evidence of omitted explanatory variables that are significant in explaining the dependent variable and the Pearson and Hosmer-Lemeshow adjustment tests show that the model is fitting to the data.

⁹⁶ This analysis is provided by ICP-ANACOM based on Marktest microdata - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 2nd half 2011.

THE FIXED TELEPHONE SERVICE (FTS) AND NOMADIC VoIP

6. The fixed telephone service (FTS) and nomadic VoIP

This chapter outlines the situation as reported with regard to the FTS as at the end of 2011, describing in particular the provision of this service, the profile of its use and users and the evolution reported.

A summary is given below of the main aspects of the evolution of the service during 2011.

6.1. Key aspects of evolution in 2011

In 2011, the trend of increased penetration of the FTS in Portugal, already detected in the previous year, continued – penetration of the FTS rose to 42.6 accesses per 100 inhabitants, exceeding the European average. This increase resulted mainly from the penetration of new FTS offers, especially offers of VoIP provided as part of multiple play offers, including offers based on optical fibre (FTTH/B) and EuroDOCSIS 3.0, and offers based on the global system for mobile communications (GSM) / third generation mobile communications (UMTS) provided at a fixed location.

This increase in penetration is not general among the different socio-demographic groups. In fact, in homes where the respondent was older (55 years or more), had a lower level of education (less than or equal to 1st cycle of basic education) or where the respondent is between 35 and 54 years old and has a low level of education, there is a tendency towards a lower FTS penetration rate as from July 2010.

- Likewise, an increase in traffic was observed in terms of fixed-fixed minutes (1.9 percent), which, however, did not result in increased traffic per customer.
- About 70 percent of residential offers where the FTS is included allow unlimited calls to the national fixed network. Of these, 47.4 percent offer unlimited calls 24 hours per day, 15.8 percent offer unlimited calls at night and 6.6 percent offer unlimited calls at night, on weekends and holidays.

Meanwhile, revenues from the service declined 22.2 percent compared to 2010. This change in revenue does not, however, take into account the revenues from the service

when it is included in a bundles offer. As such, the decline mentioned may be overestimated.

- Grupo PT's share of accesses installed at customer request (56.0 percent) declined by 3.6 percentage points from a year earlier. The alternative providers' share of direct access subscribers in Portugal is the second highest among EU countries.
- In 2011, the prices charged by the incumbent operator for residential customers were below the average prices charged by incumbents in the EU19 for all consumer profiles.

The simple average price charged in respect of stand-alone offers is 7.20 euros, with a maximum of 12.50 euros. In terms of FTS offers inserted in bundles, representing 64.5 percent of the residential offer, the average (simple) subscription varies between 21.90 euros and 65 euros, depending on the services included and the minimum between 10 and 52 euros.

It should also be noted that the FTS has generally high satisfaction levels: about 84
percent of users reported positive satisfaction for the overall service provided by the
operator.

6.2. The offer of the fixed telephone service (FTS)

The service is provided by entities with general authorization to provide this service and also by the provider of the universal service (US).

The services and undertaking offering these services in Portugal are described in more detail below.

6.2.1. Platforms and technologies for accessing the service

Access to the public telephone network at a fixed location can be offered using various methods:

 pairs of copper wires – this fixed support is used mostly by PTC, the incumbent operator, and is currently the support that provides greater geographical and population coverage. In 2002, with implementation of the reference unbundling offer (RUO), alternative operators started 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, surrounded by a shield of braided copper wire, which is separated from the central wire by an insulating material. This type of cable is designed for transmission of electrical signals of frequencies higher than those supported by a simple pair of metallic wires. It is one of the key components of hybrid networks used for the distribution of CATV (HFC – Hybrid fibre coaxial).

This form of access allowed Cabovisão and ZON to acquire a significant share of accesses to the public telephone network at a fixed location, and supported a significant increase in the service's penetration;

Fibre To The Home (FTTH) – physical means of transmission (usually a cable with glass fibres) in which information is transported in the form of light pulses. This is a broadband support which, where combined with appropriate equipment, can provide capacity for the transmission of large amounts of information over large distances and with a low level of signal loss. The majority of providers – Onitelecom, Sonaecom, Colt Technology Services, Unipessoal (Colt Telecom), AR Telecom, Refer Telecom, Cabovisão, Vodafone and PTC – have installed optical fibre on their access networks.

Coverage of these networks and the number of customers with offers supported over this type of access has grown very significantly;

 access supported using frequencies allocated for the provision of MTS and code division multiple access (CDMA). ICP-ANACOM allowed the use of frequencies assigned to GSM, UMTS networks and CDMA for the provision of FTS, imposing limits on the mobility of the equipment used to provide this service.

This is a telephone service provided at a fixed location, supported using GSM technologies and networks, general packet radio service (GPRS), 3G mobile communications system (UMTS) and CDMA to gain access to the final customer, with access via mobile terminals. The mobile terminals receive and make calls in a defined geographical area corresponding to the customer's address.

By determination of ICP-ANACOM, the service must be provided using a terminal connected to a single pre-determined base transceiver station (BTS) when making, receiving and maintaining calls. In exceptional cases, and where technically justified and recognized as such by ICP-ANACOM, the association of the terminal with two – or at the most three – pre-determined BTS is allowed. The provider is also required to inform the end-users as to the features of the service, making clear, *inter alia*, that access to the service is provided only at the address stated by the end-user and that there are limitations in terms of locating the caller in calls made to the single European emergency number (112).

These solutions have given impetus to the market of access to the public telephone network at a fixed location since the end of 2004.

- FWA access technology which allows operators to supply customers with a direct connection to their telecommunications network through a fixed wireless connection at their premises to the operator's local exchange. Four operational providers (Sonaecom, Vodafone Portugal Comunicações Pessoais, S.A. (Vodafone), OniTelecom Infocomunicações, S.A. (Onitelecom) and PTC) have qualifying titles to operate this form of access. The wireless links are used to supplement non-wireless access networks, typically to provide access to non-residential customers;
- communications through power transmission network (PLC) access technology that uses power lines for broadband transmission of voice and data. The technology enables the provision of broadband Internet access, telephone and fax services. Onitelecom was the sole FTS provider using PLC fixed access. However, it suspended its offer in October 2006;
- hertzian beam transmission system for the propagation of electromagnetic waves through the atmosphere using parabolic antennas. Hertzian links have limited use given the high investment required for their maintenance;

With the exception of PLC whose supply was discontinued, virtually all major forms of access to the public telephone network at a fixed location are present in Portugal.

6.2.2. Geographic availability of the service

Figure 12 – Distribution of PT exchanges and PT exchanges with unbundled local loops (Mainland Portugal) – 4th quarter 2011



Source: ICP-ANACOM

Figure 13 - Distribution of PT exchanges and PT exchanges with unbundled local loops (Autonomous Regions of Madeira and the Azores) – 4th quarter 2011



Source: ICP-ANACOM

It is also possible to access the service using mobile networks, which cover most of the resident population, cable TV distribution operator networks, which provide reasonable coverage (see chapter 5), and alternative networks, including those based on FWA and optical fibre accesses that currently have limited coverage (see chapter 4).

With respect to publicly available telephone services at a fixed location, it is possible to use the services of the alternative operators throughout Portugal via indirect access and, since 2006, VoIP/VoB offers (in the case of users with fixed broadband Internet access).

6.2.3. Providers of the FTS and nomadic VoIP

Portugal's FTS providers are listed below. Details are also given of providers of nomadic VoIP and public pay-telephones.

FTS providers

As at the end of 2011, there were 24 entities authorized to provide the FTS⁹⁷. The following table lists the undertakings legally qualified to provide the FTS in 2011. The table includes data on the state of each provider at the beginning and end of the year, and also information on the market entries and exits during this period.

⁹⁷ Among these entities, there are four entities authorized to provide VoIP as perceived as traditional STF (see guidelines governing the regulatory approach to VoIP services, available at <u>http://www.anacom.pt/template12.jsp?categoryId=183074</u>).

Table 127 – FTS providers in 2011

Company name	Start	Entries	Exits	End
ADIANIS – Telecomunicações & Multimedia, S.A. ⁹⁸	NA			NA
AR Telecom – Acessos e Redes de Telecomunicações, S.A.	А			А
BROADMEDIA – Comunicações Globais, S.A.	NA			NA
BT Portugal – Telecomunicações, Unipessoal, Lda.	NA			NA
CABOVISÃO – Televisão por Cabo, S.A.	А			А
COLT Technology Services, Unipessoal, Lda.	А			А
EQUANT Portugal, S.A. (ORANGE) ⁹⁹	А			А
G9 SA –Telecomunicações, S.A.	А			А
MEDIA CAPITAL – Editora Multimédia, S.A.	NA			NA
MOBIZAPP – Comunicações Eletrónicas, S.A.	А		х	NA
ONITELECOM – Infocomunicações, S.A.	А			А
OPTIMUS – Comunicações, S.A.	А			А
Porteuphony – Comunicações, Unipessoal, Lda.	NA			NA
PT Comunicações, S.A.	А			А
PT PRIME – Soluções Empresariais Telecomunicações e Sistemas, S.A.	А		x	
REFER TELECOM – Serviços de Telecomunicações, S.A.	А			А
T – SYSTEMS ITC IBERIA, S.A. (Sociedade Unipersonal) – (Sucursal em Portugal)	NA			NA
TELSOCOMM – Telecomunicações, Marketing e Informática, Lda.	NA			NA
TMN – Telecomunicações Móveis Nacionais, S.A.	А			А
TRANSIT TELECOM, Sociedade Unipessoal, Lda.	NA			NA
UNITELDATA – Telecomunicações, S.A.	А			А
VODAFONE PORTUGAL – Comunicações Pessoais, S.A.	А			А
ZON TV Cabo Açoreana, S.A.	А			А
ZON TV Cabo Madeirense, S.A.	А			А
ZON TV Cabo Portugal, S.A.	А			А
Total active	17	-	-	15
Total non active	8	-	-	8
Total overall	25	-	-	24

Source: ICP-ANACOM

Key: A active; NA Non active

⁹⁸Correspondence returned undelivered.

⁹⁹ In Portugal, EQUANT (ORANGE) FTS provision is performed through Optimus.

Of the 24 undertakings legally authorized to provide these services, 15 were active as at the end of 2011. Of the 15 undertakings which were active as at the end of 2011, six provided the service using direct access only, one provided the service using indirect access only and the rest provided the service using both types of access.

Table 128 – FTS Providers

	2007	2008	2009	2010	2011
Authorized providers	25	24	25	25	24
Operational providers	17	17	17	17	15
Providers with direct and indirect access traffic	11	11	10	9	8
Providers with direct access traffic only	5	5	6	7	6
Providers with indirect access traffic only	1	1	1	1	1

Unit: number of providers

Source: ICP-ANACOM

There were also 21 entities legally authorized to provide voice telephone traffic resale services, while only four were operational in 2011.

Company name	Start	Entries	Exits	End
ADIANIS – Telecomunicações & Multimedia, S.A. ¹⁰⁰	NA			NA
AMPTEL – Telecomunicações & Informática, Lda.	NA			NA
CABLE & WIRELESS, S.L. (Sucursal em Portugal)	NA			NA
CGPT, Lda.	NA			NA
CLARA.NET PORTUGAL - Telecomunicações, S.A.	А			А
CYCLOP NET – Informática e Telecomunicações, Lda.	А			А
EPORTEL – Prestação de Serviços de Telecomunicações, Lda.	NA			NA
Global Crossing PEC Espanha, S.A.	NA			NA
HEARTPHONE – Comércio de Telecomunicações, Lda.	NA			NA
Manuel Soares & Pereira, Lda.	NA			NA
Media Capital – Editora Multimédia, S.A.	NA			NA
MEGACALL – Empresa de Telecomunicações, Unipessoal, Lda.	NA			NA
MOBIZAPP – Comunicações Eletrónicas, S.A.	А		х	NA
NACACOMUNIK – Serviços de Telecomunicações, Lda.	А			А
OFERTAXIC, Lda.	NA			NA
OVHHOSTING – Sistemas Informáticos, Unipessoal, Lda.	NA			NA
STV- Sociedade de Telecomunicações do Vale do Sousa, S.A.	А			А
Telemo Comunicaciones, S.L.	NA			NA
T – SYSTEMS ITC IBERIA, S.A. (Sociedade Unipersonal) – (Sucursal em Portugal)	NA			NA
WORLDBROKER TELECOMUNICAÇÕES – Sociedade de Telecomunicações e Multimédia, Lda. (World Telecom)	А			A
YMAZYM – Serviços de Telecomunicações, Lda. (Zona franca da Madeira) (IMAZYM)	NA			NA
Total active	6	-	-	5
Total non active	15	-	-	16
Total overall	21	-	-	21

Table 129 – Providers of voice telephone traffic resale services in 2011

Source: ICP-ANACOM

Key: A – active; NA - Not active

¹⁰⁰ Correspondence returned undelivered.

Table 130 – Providers of voice telephone traffic resale services

	2007	2008	2009	2010	2011
Authorized providers	13	15	18	21	21
Operational providers	5	5	4	6	5

Unit: number of providers

Source: ICP-ANACOM

Providers of public pay-telephones

The providers of public pay-telephones are listed below.

Table 131 – Providers of	of public pay-telephones in 2011	
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Company name	Start	Entries	Exits	End
ADIANIS – Telecomunicações & Multimédia, S.A.	NA			NA
Amazing Life, Unipessoal, Lda.	А			А
Bemaviada Unipessoal, Lda.	NA			NA
BLUE CARD – Serviços de Telecomunicações e Informática, Lda.	А			NA
Castelcall, Lda.	А		Х	NA
CGPT, Lda.	NA			NA
CHOUDHARY – Comércio de Equipamentos de Telecomunicações, Lda.	A			A
EPORTEL – Prestação de Serviços em Telecomunicações, Lda.	NA			NA
Especial Abraço, Unipessoal, Lda.	А		Х	NA
FLASHAD – Eletrónica e Comunicações, Unipessoal, Lda.	А			А
G9 SA – Telecomunicações, S.A.	NA			NA
Luckyprice, Lda.	А			А
MAGIC LASER, Lda.	А			NA
Manuel Soares & Pereira, Lda.	А			А
MINUT MIX – Comunicações, Lda.	А		Х	NA
MONEYCALL – Serviços de Telecomunicações, Lda.	А			А
Nipojasmim – Unipessoal, Lda.	А		Х	
OFERTAXIC, Lda.	NA			NA
PALCO DA VIDA – Telecomunicações Unipessoal, Lda.	А			А
PHONE ONE – Serviços de Telecomunicações, Lda.	A		Х	NA

Company name	Start	Entries	Exits	End
PT Comunicações, S. A.	А			А
RANUFONE, Unipessoal, Lda.		Х		NA
TELEMO Comunicaciones, S.L.	А			А
ULTRASERVE – Consultoria e Apoio Empresarial, Lda.	А			А
Wisevector – Telecomunicações, Lda.	А			А
ZZ-NADEEM – Comunicações e Informática Unipessoal, Lda.	А		Х	NA
Total active	17	-	-	11
Total non active	5	-	-	14
Total overall	22	3	-	25

Source: ICP-ANACOM

Key: A - active; NA - Not active

As at the end of 2011, 11 of the 25 providers authorized providers of pay-telephones were operational, and one new operator entered the market.

	2007	2008	2009	2010	2011
Authorized providers	9	15	21	22	25
Operational providers	5	10	16	17	11

Unit: number of providers

Source: ICP-ANACOM

Nomadic VoIP providers

In 2011, there were 23 providers authorized to provide nomadic VoIP services. Only eight are operational.

Table 1	33 - Prov	viders of	nomadic		in 2011
I able 1	33 - FIUN	iuei 5 01	nomauic	VUIF	

Company name	Start	Entries	Exits	End
A.T.C. Avant Telecom Consulting AG	NA			NA
AR Telecom – Acessos e Redes de Telecomunicações, S.A.	NA			NA
CLARA.NET PORTUGAL – Telecomunicações, S.A.	NA			NA
COMVOZ – Comunicações de Portugal	А		х	
EPORTEL – Prestação de Serviços em Telecomunicações, Lda.	NA			NA
G9 SA – Telecomunicações, S.A.	А			A
MOBIZAPP – Comunicações Eletrónicas, S.A.	А		x	NA
NACACOMUNIK – Serviços de Telecomunicações, Lda.	А			А
ONITELECOM – Infocomunicações, S.A.	NA			А
OPTIMUS – Comunicações, S.A.	NA			NA
PDM & FC – Projeto, Desenvolvimento Manutenção, Formação e Consultoria,				ΝΔ
Lda.	NA.			INA
PT Comunicações, S.A.	А			А
PT PRIME – Soluções Empresariais de Telecomunicações e Sistemas, S.A.	А		х	
REFER TELECOM – Serviços de Telecomunicações, S.A.	А			А
TRANSIT Telecom, Sociedade Unipessoal, Lda.	NA			NA
UNITELDATA – Telecomunicações, S.A.	NA			NA
VODAFONE PORTUGAL – Comunicações Pessoais, S.A.	NA			NA
VOIP-IT, Lda.	NA			NA
Voipunify Telecom, Lda.	А			А
VOXBONE, S.A.	А			А
ZON TV Cabo Açoreana, S.A.	NA			NA
ZON TV Cabo Madeirense, S.A.	NA			NA
ZON TV Cabo Portugal, S.A.	А			А
Total active	10	-	-	8
Total non active	13	-	-	13
Total overall	23		3	21

Source: ICP-ANACOM

Key: A active; NA Non-active

¹⁰¹ Companies allocated with 30 numbering range.

Table 134 – Providers of nomadic VoIP

	2007	2008	2009	2010	2011
Authorized providers	10	18	20	23	21
Operational providers	5	6	8	10	8

Unit: number of providers

Source: ICP-ANACOM

6.2.4. Offer structure and operator switching

At the end of 2011, there were 15 operational providers of the service of access to the public telephone network at a fixed location. The following are present in these markets:

- the five major electronic communications groups providing integrated offers and with a widespread presence in all markets and segments (Grupo PT, Grupo ZON, Optimus, Vodafone and Cabovisão);
- representatives of major international electronic communications groups (e.g., Colt Telecom, Equant) and other companies engaged in the provision of services to the corporate sector (e.g. Onitelecom, G9 SA) and to other large clients;
- providers of integrated or non-integrated offers located in specific geographical segments (e.g. Uniteldata);
- providers whose offer of electronic communications services, in some cases provided through resale, complemented the provision of other services (e.g. STV Telecom, Cyclop Net);
- small providers of public pay-telephones focused on certain destinations or segments (e.g.: Palco da Vida, Manuel Pereira & Soares).

Grupo PT was the leading provider of FTS access. In 2011, Grupo PT's share of main FTS accesses, totalled 58.6 percent, 1.8 p.p. less than in the previous year and 13.1 p.p. less than in 2007. Accesses benefiting from the Wholesale Line Rental Offer (WLRO) are counted as direct accesses of the alternative providers.

Since the end of 2006, Grupo PT has seen its share of accesses installed at customer request decline by 15.1 percentage points.

Table 135 –	Grupo	PT's	share	of	accesses
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	2007	2008	2009	2010	2011
Total main accesses	71.7	68.5	63.6	60.4	58.6
(Of which accesses installed at customer request)	(71.1)	(67.7)	(62.7)	(59.6)	(56.0)
Analogue accesses ¹⁰²	77.5	79.7	82.6	82.9	83.0
ISDN and Diginet	82.7	81.0	78.9	77.2	80.6
GSM / UMTS	1.9	2.0	1.4	1.0	0.8
VoIP / VoB	0.0	0.0	3.0	13.0	18.5

Unit: %

Source: ICP-ANACOM

ZON had the second highest share of accesses (17.4 percent). In recent years, ZON's share of accesses has grown very significantly thanks to the service provided as part of its multiple play offer.

¹⁰² The values reported for the shares of analogue access has changed relative to those published in previous years following a reclassification of analogue accesses which now include analogue cable telephony accesses .

Table 136 – Shares of main accesses

	4Q07	4Q08	4Q09	4Q10	4Q11
Grupo PT	71.7%	68.5%	63.6%	60.4%	58.6%
PT Comunicações	71.2%	67.9%	62.8%	59.4%	57.5%
PT Prime	0.4%	0.4%	0.6%	0.8%	1.0%
TMN	0.2%	0.2%	0.1%	0.1%	0.1%
Alternative providers	28.3%	31.5%	36.4%	39.6%	41.4%
Grupo ZON/TV Cabo ¹⁰³ , ¹⁰⁴	0.1%	3.8%	10.6%	14.8%	17.4%
ZON Portugal/ TV Cabo	0.0%	3.4%	9.7%	13.6%	16.0%
ZON Açores/ Cabo TV Açoreana	0.0%	0.2%	0.3%	0.5%	0.6%
ZON Madeira/ Cabo TV Madeirense	0.0%	0.3%	0.5%	0.7%	0.8%
Optimus/ Sonaecom	13.8%	14.1%	14.3%	12.9%	12.5%
Cabovisão	6.5%	6.4%	5.7%	5.8%	5.8%
Vodafone	1.4%	2.9%	3.8%	4.2%	4.3%
Onitelecom	1.7%	1.2%	1.0%	1.0%	0.8%
AR Telecom	0.5%	0.8%	0.8%	0.7%	0.2%
Other alternative providers	4.2%	2.2%	0.2%	0.3%	0.4%

Unit: %

Source: ICP-ANACOM

Note: There are providers that operate in specific market segments. The relative position of the operators in this table should not be interpreted as an indicator of the quality of services provided or of the performance of these operators in the segments they serve.

¹⁰³ During 4Q07 TV Cabo was included in a spin-off which was concluded during the month of November. By determination of 3 April 2008, this Authority clarified that, with the spin-off, PT Multimédia, now ZON Multimédia, would no longer be included in Grupo PT, whereby the obligations arising in respect of market analysis conducted pursuant to Title IV of Chapter II of the Law of Electronic Communications (LCE) which are binding upon said Group, do not apply. ZON Multimédia encompasses CATVP – TV Cabo Portugal, S.A., Cabo TV Açoreana, S.A. and Cabo TV Madeirense, S.A. In addition, on 24 November 2008, Autoridade da Concorrência (the Competition Authority) notified ZON Multimédia of its decision not to oppose the acquisition of the companies Grupo Parfitel (Bragatel, Pluricanal Leiria and Pluricanal Santarém), as well as TV Tel, enabling the merger by acquisition of these companies into ZON TV Cabo Portugal on 31 July 2009.

¹⁰⁴ ICP-ANACOM reports that the values considered in this table refer only to the service provided in respect of the authorisation granted for the provision of the telephone service at a fixed location and according to conditions which are perceived by the user as being equivalent to the traditional FTS (see regulatory approach to VoIP services at <u>http://www.anacom.pt/template12.jsp?categoryId=183074</u>). The values released by ZON include the total number of customers of services provided in respect of the authorisation granted for the provision of nomadic VoIP.

In terms of direct access customers, PTC also held the largest share (52.7 percent). The evolution of the share of direct access customers was similar to the evolution reported in share of accesses. Customers with WLRO activated were counted as direct customers of alternative operators.

	2007	2008	2009	2010	2011
Direct access customers	68.3	63.9	57.6	54.5	52.7
Indirect access customers	2.0	19.8	41.0	50.0	54.3

Table 137 – Customer shares of Grupo PT

Unit: %

Source: ICP-ANACOM

In terms of direct access customers, ZON remained the leading alternative direct access operator with a market share of 21.7 percent in the last year, increasing by 3 p.p. over the previous year. Optimus reported a share of 14.3 percent, 0.5 p.p. less than in the previous year.

Table 138 – Provide	r shares of di	rect access	customers
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	4Q07	4Q08	4Q09	4Q10	4Q11
Grupo PT	68.3%	63.9%	57.6%	54.5 %	52.7 %
PT Comunicações	68.0%	63.6%	57.4%	54.3 %	52.6 %
PT Prime	0.0%	0.0%	0.0%	0.1 %	-
TMN	0.2%	0.3%	0.2%	0.1 %	0.1 %
Alternative providers	31.7%	36.1%	42.4%	45.5 %	47.3 %
Grupo ZON/TV Cabo ¹⁰⁵ , ¹⁰⁶	0.1%	5.0%	13.6%	18.7 %	21.7 %
ZON Portugal/ TV Cabo	0.0%	4.4%	12.5%	17.1 %	19.9 %
ZON Açores/ Cabo TV Açoreana	0.1%	0.4%	0.7%	0.6 %	0.7 %
ZON Madeira/ Cabo TV Madeirense	0.0%	0.2%	0.4%	0.9 %	1.0 %
Optimus/ Sonaecom	16.5%	17.0%	16.6%	14.8 %	14.3 %
Cabovisão	7.6%	7.5%	7.2%	7.0 %	6.9 %
Vodafone	1.4%	3.1%	4.1%	4.2 %	4.3 %
AR Telecom	0.4%	0.8%	0.8%	0.7 %	0.0 %
Other alternative providers	5.6%	2.7%	0.1%	0.1%	0.1%

Unit: %

Source: ICP-ANACOM

Note: There are providers that operate in specific market segments. The relative position of the operators in this table should not be interpreted as an indicator of the quality of services provided or of the performance of these operators in the segments they serve.

¹⁰⁵ During 4Q07 TV Cabo was included in a spin-off which was concluded during the month of November. By determination of 3 April 2008, this Authority clarified that, with the spin-off, PT Multimédia, now ZON Multimédia, would no longer be included in Grupo PT, whereby the obligations arising in respect of market analysis conducted pursuant to Title IV of Chapter II of the Law of Electronic Communications (LCE) which are binding upon said Group, do not apply. ZON Multimédia encompasses CATVP – TV Cabo Portugal, S.A., Cabo TV Açoreana, S.A. and Cabo TV Madeirense, S.A. In addition, on 24 November 2008, Autoridade da Concorrência (the Competition Authority) notified ZON Multimédia of its decision not to oppose the acquisition of the companies Grupo Parfitel (Bragatel, Pluricanal Leiria and Pluricanal Santarém), as well as TV Tel, enabling the merger by acquisition of these companies into ZON TV Cabo Portugal on 31 July 2009.

¹⁰⁶ ICP-ANACOM reports that the values considered in this table refer only to the service provided in respect of the authorization granted for the provision of the telephone service at a fixed location and according to conditions which are perceived by the user as being equivalent to the traditional FTS (see regulatory approach to VoIP services at <u>http://www.anacom.pt/template12.jsp?categoryId=183074</u>). The values released by ZON include the total number of customers of services provided in respect of the authorization granted for the provision of nomadic VoIP.

According to the EC, the share of direct access subscribers of the alternative providers in Portugal was the second highest among the countries considered at the beginning of the second half of 2010.





Unit: %

Source: Digital Agenda Scorecard 2011 and Digital Agenda 2012 (provisional data)

According to available information, the share of alternative providers may continue to increase in 2012. According to *Marktest's Barómetro de Telecomunicações – Rede Fixa* (Telecommunications Barometer – Fixed Network) 2011¹⁰⁷, around 3.4 percent of dwellings intend to change their fixed network operator in the next three months.

¹⁰⁷ Barómetro de Telecomunicações – Rede Fixa (Telecommunications Barometer - Fixed network). 2011 The Barómetro Telecomunicações (Telecommunications Barometer) is a regular study conducted by Marktest for the Telecommunications sector. The universe of the Barómetro de Telecomunicações – Rede Fixa (Telecommunications Barometer – Fixed network) comprises dwellings in mainland Portugal or in the Autonomous Regions of Madeira and the Azores. A sample is compiled on a monthly basis which is proportional to and representative of the study's universe.

Table 139 - Intention to switch fixed network provider

	4Q2011 ¹⁵
Intention to switch provider in the next three months (1 to 4)	3.4*
Indecision (5-9 and Don't know/No response)	12.4
No intention of switching provider in the next three months (10)	84.2
Total	100

Unit: %

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer), 4th quarter 2011

Base: Total homes with fixed telephone service

Note 1: The original response scale: 1 (Definitely going to switch), 10 (Definitely not going to switch).

Note 2: The coefficient of variation is considered as sampling error indicator, based on the variance of the "proportion" or "average" estimator (according to case) of a simple random sample and assuming a significance level of 95 percent. The following classification is considered: reliable estimate when the coefficient of variation is less than 10 percent; acceptable estimate when the coefficient of variation is greater than or equal to 10 percent and less than 25 percent; unreliable estimate when the coefficient of variation is greater than or equal to 25 percent. Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate.

Alongside this evolution in access and customer shares, an increase has also been reported in number portability. During 2011, the upward trend in the volume of ported geographical numbers continued, increasing 13.3 percent. In absolute terms, the volume of ported numbers totalled about 1.49 million numbers, equivalent to 33 percent of all accesses.

Table 140 – Ported numbers (stock at the end of the year)

	2007	2008	2009	2010	2011
Geographic numbers	664,684	918,953	1,149,926	1,314,178	1,489,515
Non-geographic numbers	739	885	1,066	1,472	1,803
% ported numbers relative to number of accesses installed at customer request	15.8%	22.1%	26.6%	29.4%	33.0%

Units: 1 number, %

Source: ICP-ANACOM

At EU level, in October 2010, Portugal held sixth position with respect to ported numbers among all the countries considered



Graphic 119 – Percentage of transactions at the level of fixed number portability (October 2011)

Unit: %

Source: EC, Digital Agenda 2012 (provisional data)

Note: The indicator used by the EC is different from that mentioned previously in the text and differs from the indicator used in previous reports; the present report only considers fixed numbers ported between 1 January 2011 and 30 September 2011. Previously all ported numbers were considered since the beginning of the portability process until the end of the reported period.

Grupo PT increased its share of indirect access customers. This was due to the large increase in the number of indirect access customers of TMN – Telecomunicações Móveis Nacionais, S.A. (TMN).

When analyzing the offer structure, taking into account the share of traffic, it is apparent that the conclusions drawn are similar to conclusions presented above.

Since the beginning of liberalization there has been a progressive decrease in the proportion of voice traffic routed by the incumbent operator. In 2011, a decrease of 3.4 percent was reported in the share of voice traffic routed by the incumbent operator in terms of minutes and 0.6 percent in terms of call.

In terms of the destination of national voice traffic (mobile and fixed geographic), in 2011, alternative providers were responsible for about 42.8 and 38.4 percent of traffic in terms of calls and minutes, respectively.

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In relation to outgoing international traffic, the share of the alternative providers was around 42.4 percent in minutes routed and 39.6 percent in originated calls.

	2007	2008	2009	2010	2011
Voice traffic	67.6	65.0	61.6	58.6	57.2
National traffic (voice)	67.2	64.6	61.1	58.3	57.2
Traffic domestic fixed-fixed	67.6	64.9	61.1	58.4	57.3
National fixed-mobile traffic	64.6	63.0	61.0	58.2	55.5
Outgoing international traffic	74.2	71.2	68.1	62.7	57.6
Internet access traffic	91.4	94.1	95.3	94.4	89.9
Total traffic (voice + Internet)	68.7	65.7	62.0	58.9	57.4

Table 141 – Traffic shares of Grupo PT (minutes)

Unit: %

Source: ICP-ANACOM

Table 142 – Traffic shares of Grupo PT (calls)

	2007	2008	2009	2010	2011
Voice traffic	68.8	67.0	64.7	62.1	61.7
National traffic (voice)	68.8	67.1	64.7	62.0	61.7
Traffic domestic fixed-fixed	69.7	68.0	65.5	62.8	63.0
National fixed-mobile traffic	65.0	63.4	61.4	58.4	55.2
Outgoing international traffic	70.2	64.8	64.4	62.7	60.4
Internet access traffic	69.0	56.6	48.3	47.3	45.9
Total traffic (voice + Internet)	68.8	66.9	64.6	62.0	61.6

Unit: %

Source: ICP-ANACOM

With respect to the traffic shares of the alternative operators, in line with direct access, Grupo ZON is reported as having have the highest share (18.5 percent), followed by Optimus (12.4 percent)

	4Q07	4Q08	4Q09	4Q10	4Q11
Grupo PT	67.3%	65.1%	61.3%	59.8%	56.8%
PT Comunicações	61.0%	58.0%	54.6%	53.7%	56.2%
PT Prime	6.1%	6.2%	5.6%	5.3%	-
TMN	0.2%	0.9%	1.1%	0.8%	0.5%
Alternative providers	32.7%	34.9%	38.7%	40.2%	43.2%
Grupo ZON / TV Cabo ¹⁰⁸ , ¹⁰⁹	0.1%	4.2%	10.3%	14.5%	18.5%
ZON Portugal / TV Cabo	0.0%	3.7%	9.2%	12.9%	16.6%
ZON Açores / Cabo TV Açoreana	0.0%	0.2%	0.5%	0.7%	0.9%
ZON Madeira / Cabo TV Madeirense	0.0%	0.3%	0.6%	0.9%	1.0%
Optimus / Sonaecom	14.5%	14.2%	14.5%	12.5%	12.4%
Vodafone	3.8%	5.2%	6.2%	5.9%	5.5%
Cabovisão	3.3%	3.4%	3.6%	3.8%	4.1%
Onitelecom	2.9%	2.7%	2.2%	2.0%	1.8%
AR Telecom	1.8%	1.7%	1.4%	1.0%	0.7%
Colt Telecom	0.3%	0.5%	0.2%	0.2%	0.1%
Other alternative providers	6.0%	2.8%	0.3%	0.2%	0.2%

Unit: %

Source: ICP-ANACOM

¹⁰⁸ During 4Q07 TV Cabo was included in a spin-off which was concluded during the month of November. By determination of 3 April 2008, this Authority clarified that, with the spin-off, PT Multimédia, now ZON Multimédia, would no longer be included in Grupo PT, whereby the obligations arising in respect of market analysis conducted pursuant to Title IV of Chapter II of the Law of Electronic Communications (LCE) which are binding upon said Group, do not apply. ZON Multimédia encompasses CATVP – TV Cabo Portugal, S.A., Cabo TV Açoreana, S.A. and Cabo TV Madeirense, S.A. In addition, on 24 November 2008, Autoridade da Concorrência (the Competition Authority) notified ZON Multimédia of its decision not to oppose the acquisition of the companies Grupo Parfitel (Bragatel, Pluricanal Leiria and Pluricanal Santarém), as well as TV Tel, enabling the merger by acquisition of these companies into ZON TV Cabo Portugal on 31 July 2009.

¹⁰⁹ ICP-ANACOM reports that the values considered in this table refer only to the service provided in respect of the authorisation granted for the provision of the telephone service at a fixed location and according to conditions which are perceived by the user as being equivalent to the traditional FTS (see regulatory approach to VoIP services at <u>http://www.anacom.pt/template12.jsp?categoryId=183074</u>). The values released by ZON include the total number of customers of services provided in respect of the authorisation granted for the provision of nomadic VoIP.

Note: There are providers that operate in specific market segments. The relative position of the operators in this table should not be interpreted as an indicator of the quality of services provided or of the performance of these operators in the segments they serve.

In comparison to the rest of the EU as at the end of 2010, Portugal's incumbent operator had the eleventh lowest share of traffic.





Source: EC, Digital Agenda 2012 (provisional data)

In terms of the proportion of customers that use alternative providers to make calls, among the countries considered Portugal was 2nd in the rankings in terms of national calls and in terms of international calls in July 2011.



Graphic 121 - Percentage of customers who use alternative providers for fixed voice calls, July 2011

Unit: %

Source: EC, Digital Agenda 2012 (provisional data)

6.2.5. Offers of access to the fixed telephone network and telephone services offered to the general public at a fixed location

The FTS enables the user to make and receive national and international voice calls and is usually provided together with several applications, features and optional services.

Traditionally, telephone services were offered together (bundled) with access to the public telephone network at a fixed location. The service was provided via the fixed telephone network and the local access network was made up of copper wire pairs. The digits that made up the telephone number given to each subscriber line made it possible for the service user to associate that line with a given geographical area and a given service provider.

Tariffs were normally charged with two components, with clear separation between access (installation and subscription) and usage (price of calls). The price of calls was based on peak-load pricing and call prices were proportional to their distance.

This situation has changed due to regulatory, technological and commercial changes which have occurred in recent years.

Indirect access

With the implementation of "indirect access", the provision of access to public telephone network at a fixed location was separated from telephone services provided to the general public at a fixed location.

As from 1 January 2000, the users of publicly available telephone services at a fixed location began being served by the indirect access service in call-by-call selection mode. This function allows FTS users to make telephone calls using the services of FTS providers other than their access provider, by simply dialling the 10xy code of each operator. Initially, only long-distance and international calls were eligible for the provision of this indirect access service.

As from 1 July 2000, a new indirect access mode was launched: provider pre-selection. This option makes it possible for the calls made by any user to be routed to their preferred provider without the need to dial the selection code. Initially, pre-selection was implemented through the installation of an autodialler device on the customer's phone. On 1 October 2000, pre-selection ended its interim stage on the networks of Porto and Lisbon, with the installation of an autodialler no longer being needed; pre-selection began to be programmed at the operators' exchanges. On that same date, calls originating from the fixed networks destined for a mobile network (fixed-mobile calls) became eligible for indirect access, using both call-by-call selection and pre-selection. On 15 November 2000, pre-selection became available for customers in the rest of the country in its final format (without the installation of autodiallers).

After 1 January 2001, local and regional connections also became eligible for indirect access.

Indirect access was initially the means preferred by most of the alternative operators for entering the markets of telephone services provided at a fixed location, allowing them to obtain relatively high shares in terms of national and international traffic.

Portability

The possibility of maintaining a telephone number after changing operator, in a framework of competition, is another modification to the traditional way of providing the service imposed by the regulation of the sector.

Portability is a function giving subscribers of publicly available telephone services the possibility, upon request, of keeping their number or numbers, within the scope of the same service, regardless of the company offering it, in the case of geographical numbers in a given location, and in the case of other numbers throughout Portugal; portability was introduced to fixed networks on 30 June 2001 and to mobile networks on 1 January 2002.

Law no. 5/2004 of 10 February – *Lei das Comunicações Electrónicas* (Electronic Communications Law) empowers ICP-ANACOM to set the rules regarding the implementation of portability, which should take the form of a regulation.

In this context, ICP-ANACOM drafted Regulation no. 58/2005, published on 18 August, which establishes the principles and rules governing portability on the public telephone networks and which is binding upon all companies with portability obligations¹¹⁰. This regulation was subsequently amended in February (Regulation no. 87/2009), in July 2009 (Regulation no. 302/2009), and in March (Regulation no. 114/2012)¹¹¹.

Switching with portability is only possible within the same type of service. In other words, it is possible to switch provider of the telephone service accessible at a fixed location and maintain the same number, it is possible to switch provider of the mobile telephone service and maintain the same number, and it is also possible to switch provider of a given non-geographic service (eg. 800) and maintain the same number. But it is not possible, for example, to port a number from a provider of the telephone service accessible at a fixed location to a mobile telephone service provider (or nomadic VoIP) or visa-versa.

¹¹⁰ This regulation has been subject to a series of amendments (see <u>http://www.anacom.pt/render.jsp?contentId=940501</u>).

¹¹¹ Regulations available at <u>http://www.anacom.pt/render.jsp?categoryId=328895</u>.

Single bill

With the introduction of indirect access, users began receiving two telephone bills: one for access sent by the incumbent operator, and another for communications as charged by the alternative providers.

By determination of 14 December 2004, the alternative providers were given the possibility of presenting the end-customer with a single bill and a joint offer of access service and telephone services. This possibility is a result of regulatory obligation under the WLRO.

The WLRO is available to companies that, duly qualified for the purpose by ICP-ANACOM, provide the following services over a given PTC subscriber line:

i) FTS through pre-selection, regardless of the type of pre-selected traffic; and/or

ii) broadband Internet access services, including services based on unbundled lines in shared access mode.

Tariff changes and changes in the way the service is sold

In terms of tariffs, there have been constant innovations which have revolutionized traditional tariff models. On the one hand, there is a trend towards creating tariff bundles where components of access and use are combined, with the prices for usage including access, or with the formulation of access prices that are convertible into calls or with an associated calling credit.

Multiple play offers combining voice services, Internet access, television distribution and content are sometimes associated with these tariff changes. These offers are provided using the cable distribution networks, using LLU – regulated offer –, using FWA and optical fibre. Many of these offers provide free calls to certain destinations.

In cases where usage prices still exist, a phenomenon called "postalization" is occurring, which is the elimination of the proportionality between price and distance, and to a lesser extent, the elimination of peak-load pricing. At the same time, optional tariffs and promotional offers have multiplied

Voice over broadband services

Finally, mention should be made of the introduction of voice services based on broadband Internet access offers, within the scope of the multiple play offers already mentioned.

VoIP is a technology that allows the user to establish telephone calls over a data network such as the Internet, converting an analogue voice signal into a set of digital signals in the form of packets with IP, which can be sent, for example, over an Internet connection (preferably broadband).

The increase in broadband accesses for Internet use, together with the emergence of increasingly more stable protocols in terms of standardization, enable the current development of applications supporting video and voice interactive services, such as VoIP, assuring a voice quality perceived by the user as being close to that of the traditional telephone service. Accordingly, the VoIP service is increasingly being taken up by end-users.

There are currently several types of terminals (personal computers (PC), IP telephone, Personal Digital Assistants (PDA), etc...) enabled to make VoIP calls, while the physical access should preferably be broadband, since it is not yet viable to guarantee an adequate bandwidth for the operation of VoIP over a narrowband connection to the public internet. Broadband access may be based on wired technologies, such as ADSL, Cable, optical fibre and powerline, or on wireless technologies, such as 3G, satellite, FWA, Wi-Fi (Wireless fidelity) or WiMax (Worldwide interoperability for microwave access).

Figure 14 – Typical configuration of a network using VoIP as a publicly available electronic communications service



Within the scope of the FTS, these publicly available VoIP services, regulated by Law no 5/2004, may be offered by an access provider, namely of broadband:

i) at a fixed location and with conditions perceived by the user as being equivalent to those of the traditional FTS In terms of numbering and portability, ICP-ANACOM considers that VoIP offers provided at a fixed location may be assigned geographic numbers, it being the VoIP provider's responsibility to ensure the fulfilment of this requirement (use at a single location);

ii) through nomadic use offers, which can be used at several locations, supported on third party accesses, i.e. not controlling the access network (an example of such services is Skype-OUT/IN), and enabling calls to be made and received. It was considered appropriate to assign this type of nomadic VoIP a new numbering range¹¹² – 30 – which distinguishes it from the FTS.

¹¹² It was decided, under article 17, paragraph 2, point b) of *Lei das Comunicações Electrónicas* (Electronic Communications Law - Law no. 5/2004 of 10 February) to open up the "30" range to accommodate nomadic use VoIP services and to allocate numbering in blocks of 10,000 numbers to providers authorized to provide nomadic VoIP services, under terms established by ICP-ANACOM. Having regard to the provisions of point g) of paragraph 1 of article 3 of the *Regulamento da Portabilidade* (Portability Regulation), the "30" range was included within the scope of portability.

Due to increasing network convergence, integrated solutions offered by providers may include other types of service, enabling, in particular, the provision of voice, data and video over a single fixed access with the proper equipment. These solutions are usually adapted to the segments they target (residential, self-employed professionals, companies, etc.).

Commercial offers that include the FTS in Portugal in 2011

An analysis was made of 269 different offers that included FTS, as were available at the end of 2011; 59 percent of these were residential and the remaining business.

Among the residential offers analyzed, the overwhelming majority are supported over alternative networks, especially cable networks with 36 percent and optical fibre (FTTH/B) with 26 percent. Analogue offers represented 6 percent of the total.





Unit: %

Source: ICP-ANACOM

The situation is different in the case of business offers: 39 percent were offered over ISDN networks, 29 percent over cable networks, 11 percent over GSM/UMTS, 8 percent over optical fibre (FTTH/B), 7 percent over the copper network and 6 percent over VoIP/VoB.

Making an analysis by type of offer, it is reported that FTS offers included in a bundle represent 70.9 percent of total residential offers, the remaining 29.1 percent relate to the offer of the stand-alone service. About 50 percent of offers are included in triple play and quadruple play offers.







The proportion of stand-alone FTS offers is higher in the business segment with 57.7 percent of total offers.

About 77 percent of residential offers allow unlimited calls to the national fixed network. Of these, 55.7 percent offer unlimited calls 24 hours per day, 12 percent offer unlimited calls at night and 8.9 percent offer unlimited calls at night, on weekends and holidays.

Conducting an analysis of access pricing, it is found that, in the residential segment, the highest average price corresponds to a quintuple play solution at 65 euros. The lowest average price of the FTS considered individually is 12.90 euros.

Since the segment has a proliferation of tailor-made solutions and prices, the pricing presented for the business segment should be examined with some care.

1			
	Minimum price	Average price	Maximum price
Residential (including 23% VAT)	€ 3.1	€ 36.0	€ 140.0
stand-alone	€ 3.1	€ 12.9	€ 30.7
FTS+FBB	€ 31.0	€ 47.8	€ 68.4
FTS+FBB+MBB	€ 19.5	€ 38.3	€ 79.7
FTS+FBB+MTS	€ 56.7	€ 56.7	€ 56.7
FTS+FBB+TV	€ 25.0	€ 46.7	€ 70.0
FTS+FBB+TV+MBB	€ 29.2	€ 53.4	€ 140.0
FTS+FBB+TV+MTS	€ 58.0	€ 65.0	€ 73.0
FTS+STV	€ 10.0	€ 26.8	€ 37.0
FTS+TV+MBB	€ 30.5	€ 38.7	€ 49.6
FTS+TV+MTS	€ 52.2	€ 52.2	€ 52.2
Business (excluding VAT)	€ 2.5	€ 136.2	€ 2 630.0
stand-alone	€ 2.5	€ 210.7	€ 2 630.0
FTS+FBB	€ 10.0	€ 66.8	€ 199.9
FTS+FBB+MBB	€ 16.0	€ 20.0	€ 24.0
FTS+FBB+TV	€ 30.0	€ 43.0	€ 55.0
FTS+MTS	€ 8.0	€ 11.8	€ 15.0
FTS+MTS+FBB+MBB	a)	a)	a)

Table 144 – Prices of access to the FTS by segment and type of bundle

a) Value of tailored corporate solution

Unit: euros

Source: ICP-ANACOM

6.2.6. Pricing of incumbent's offers

The evolution of the incumbent operator's prices and an international comparison of FTS prices in 2011 are presented below.

Evolution in the index of incumbent operator pricing

In 2011, and in annual average terms, the price of local calls fell by 4.2 percent while the price of national calls fell by 5.2 percent. In addition, a stabilisation has been seen in monthly subscription and installation fees.

Compared to 2007, the incumbent operator's price basket remained the same in nominal terms. It should be noted also that, in nominal terms, a national call in 2011 costs 46.1 percent less than it cost in 2007.

	2010	2011	Var. (%) 2010/2011	Var. (%) annual average 2007/2011	Var. (%) accumulated 2007/2011
Installation	100.0	100.0	0.0%	0.0%	0.0%
Monthly charge	100.0	100.0	0.0%	0.0%	0.0%
Local	79.5	76.1	-4.2%	-4.4%	-16.5%
National	52.1	49.4	-5.2%	-14.3%	-46.1%
Basket	99.9	99.9	0.0%	0.0%	0.0%

Table 145 – Index of nominal prices charged by incumbent operator

Unit: base index (2006 = 100)

Source: ICP-ANACOM

Meanwhile, both the price basket of the incumbent, as well as the installation and monthly charge, decreased by 4.6 percent in real terms, between 2007 and 2011.

Table 146 – Index of real prices charged by incumbent operator

	2010	2011	Var. (%) 2010/2011	Var. (%) annual average 2007/2011	Var. (%) accumulated 2007/2011
Installation	95.2	93.1	-2.2%	-1.2%	-4.6%
Monthly charge	95.2	93.1	-2.2%	-1.2%	-4.6%
Local	75.7	70.9	-6.3%	-5.5%	-20.3%
National	49.6	46.0	-7.2%	-15.3%	-48.6%
Basket	95.2	93.1	-2.2%	-1.2%	-4.6%

Unit: base index (2006 = 100)

Source: ICP-ANACOM

International FTS price comparisons

International price comparisons of FTS prices are shown below¹¹³.

Regarding the annual average invoice (bundle), prices paid by FTS residential customers in Portugal are below the average price charged in the countries under analysis, in all consumption profiles.

Table 147 – International pric	e comparisons of FTS –	Residential segment
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		Nov. 2007	Nov. 2008	Nov. 2009	Nov. 2010	Nov. 2011
Low	Deviation from average	-1.7%	0.2%	-0.9%	-3.1%	-4.0%
consumption	Ranking EU19	9	11	11	9	7
Average	Deviation from average	-8.0%	-6.9%	-7.1%	-15.5%	-16.0%
consumption	Ranking EU19	4	7	6	3	4
High	Deviation from average	-7.1%	-7.0%	-5.5%	-15.2%	-14.0%
consumption	Ranking EU19	6	7	8	4	6

Unit: %

¹¹³ The usage profiles/baskets considered were those used by the Organization for Economic Cooperation and Development (OECD). Values are presented in euros and correspond to monthly bills, net of VAT. Purchasing Power Parity was not used. The figures for the residential segment exclude discounts and promotions, but these were included in the case of the business segment. The average is calculated using the results of the 19 EU countries considered by the OECD.

Source: Teligen, OECD, ICP-ANACOM

In spite of the fact that, overall, the residential consumer's average annual bill in Portugal is below the average of the countries considered, there are certain components in the basket where it is above the average. This is the case of international calls, in all segments of consumption, and installation and subscription in the case of the low consumption segment.

In all consumption segments, fixed-fixed and fixed-mobile calls are below the average of the countries analyzed.

		Low consumption	Medium consumption	High consumption
Installation	Monthly expenditure on installation and subscription	€ 17.19	€ 17.19	€ 17.19
and subscription	Deviation from average	2.6%	-8.5%	-28.9%
•	Ranking EU19	13	11	6
	Monthly expenditure on fixed-fixed calls	€ 1.09	€ 2.30	€ 3.65
Fixed-fixed calls	Deviation from average	-90.8%	-60.1%	-10.4%
	Ranking EU19	7	4	15
	Monthly expenditure on fixed-mobile calls	€ 1.53	€ 3.71	€ 9.99
Fixed-mobile calls	Deviation from average	-33.7%	-15.4%	-24.2%
	Ranking EU19	5	8	8
	Monthly expenditure on international calls	€ 3.38	€ 2.71	€ 10.83
International calls	Deviation from average	41.8%	42.8%	55.4%
	Ranking EU19	16	16	16

Table 148 – International comparison of FTS prices (II) – residential segment, November 2011

Unit: %

Source: Teligen, OECD, ICP-ANACOM

In the enterprise segment, the SOHO (Small Office, Home Office) segment, prices in Portugal are 0.4 percent above the average.

In the SME segment, the results are less favourable. In this case, the prices in Portugal are 13th in the ranking, with the average bill paid by these customers 12 percent above the average of other countries under analysis.

		Nov. 2007	Nov. 2008	Nov. 2009	Nov. 2010	Nov. 2011
00110	Deviation from average	2%	0.2%	-3.1%	-3.0%	0.4%
SOHO	Ranking EU19	12	12	9	7	10
0.115	Deviation from average	13.5%	11.3%	9.1%	7.4%	12.0%
SME	Ranking EU19	15	14	13	13	13

Table 149 – Internationa	I price comparisons of	FTS – business segment
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Unit: %

Source: Teligen, OECD, ICP-ANACOM

In the enterprise segment, the prices charged in Portugal are below the European average with regard to installation, monthly subscription and calls to mobile numbers, and above the average with regard to calls to fixed numbers and calls to international numbers.

Table 150 – International	price comparisons	of FTS (II) - business	segment, November 2011
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		SOHO	SME
Installation and	Monthly expenditure on installation and subscription	€ 16.27	€ 16.27
	Deviation from average	-16.4%	-26.0%
ouscomption	Ranking EU19	5	4
o	Monthly expenditure on national calls	€ 11.05	€ 18.16
Calls fixed-fixed	Deviation from average	43.4%	84.7%
	Ranking EU19	14	15
o	Monthly expenditure on fixed-mobile calls	€ 6.04	€ 6.44
Calls Fixed-Mobile	Deviation from average	-28.2%	-34.8%
T IXed-Wobile	Ranking EU19	7	6
International calls	Monthly expenditure on international calls	€ 5.42	€ 16.85
	Deviation from average	78.7%	71.5%
	Ranking EU19	17	17

Unit: %

Source: Teligen, OECD, ICP-ANACOM

6.3. The customer and usage profile of the fixed telephone service (FTS)

The main characteristics of the users and the usage of FTS are presented below, with evaluation made of the services provided. Reference is also made to the main reasons given for quitting the fixed network and to the future intentions to take up the FTS.

6.3.1. Characterization of the user of the fixed telephone service (FTS)

FTS users are mostly residential. Only 10.9 percent of FTS customers are non-residential. As can be seen in the following graph, the proportion of residential customers has increased slightly over the past two years.





Unit: %

Source: ICP-ANACOM

Among residential customers, and according to Marktest's *Estudo Barómetro de Telecomunicações* (Telecommunications Barometer) Study¹¹⁴, penetration is above average in the case of the population over 55 and in households consisting of at least two individuals.

¹¹⁴ It is concluded that the existence of the FTS in the home is statistically associated with age group of the individual respondent (Cramer V coefficient of 0.228 in 4th quarter 2011).

Table 151 – FTS penetration by age group

Respondent's age group	4Q2008	4Q2009	4Q2010	4Q2011
15-24	56.8	56.3	58.1	64.6 1
25-34	40.4	42.2	49.1 ↑	53.7
35-44	49.7	50.0	49.1	56.8 🕇
45-54	58.2	60.5	57.9	63.6 🕇
55-64	77.2	74.6	66.7 ↓	71.0
Over 65	92.3	91.3	86.1↓	86.2
Total	60.0	60.0	60.0	65.0

Unit: %

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer), 4Q2008, 4Q2009, 4Q2010 and 4Q2011115

Base: Total households according to the age group of the respondent

Note 1: Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate.

Note 2: The shaded proportions indicate those that are significantly different (horizontal) according to the test of two samples for proportions. Higher proportions are highlighted in light shading and lower proportions in dark shading.

Note 3: The upward pointing arrow signals a statistically significant increase between the instances *t-1* and *t*, and a downward arrow signals a statistically significant decrease, through the statistical test of the difference between two proportions for large and independent samples, considering a 95 percent confidence level.

Note 4: The age group variable refers to an individual characteristic whereby it is not part of the stratification of the sample of dwellings (Marktest district and region). This information is purely indicative of the profile of the user.

¹¹⁵ The *Barómetro de Telecomunicações* (Telecommunications Barometer) is a regular study of Marktest for the telecommunications sector. The universe of the *Barómetro de Telecomunicações – Rede Fixa* (Telecommunications Barometer – Fixed Network) comprises dwellings in mainland Portugal or in the Autonomous Regions of Madeira and the Azores. A sample is compiled on a monthly basis which is proportional to and representative of the study's universe. Maktest's *Barómetro de Telecomunicações* (Telecommunications Barometer) entails interviews conducted using CATI. 60 percent of interviews were conducted between 2007 and 2010 with individuals living in homes with fixed network telephone and 40 percent of interviews were conducted with individuals living in homes without telephone fixed network; this ration was modified to 63/35 in 2011. These rates stem from the characterizations of mobile numbers also conducted by Marktest.

Table 152 – FTS penetration by type of family structure

Number of individuals in the home	4Q2008	4Q2009	4Q2010	4Q2011
One individual	53,0	44,8↓	43,9	50.0
Two individuals	63,3	65,2	65,9	67.2
Three individuals	59,5	56,1	58,2	65.1
Four or more individuals	59,3	64,7 1	62,4	68.8↑
Total	60,0	60,0	60,0	65.0

Unit: %

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer), 4Q2008, 4Q2009, 4Q2010 and 4Q2011

Base: Individuals aged 15 or over with voice electronic communications services according to family structure

Note 1: Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate. **Note 2:** The shaded proportions indicate those that are significantly different (horizontal) according to the test of two samples for

proportions. Higher proportions are highlighted in light shading and lower proportions in dark shading. **Note 3:** The upward pointing arrow signals a statistically significant increase between the instance *t*-1 and *t* and a downward arrow

signals a statistically significant decrease between these two instances. **Note 4:** The family size variable is not part of the stratification of the sample of dwellings (Marktest district and region). This

Note 4: The family size variable is not part of the stratification of the sample of dwellings (Marktest district and region). This information is purely indicative of the profile of the user.

If FTS penetration is analyzed according to social class, it is found to be higher in the upper social class, increasing 14.4 percent over the previous year, possibly as a result of the proliferation of the bundles of services offered which include the fixed telephone service. It is noted that in 4th quarter 2010, the highest penetration was no longer reported among the lower social classes but among the upper social class. It should also be noted that the existence of FTS is statistically associated with social class (Cramer V coefficient of 0.093 in 4th quarter 2011).

Table 153 – Penetration of FTS by social class

Social class	4Q2008	4Q2009	4Q2010	4Q2011
A – Upper	51.9	62.4 🕇	60.7	75.1 ↑
B – Upper Middle	58.9	63.9	64.5	67.1
C1 — Middle	56.8	56.3	59.9	65.6 🕇
C2 – Lower middle	55.7	53.1	53.6	59.0 1
D – Lower	73.8	71.0	66.3 1	67.7
Total	60.0	60.0	60.0	65.0
Unit: %				

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer), 4Q2008, 4Q2009, 4Q2010 and 4Q2011

Base: Total households with voice electronic communications services according to social class

Note 1: Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate.

Note 2: The shaded proportions indicate those that are significantly different (horizontal) according to the test of two samples for proportions. Higher proportions are highlighted in light shading and lower proportions in dark shading.

Note 3: The upward pointing arrow signals a statistically significant increase between the instance t-1 and *t* and a downward arrow signals a statistically significant decrease between these two instances.

Note 4: Social class A is the highest social class and D is the lowest.

Note 5: The social class variable is not included in the stratification groups of the dwellings sample (Marktest district and region). This information is purely indicative of the profile of the user.

Moreover, use was made of Cluster analysis¹¹⁶ to identify the profile of the residential FTS user from an integrated perspective. Three groups were identified with a distinct consumption profile, as set out in the following table¹¹⁷:

 The first group identified consists of households with FTS which have few electronic communication services, including exclusive use of the FTS or this service and the STVS without subscribing to a bundle of services.

These households are more likely to be smaller, with presence of elderly, belonging to a lower social class (D) and residing in the North Interior region of Portugal. The respondent is more likely retired or unemployed, older (55 years or over) and with a lower education level (up to 1st cycle).

 The second group refers to households which, in addition to having the FTS, combine it with more services like the IAS (FBB and/or MBB) and STVS. Additionally the use of bundled services tends to be more significant in this group.

The households of this group tend to be a larger (three or more individuals), characterized by the presence of children in the home and by belonging to middle to upper classes (A/B/C1).

¹¹⁶ Cluster analysis makes it possible to identify groups sharing homogeneous behaviour, whereas use has been made of the non-hierarchical K-means method, based on the Euclidean distance and centroid criterion for the aggregation of responses. The methodology of this type of analysis is described in detail in Annex 2 of the State of Communications Report, 2009.

¹¹⁷ For this purpose, use was made of microdata from Marktest's *Barómetro de Telecomunicações* (Telecommunications Barometer), with reference to 2nd quarter 2011. The unit of observation used in this specific analysis is the home, making a total of 6,959 sample cases responding to the questions considered.

• The third group comprises homes that use the FTS with less intensity; the majority do not even have this service. The MTS is used by almost all respondents of such households.

The group is characterized by belonging, in the most part, to the middle and lower middle classes (C1/C2). Respondents from these homes are aged under 45 years, with an intermediate education level (2nd and 3rd cycles) and who are professionally classified as qualified and non-qualified employees.

	GROUP 1		GROU	GROUP 2			GROUP 3		
	Households with F EC serv	TS but wi ices	th few	Households with va in addition t	rious EC ser to the FTS	vices	Households that use the FTS with lower intensity		
	% % group overall			% group	% overall		% group	% overall	
	FTS only	45.5	11.5	FTS+FBB+STVS	66.2	23.9	Without FTS	79.2	35.0
	FTS+STVS	29.8	9.9	FTS+FBB+MBB+STVS	19.0	7.2	Respondent with MTS	99.6	93.2
	FTS not included in bundle	61.8	24.3	FTS included in bundle	95.1	39.9			
Marktest region	North Interior	28.2	20.6	Greater Lisbon	26.4	20.2			
Size of household	Up to two individuals	87.2	45.7	>= Three individuals	71.5	54.3			
Presence of children/elderly	Elderly	77.3	25.0	Children	48.5	36.0	Children	42.7	36.0
Age group	>= 55 years	89.7	29.3	<55 years	85.7	70.7	<45 years	73.8	55.3
Level of education	<= 1st cycle Basic Ed.	80.0	24.4	>= 3rd cycle Basic Ed.	87.2	66.1	2nd and 3rd cycle Basic Ed.	35.9	26.8
Professional status	Retirees / Pensioners/ Unemployed	80.8	29.0	Middle management and technical specialists	16.9	11.2	Skilled workers	25.8	16.8
and employment	Stay-at-home	8.2	4.3	Services / retail employee / Administrative	14.9	10.7	Unskilled workers	14.7	10.4
				Students	15.7	10.7			
Social class	Class D	68.1	22.9	Classes A/B/C1	64.1	46.8	Classes C1/C2	70.4	58.0

Source: This analysis is provided by ICP-ANACOM based on Marktest microdata - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 2nd half 2011

Base: Homes with voice electronic communication services (excluding non-responses)

Note 1: Cluster analysis using K-means method with four classes. According to the distance matrix between the groups, it is observed that groups 1 and 2 are set furthest apart from each other (2,246).

Note 2: Most characterizing variables used in this analysis are not part of the stratification of the sample groups of dwellings (Marktest district and region), whereby this information is purely indicative of the profile of the user.

6.3.2. Barriers to service take-up

According to Marktest's *Barómetro de Telecomunicações* (Telecommunications Barometer) study, and as illustrated in the table below, the main reason for quitting the fixed network stems from its limited use.

Mobile phone use and tariff issues are also of significant importance. About 20 percent of those who quit the service consider that it has high prices and about 9 percent believe that the monthly charge is expensive.

	4Q2007	4Q2008	4Q2009	4Q2010	4Q2011			
Fixed network abandonment rate	33.3	32.4	32.8	34.4	39.7 ↑			
Base: Dwellings without access to fixed telephone service	e (not including	non-response	es)					
Reasons for quitting fixed network (multiple choice)								
Payment of monthly charge/expensive monthly charge	41.6	17.3 🕇	12.9 *↓	11.8 *	8.8 *			
High prices / too much expense	20.9	30.3 ↑	22.7↓	23.2	19.9			
Use mobile phone	17.9	20.2	25.3 🕇	23.6	24.6			
Gave little use / no longer useful	23.0	22.0	34.8 🕇	32.4	30.4			
Poor operator assistance/problems	1.6 #	3.1 *	2.5 #	3.1 *	6.1 * 🕇			
Other	2.5 #	2.6 #	6.8 * 🕇	5.9 *	9.8 * 🕇			
Don't know/No response	3.1	9.9	8.5	6.7	2.8			

Table 155 – Quitting the fixed network

Unit: %

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q2010 and 4Q2011

Base: Homes that have quit the fixed telephone service

Note 1: Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate. **Note 2:** The upward pointing arrow signals a statistically significant increase between the instance t-1 and t and a downward arrow signals a statistically significant decrease between these two instances.

It should be noted that tariff-related barriers to taking up the service are apparently lower in Portugal than in the EU, where they are the overall majority. Moreover, the influence of the MTS is much greater in Portugal (see Chapter 7).

6.3.3. Characterization and usage of the fixed telephone service (FTS)

The level of service take up and the consumption of FTS accesses and calls is characterized below.

Number of customers

In 2011 there was a 2.5 percent increase in the number of direct access customers in relation to 2010.

Table 156 – Number of FTS and nomadic VoIP customers

	2010	2011	Var. (%) 2010/2011	Var. (%) annual average 2007/2011	Var. (%) accumulated 2007/2011
Direct access customers ⁽¹⁾	3,537	3,624	2.5%	3.1%	13.0%
Pre-selection customers	121	105	-13.3%	-21.2%	-61.4%
Call-by-call selection customers	20	18	-9.9%	-27.2%	-71.9%
Nomadic VoIP customers	106	89	-16.3%	3.8%	16.1%

Units: thousands of customers, %

Source: ICP-ANACOM

Note: The figures reported for pre-selection and nomadic VoIP customers in 2010 and as published in the previous version of State of Communications have been amended after two operators changed the numbers of customers reported for that year.

⁽¹⁾ Includes direct access clients with WLRO active.

This increase is within the forecast range resulting from the recent historical trend.



Graphic 125 – Evolution of direct access customers and forecast range

Unit: thousands of customers

Source: ICP-ANACOM

Note 1: * Forecast range with a significance level of 95 percent.

Note 2: The series was modelled from 4th Quarter 2008, from when a different behaviour trend was evident with the increase in competition associated with the entry of bundled services and offers with unlimited traffic. A linear trend regression model was used with quadratic trend: $Y=3076006+62449,4t-1082,24t^2$. The adjusted R² adjusted model is 0.99.

The growth in the number of direct customers of this service occurring from 2006 resulted primarily from the introduction of FTS offers supported over GSM/UMTS – offers which, in some cases, had no monthly subscription charge. Later, from 2009, the increase was mainly a result of the spin-off of PT Multimédia and the entry of ZON into these markets. More recently the development of next generation networks (FTTH/B and EuroDOCSIS 3.0) and the offer of new multiple play bundles also contributed to this growth trend. It is noted that the increase in the number of customers occurred at the same time as the number of direct access customers of Grupo PT declined.

In terms of future intention of subscribing to the FTS, Marktest's *Barómetro de Telecomunicações* (Telecommunications Barometer) shows that about 93 percent of respondents "certainly will not subscribe to the service"; this value declined slightly over the previous year, reversing the growth trend seen in recent years.

Table 157 – Intention to take up FTS in future

	4Q2007	4Q2008	4Q2009	98) 4Q2010	99) 4Q2011
Will definitely take up or maybe take up	6.3	5.7 *	4.7 *	3.4 *	4.6 *
Will definitely not take up	92.6	92.2	94.2 🕇	95.3	93.2 🗸
Don't know/No response	1.1	2.0	1.1	1.3	2.2
Total	100	100	100	100	100

Unit: %

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q207 and 4Q2011

Base: Households without fixed telephone service (Although they have MTS)

Note 1: Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate. **Note 2:** The upward pointing arrow signals a statistically significant increase between the instance t-1 and t and a downward

arrow signals a statistically significant decrease between these two instances.

The number of indirect access customers fell 12.7 percent, in the case of pre-selection, and by 15.3 percent in the case of call-by-call selection.

Indirect access customers fell significantly between 2001 and 2003, after a significant increase in the first two years after liberalization, when this means of access was the one preferred by new providers entering these markets. This evolution has been explained by the new providers' emphasis on other business models with better prospects in terms of profitability (for example, bundled offers based on direct access, particularly based on the RUO, and development of their own networks).

At the end of 2003, Telemilénio – Telecomunicações, Sociedade Unipessoal, Lda. (Tele2) entered these markets boosting the offer of indirect access. Since then, the number of customers has increased significantly.

In 2006, a reversal was seen in this trend, and from 2007 the falling trend in the number of indirect access customers steepened to the downside. These variations are explained by the growth in offers from alternative operators in the direct access mode. The development of the WLRO (in the case of call-by-call selection), and the new optional price plans launched by the incumbent operator may have affected this evolution



Graphic 126 – Evolution in the number of indirect access customers

Source: ICP-ANACOM

At the end of 2011, around 55 thousand customers were benefiting from the WLRO, with one alternative operator, Optimus, responsible for about 91 percent of the customers with active WLRO. Between 2Q07, when it reached its peak, and the end of 2011, the number of customers with active WLRO fell by 68 percent.

The number of customers of the nomadic VoIP service decreased by about 16.3 percent compared to the previous year, explained by the fact that one operator migrated a significant number of its customers to a fixed voice telephony solution.

Accesses

At the end of 2011, there were around 4.5 million main accesses, 3.2 percent more than reported at the end of the previous year (an additional 53.6 thousand accesses). This overall growth was driven by an increase of around 27 percent (an additional 236 thousand accesses) in the number of VoIP/ VoB accesses – including those supported over cable TV and FTTH/B networks – and an increase of 3.7 percent in accesses using the GSM/UMTS (an additional 16 thousand accesses). These increases made up for the falls reported in analogue accesses (-4.9 percent), in ISDN and Diginet accesses (-11.0 percent) and the number of installed pay-telephones (-15.5 percent).

Unit: thousands of customers

Table 158 – Number of main equivalent accesses

	2010	2011	Var. (%) 2010/2011	Var. (%) annual average 2007/2011	Var. (%) accumulate d 2007/2011
Total main accesses ⁽¹⁾	4,477	4,530	1.2%	1.8%	7.5%
Analogue accesses ⁽²⁾	2,444	2,325	-4.9%	-5.9%	-21.7%
(of which) public pay- telephones	32	27	-15.5%	-10.5%	-35.8%
ISDN and Diginet ⁽³⁾	722	643	-11.0%	-7.2%	-25.7%
GSM/ UMTS accesses	442	458	3.7%	5.8%	25.5%
VoIP/ VoB accesses (4)	868	1,104	27.2%	>100%	>100%

Units: thousands of accesses, %

Source: ICP-ANACOM

Note: The indicators used were different from those used in earlier reports. Accesses were also reclassified. As such, the categories presented above may not be identical to previously published information.

Note: The value of total main accesses, GSM/UMTS accesses and ISDN and Diginet accesses for 2010 have changed relative to those version published previously in the State of Communications given that some operators have made changes to the data reported with reference to this year. ⁽¹⁾This indicator corresponds to the sum of the following indicators: number of analogue indicators and number of ISDN and

⁽¹⁾This indicator corresponds to the sum of the following indicators: number of analogue indicators and number of ISDN and equivalent Diginet access, number of GSM accesses, number of VoIP/VoB accesses regarding direct access, including accesses installed at customer request, public pay-telephones and the providers' own stock. Own stock refers to accesses installed for use by the provider itself (accesses associated with companies with which the provider has a controlling or group relationship should not be included in its own stock, and should be counted as "accesses installed at customer request").

⁽²⁾The analogue accesses include analogue accesses installed at customer request, providers' own stock and analogue cable telephony accesses.

⁽³⁾The number of equivalent digital accesses the sum of the number of lines associated with the FTS supported over each installed access. In the case of basic ISDN accesses, the total number of equivalent accesses is two for each basic ISDN accesses and 30 for each primary ISDN. Fractional access are part of primary ISDN accesses. ISDN accesses include the providers' own stock, cable telephony accesses digital accesses, Diginet accesses and FWA accesses.

⁽⁴⁾ These accesses include xDSL accesses, accesses based on optical fibre and VoB accesses supported over the cable network. See ICP-ANACOM position on VoIP services available at <u>http://www.anacom.pt/template12.jsp?categoryId=183074</u>.

The reported variations are within the forecast range resulting from the historic trend and estimated seasonal adjustments. The exception was the amount reported in the 4th quarter which was 0.2 percent below the lower limit of the forecast range.



Graphic 127 – Evolution of the main accesses and forecast range

Unit: thousands of main accesses

Source: ICP-ANACOM

Note 1: * Forecast range with a significance level of 95 percent.

Note 2: The series was modelled from 2nd quarter 2008, from when a different behaviour trend was evident with the increase in competition associated with the appearance of optical fibre offers. A regression model was used with logarithmic trend Y=4158770+161878ln(t). The adjusted R² adjusted model is 0.99.

From 2001 to 2008, a slight downward trend was reported in the number of accesses. By 2008, local network investments by alternative operators had not been sufficient to reverse the decline in the number of accesses. The new providers decided for the most part to enter the market using the regulated offers of indirect access or local loop unbundling. The exception was Cabovisão which, from a relatively early stage focused on a multiple play strategy supported over its cable TV distribution network, to become, until recently, the second largest provider of access to the fixed telephone network.

However, in 2009 there was a reversal in this trend. There was a significant increase reported in offers based on voice over Internet services provided at a fixed location and a progressive increase in offers based on mobile networks and on FTTH/B. This trend reversed the decline of the service.

The decrease in the number of accesses in Portugal was, until 2004, more pronounced than in the other EU countries. Since then, firstly due to the effect of the offers based on mobile networks and, subsequently, due to the offers mentioned in the previous paragraph, the decrease in the number of accesses in Portugal has been lower or in line with the trend reported in Europe. In 2009 and 2010, the number of accesses increased in Portugal in contrast to what happened in Europe.





Unit: %

Source: ITU

Analyzing the evolution reported in accesses by type, it is found that the vast majority of direct FTS accesses are comprised of analogue accesses (approximately 51 percent of all main accesses). However, in the last five years, the weight of this type of access has decreased by 19 percentage points.

Since the beginning of the liberalization process, the proportion of ISDN accesses, which at first increased significantly, now represent a proportion 6 percentage points smaller than five years ago, constituting about 14.2 percent of total main accesses at the end of 2011.

Moreover, it appears that since 2005-2006, accesses supported over GSM networks have acquired growing importance in terms of the FTS, representing about 10 percent of total main accesses as at the end of 2011. VoIP/VoB accesses, which include, among others, accesses supported over the cable TV network and over FTTH/B, saw very strong growth over the last two years, accounting for about 24 percent of total accesses as at the end of 2011.



Graphic 129 – Evolution in number of main accesses

Source: ICP-ANACOM

From another perspective, and considering the distribution of accesses per NUTS II, it appears that the regions of Lisbon and the North are the ones with the highest percentage of FTS accesses, with more than 60 percent of the accesses. The Autonomous Regions of Madeira and the Azores are those with fewest FTS accesses.

Table 159	 Percentage of 	FTS accesses	by NUTS II	in 4Q2011
-----------	-----------------------------------	---------------------	------------	-----------

	Residential	Non- residential	Total
North	29.9	31.5	30.2
Centre	21.6	21.4	21.6
Lisbon	32.4	30.1	32.0
Alentejo	6.9	6.9	6.9
Algarve	4.6	5.5	4.8
Autonomous Region of Azores	2.3	2.1	2.3
Autonomous Region of Madeira	2.3	2.5	2.3
Total	100	100	100

Unit: %

Source: ICP-ANACOM

It appears that in the case of residential customers, 32.4 percent of accesses are in Lisbon, with the second largest proportion, 29.9 percent, in the North.

Unit: thousands of accesses

Non-residential FTS accesses are concentrated in the North and Lisbon (31.5 and 30.1 percent, respectively).

Traffic

FTS voice traffic decreased by 0.02 percent in 2011. The decrease in voice traffic in minutes was below the average of the last five years.

	2010	2011	Var. (%) 2010/2011	Var. (%) annual average 2007/2011	Var. (%) accumulated 2007/2011
FTS Voice traffic ⁽¹⁾	7,828	7,827	-0.02%	-0.4%	-1.4%
National traffic (voice)	289	7,299	0.1%	-0.3%	-1.0%
National fixed-fixed traffic	6,400	6,519	1.9%	1.2%	4.9%
National fixed-mobile traffic	889	779	-12.3%	-9.4%	-32.5%
Outgoing international traffic	539	528	-2.1%	-1.7%	-6.8%
Internet access traffic	74	63	-14.6%	-37.5%	-84.8%
Nomadic VoIP traffic	242	232	-4.2%	25.6%	>100%

Table 160 – Traffic originating on the fixed network (minutes)

Units: millions of minutes, %

Source: ICP-ANACOM

Note: The indicators used were different from those used in earlier reports. As such, the categories presented above may not be identical to previously published information. In this publication, indicators include traffic originating on public pay-telephones, which was excluded in previous publications.

⁽¹⁾ Includes direct access traffic and indirect access traffic through pre-selection and call-by-call selection and public pay-telephone traffic. Excludes minutes from national traffic with access through calling cards, pre-paid cards, etc.., minutes of national traffic destined to numbers with the following prefixes: 800, 802, 808, 809, 884, 707, 708, 760, 761 and 762, minutes of national traffic to short numbers and minutes of other national traffic originating on the fixed telephone network.

The reported variations over the year are within the forecast range resulting from the historic trend and estimated seasonal adjustments.



Graphic 130 – Traffic originating on the fixed network (minutes) and forecast range

Unit: thousands of minutes

Source: ICP-ANACOM

Note 1: * Forecast range with a significance level of 95 percent.

Note 2: A quadratic trend regression model was used with the following significant independent variables at a 95 percent confidence: seasonal dummies for the third (Q3) and fourth (Q4) quarters and outlier at 2nd quarter 2004 (Y=2331 330 - $28240,6t+526,49t^2-83\ 024,4T3+38989,92T4+108630,3Outlier2T2004$) The adjusted R² of the model is 0.98.

The components which explain the fall in total traffic were firstly, fixed-mobile traffic and, secondly, international traffic. Both fixed-mobile traffic – as a result of fixed-mobile substitution and, possibly, the growth in the number of fixed accesses and in widespread free calls to fixed network numbers – and international traffic has been declining in recent years, a trend that accelerated in 2011.

Fixed-fixed voice traffic increased 1.9 percent in terms of number of minutes, as since 2009.

This trend, which contradicts the prior historical trend, may result from the fact that there are certain price tariff offers which include free calls – and that result in longer call durations (as can be seen below) – and, also the increased number of customers. The number of minutes actually reported in 2011 is within the forecast range resulting from the

estimated model (which already takes into account reversal in the trend mentioned above).

In terms of calls, a general decline has been reported in traffic originated on the fixed network. The trend fits in with this variable's recent evolution.



Graphic 131 - Traffic originated on the fixed network (calls) and forecast range

Unit: thousands of calls

Source: ICP-ANACOM

Note 1: * Forecast range with a significance level of 95 percent.

Note 2: A regression model was used with exponential trend and also considering the following significant independent variables at a confidence level of 95 percent: seasonal dummies for the second (Q2), third (Q3) and fourth (Q4) quarters, dummies relating to particular events from 2nd quarter of 2006 (coinciding with strong growth in offers based on GSM) and 2nd quarter 2008 (representing an increase in competition with entry of services in bundled offers with unlimited traffic) and outlier in 2nd quarter 2004: : Y = exp(13,686 - 0,01123t-0,02625D2T06-0,02346D2T08+0,010146T2-0,002566T3+0,015326T4+0,022027Outlier2Q04). The adjusted R² of the model is 0.99.

The sharpest fall was recorded in Internet access traffic (-21.3 percent), with users favouring offer forms of access over dial-up access.

	2010	2011	Var. (%) 2010/2011	Var. (%) annual average 2007/2011	Var. (%) accumulate d 2007/2011
Voice traffic ⁽¹⁾	2,373	2,242	-5,5%	-5,3%	-19,6%
National traffic (voice)	2,268	2,144	-5,5%	-5,2%	-19,4%
National fixed-fixed traffic	1,799	1,734	-3,6%	-4,1%	-15,4%
National fixed-mobile traffic	469	410	-12,6%	-9,4%	-32,7%
Outgoing international traffic	105	98	-7,1%	-6,8%	-24,5%
Internet access traffic	16	13	-21,3%	-19,5%	-57,9%
Nomadic VoIP traffic	47	43	-7,3%	21,7%	>100,0%

Table 161 – Traffic originating on the fixed network (calls)

Units: thousands of calls, %

Source: ICP-ANACOM

Note: The indicators used were different from those used in earlier reports. As such, the categories presented above may not be identical to previously published information. In this publication, indicators include traffic originating on public pay-telephones, which was excluded in previous publications.

⁽¹⁾ Includes direct access traffic and indirect access traffic through pre-selection and call-by-call selection and public pay-telephone traffic. Excludes minutes from national traffic with access through calling cards, pre-paid cards, etc., minutes of national traffic destined to numbers with the following prefixes: 800, 802, 808, 809, 884, 707, 708, 760, 761 and 762, minutes of national traffic to short numbers and minutes of other national traffic originating on the fixed telephone network.

Voice traffic originating on the fixed network in minutes is made up, in the most part, by fixed-fixed calls (80.3 percent). These are followed by fixed-mobile traffic (9.6 percent), and outgoing international traffic (6.5 percent).

The weight of the various categories of traffic has been changed. For example the weight of fixed-fixed calls has increased by 6.7 percentage points since 2007; the weight of fixed-mobile calls has dropped by 4.1 percentage points since 2007; and the weight of Internet access traffic has dropped by 4 percentage points.

The weight of switched Internet access traffic (dial-up access), which was initially a significant part of total traffic due to the increasing popularity of the internet and the introduction of offers from alternative operators (free internet), has experienced a rapid decrease due to migration to broadband offers. Traffic associated with the nomadic VoIP service began to be noted in 2007. However in 2011, a reduction was reported in this traffic (falling 4.2 percent over the previous year). This reduction is explained by the fact

that one operator migrated a significant number of its customers to a fixed voice telephony solution.





Unit: %

The distribution described above alters significantly if the number of calls is considered. This is explained by the difference in weight of the fixed-mobile traffic (from about 9.6 percent to 17.8 percent). Calls originated and terminated on the fixed network have a duration of about 3 minutes 46 seconds and are approximately 1 minute and 52 seconds longer than the fixed-mobile calls.

These differences may be explained by differences in the pricing of the calls in question. In terms of number of calls, fixed-fixed traffic represents about 75.5 percent of the total, while fixed-mobile and international calls account for about 17.8 and 4.3 percent of traffic, respectively.

Source: ICP-ANACOM


Graphic 133 – Distribution of traffic by destination (calls)

Source: ICP-ANACOM

Indirect access traffic

In 2011, there was a reduction in indirect access traffic (-22.3 percent in calls and -22.0 percent in minutes).

The general decline in indirect access traffic is in line with and concurrent with the reduction in the number of customers of these offers, the search for new business models by some of the main alternative operators and the incumbent operator's focus on optional tariffs.

Indirect national traffic represents about 6 percent of total national traffic in terms of minutes.



Graphic 134 - Evolution in the percentage of traffic carried by indirect access modes (minutes)

Source: ICP-ANACOM

Meanwhile, indirect access outgoing international traffic represented about 5.5 percent of total minutes of conversation time in 2011 and 9.1 percent of total calls.



Graphic 135 – Evolution in the percentage of traffic carried by indirect access modes (calls)

Source: ICP-ANACOM

Traffic: average duration of calls

Calls originated and terminated on the fixed network have a duration of about 3 minutes 46 seconds and are approximately 1 minute and 52 seconds longer than fixed-mobile calls. These differences may be explained by the differences in the pricing of the calls in question

On the other hand, international calls had a duration of about 5 minutes and 24 seconds in 2011, approximately 23 percent longer than five years before. In addition to the general fall in prices of these calls and the existence of tariffs with free international calls, this phenomenon may be associated with the proliferation of offers targeting specific users and destinations.

Table 162 – Average duration of calls

	2007	2008	2009	2010	2011
Voice traffic ⁽¹⁾	2.85	2.96	3.13	3.30	3.49
National traffic (voice)	2.77	2.86	3.05	3.21	3.40
National fixed-fixed traffic	3.03	3.14	3.36	3.56	3.76
National fixed-mobile traffic	1.90	1.91	1.92	1.90	1.90
Outgoing international traffic	4.37	5.19	4.92	5.13	5.40
Internet access traffic	13.64	9.91	7.15	4.55	4.94
Nomadic VoIP traffic	4.72	4.89	4.99	5.18	5.35

Unit: minutes

Source: ICP-ANACOM

Note: The indicators used were different from those used in earlier reports. As such, the categories presented above may not be identical to previously published information.

⁽¹⁾ Includes direct access traffic and indirect access traffic through pre-selection and call-by-call selection and public pay-telephone traffic. Does not include national traffic with access through pre-paid cards, etc., minutes of national traffic destined to numbers with the following prefixes: 800, 802, 808, 809, 884, 707, 708, 760, 761 and 762, minutes of national traffic to short numbers and minutes of other national traffic originating on the fixed telephone network.

Average traffic per customer

Average traffic per direct access customer has decreased considerably since the early years of the sector's liberalization. In particular, over the past five years, voice traffic declined by about 12.8 percent. All the traffic categories have seen large reductions, with the average of Internet access traffic reported as having the largest reduction (86.5 percent in the last five years).

	2010	2011	Var. (%) 2010/2011	Var. (%) annual average 2007/2011	Var. (%) accumulate d 2007/2011
Voice traffic ⁽¹⁾	184	180	-2.4%	-3.4%	-12.8%
National traffic (voice)	172	168	-2.3%	-3.3%	-12.4%
National fixed-fixed traffic	151	150	-0.6%	-1.9%	-7.2%
National fixed-mobile traffic	21	18	-14.4%	-12.1%	-40.3%
Outgoing international traffic	13	12	-4.5%	-4.7%	-17.5%
Internet access traffic	2	1	-16.6%	-39.4%	-86.5%
Total traffic (voice+ Internet)	186	181	-2.6%	-4.4%	-16.4%

Table 163 – Monthly traffic per direct access customer

Units: minutes, %

Source: ICP-ANACOM

Note: The indicators used were different from those used in earlier reports. As such, the categories presented above may not be identical to previously published information.

⁽¹⁾ Includes direct access traffic and indirect access traffic through pre-selection and call-by-call selection and public pay-telephone traffic. Excludes minutes from national traffic with access through calling cards, pre-paid cards, etc.., minutes of national traffic destined to numbers with the following prefixes: 800, 802, 808, 809, 884, 707, 708, 760, 761 and 762, minutes of national traffic to short numbers and minutes of other national traffic originating on the fixed telephone network.





Unit: minutes

Source: ICP-ANACOM

Average monthly number of calls and minutes per main access

In 2011, an average of 32 fixed-fixed calls, eight fixed-mobile calls and two international calls were made per main access, 9, 5 and 1 fewer than in 2007 respectively.



Graphic 137 – Average number of monthly calls per main access

Unit: number of calls

Source: ICP-ANACOM

In 2011, the average number of minutes reported per main accesses was: 120 minutes for fixed-fixed calls, 14 minutes for fixed-mobile calls and 10 minutes for international calls, 3, 9 and 1 minutes fewer than in 2007, respectively.



Graphic 138 – Average monthly number of minutes per main access

Unit: number of minutes

Source: ICP-ANACOM

Revenues

The sharp drop in traffic, falling prices, the roll out of bundled offers and tariffs with free fixed calls have been factors responsible for the falling trend reported in separable FTS revenues. Non-separable FTS revenues included in a bundle of services are not considered here (i.e. when included in a bundle of services). As such the decline in revenues presented here is likely overestimated.

In 2011, total revenues fell 22.2 percent, with traffic revenues falling 28.6 percent and revenues from installation and monthly subscription charges falling 16.9 percent.

Table 164 – FTS revenues

	2010	2011	Var. (%) 2010/2011	Var. (%) annual average 2007/2011	Var. (%) accumulated 2007/2011
Total revenues ¹¹⁸	742,555	577,461	-22.2%	-13.6%	-44.3%
Revenues from monthly charges and installation fees	405,659	337,074	-16.9%	-11.9%	-39.7%
Revenues from calls and SMS originating on the fixed network ¹¹⁹	336,896	240,387	-28.6%	-15.8%	-49.8%

Units: thousands of euros, %

Source: ICP-ANACOM





Unit: thousands of euros

Source: ICP-ANACOM

¹¹⁸ Excludes revenues from traffic originated with virtual calling card, revenues from traffic to services of calls which are free to the caller (800 prefix), revenues from traffic to services of shared cost calls (808, 809 prefix), revenues from traffic to personal number services (884 prefix), revenues from traffic to universal access services (707 and 708 prefixes), revenues from traffic to flat-rate call services (760, 761 and 762 prefix) and revenues from traffic to short numbers.

¹¹⁹ Includes revenues from local, regional and national traffic communications, fixed-mobile calls (originating on the fixed network), outgoing international traffic originating on the fixed network, public pay-telephones and SMS originating on the fixed network.

During the period being reported, total revenues from the fixed telephone service was in downward trend. In relation to 2007, there was a decrease of around 44.3 percent in total revenues, with revenues from monthly subscriptions and installation fees falling around 39.7 percent and revenues from calls falling 49.8 percent.

According to Marktest's *Barómetro de Telecomunicações* (Telecommunications Barometer) study, the average monthly expenditure of households on stand-alone FTS has been declining steadily, falling to about 16 euros in 4th quarter 2011 and with a reduction of about 5.9 percent compared to 4th quarter 2010.



Graphic 140 – Evolution of monthly average expenditure on the FTS (stand-alone)

Unit: euros

Source: Marktest - *Barómetro de Telecomunicações* (Telecommunications Barometer) Study, 4Q2009 to 4Q2011 Base: Households with fixed telephone service not included in bundle

Note: The margins of error with respect to the averages are below 1.3 percent.

6.3.4. Consumer satisfaction

In general the FTS has high satisfaction levels. According to Marktest's *Barómetro de Telecomunicações* (Telecommunications Barometer), referring to the 4th quarter 2011, about 84 percent of users give the service a rating equal to or greater than 7 (on a scale of 1 to 10). The proportion of consumers that considered the service to be good or very good has risen by around 3.7 percent over 2010. The number of consumers who consider quality of service as negative or not positive fell compared to the previous year.

Table 165 – Level of overall satisfaction with FTS which	h is provided by the operator
--	-------------------------------

Satisfaction with the provider's overall service	4Q2009	4Q2010	4Q2011
Negative (1-4)	5.7	5.0↓	3.6 *↓
Low positive (5 and 6)	15.1	15.1	12.6 🗸
Medium positive (7 and 8)	39.3	37.6 🗸	39.8 🕇
High Positive (9 and 10)	39.9	42.4 ↑	43.9 ↑
Total	100	100	100

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q2009 to 4Q2011

Base: Total dwellings with access to telephone service (excludes non-responses). **Note 1:** Original measurement scale: 1: Totally dissatisfied; 10: Totally satisfied.

Note 2: Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate.

Note 3: The upward pointing arrow signals a statistically significant increase between the instance t-1 and t and a downward arrow signals a statistically significant decrease between these two instances.

Meanwhile, according to the same study, the average level of satisfaction with the FTS that is provided by the operator increased in 4th quarter of 2011 compared to same quarter of previous year for all criteria examined, which resulted in an increase in the average level of satisfaction with the provider's overall service.

Table 166 – Average level of satisfaction with the FTS that is provided by the operator according to different criteria

	4Q2009	4Q2010	4Q2011
Diversity of products and services	7.5	7.6	7.9 ↑
Customer service	7.4	7.5	7.7 ↑
Pricing	6.9	7.1 ↑	7.3 🕇
Quality of sound / network (no noise / interference in calls)	8.2	8.3	8.3
Overall service of provider	7.8	7.9	8.1 1

Unit: scale 1 (totally dissatisfied) to 10 (totally satisfied)

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q2009 to 4Q2011

Base: Total dwellings with access to telephone service (excludes non-responses).

Note 1: The absolute margin of error in the averages on a scale of 1 to 10 are less than 0.11.

Note 2: The upward pointing arrow signals a statistically significant increase between the instance t-1 and t and a downward arrow signals a statistically significant decrease between these two instances.

Considering the FTS consumer profiles estimated in the Cluster analysis performed in section 2.2.1 of Chapter 2, the highest average level of overall satisfaction with the provider of the FTS in homes with FTS can be observed in homes with few electronic communication services (8.5 points in group 1). These homes are significantly less dissatisfied than those belonging to other groups in terms of "diversity of products and services" and "customer support".

Homes with various electronic communication services including FTS are overall less dissatisfied with the FTS (10.6 percent in group 2) although the most dissatisfied (17.9 percent) with regard to "customer support".

The third group (homes that use FTS less intensely) report the lowest average level of overall satisfaction with their FTS provider (7.6 points) with 15.4 percent reporting overall dissatisfaction. In contrast to the other groups, these homes are manifestly more dissatisfied with "the diversity of products and services" than with "customer support".

Table 167 – Satisfaction with the FTS according to different criteria (differentiation by FTS consumer profile)

	GROUP 1 Households with FTS but with few EC services	GROUP 2 Households with various EC services in addition to the FTS	GROUP 3 Homes that use the FTS with less intensity	Total
Average level of satisfaction (scale 1 to 10)				
Diversity of products and services	8.4	7.7	7.3	7.8
Customer service	8.3	7.5	7.5	7.7
Pricing	7.6	7.3	6.7	7.3
Sound quality / network (no noise / interference calls)	8.7	8.1	8.0	8.3
Overall service of provider	8.5	7.9	7.6	8.0
Percentage of households dissatisfied (rating -	<= 5)			
Diversity of products and services	9.8	11.6	18.1	12.1
Customer service	10.4	17.9	17.8	16.0
Pricing	23.0	22.8	32.3	24.1
Sound quality / network (No noise / interference calls)	8.0	9.0	12.7	9.2
Overall service of provider	10.9	10.6	15.4	11.3

Units: scale 1 (totally dissatisfied) to 10 (totally satisfied); %

Source: This analysis is provided by ICP-ANACOM based on Marktest microdata - *Barómetro de Telecomunicações* (Telecommunications Barometer) Study, 2nd half 2011

Base: Total homes with access to telephone service (excludes non-responses).

Note 1: The absolute margin of error in the averages on a scale of 1 to 10 are less than 0.18. Key to symbols on estimates:
(#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate.
Note 2: The shaded averages indicate those that are significantly different (horizontal) according to the test of equality between averages. Higher averages are highlighted in light shading and lower averages in dark shading.

6.4. Penetration of fixed telephone service (FTS)

In 2011, penetration has increased, due to the increase in the number of accesses, as previously explained, rising to 43 accesses per 100 inhabitants.





Unit: total main access per 100 inhabitants

Source: ICP-ANACOM

In 2010, telephone penetration in Portugal (42.1 accesses per 100 inhabitants) was higher than the European average (39.3 in 2010). In the EU, the penetration rate of this service fell by 3.7 percentage points between 2006 and 2010. In Portugal, during the same period, there was an increase in the penetration rate of 2.1 percentage points.



Graphic 142 – International comparison of access penetration rates

Unit: accesses per 100 inhabitants

Source: ITU, ICP-ANACOM, Eurostat

From another perspective, analyzing the penetration of FTS accesses by NUTS II in terms of population, there is a higher concentration reported in the Lisbon region with 45.8 percent and in the Algarve region with 44.6 percent. Only the North region reports a penetration rate which is significantly below average.

NUTS II	Residential accesses Non- residential accesses		Total
North	26.0	6.9	32.9
Centre	29.6	7.4	37.0
Lisbon	37.1	8.7	45.8
Alentejo	29.9	7.5	37.5
Algarve	34.3	10.3	44.6
Autonomous Region of the Azores	30.6	6.9	37.6
Autonomous Region of Madeira	29.9	8.2	38.1
Total	30.6	7.7	38.3

Table 168 – Penetration of FTS accesses in terms of total population

Unit: accesses per 100 inhabitants

Source: ICP-ANACOM; INE (Statistics Portugal)

In 2011, the penetration rate of residential FTS accesses, calculated in terms of private households¹²⁰, was reported at 80.4 accesses per 100 households.

NUTS II	Residential accesses
North	73.0
Centre	77.7
Lisbon	91.8
Alentejo	74.0
Algarve	82.0
Autonomous Region of the Azores	92.2
Autonomous Region of Madeira	79.8
Total	80.4

Table 169 – Penetration of residential FTS accesses in terms of total households

Unit: accesses per 100 households

Source: ICP-ANACOM; INE (Statistics Portugal)

¹²⁰ Number of private households by place residence as on date of 2011 Census. Source: INE (Statistics Portugal).

Meanwhile, if analyzing the penetration rate of residential FTS accesses in terms of conventional dwellings¹²¹, this is reported at 56.5 accesses per 100 dwellings.

NUTS II	Residential accesses
North	52.1
Centre	49.7
Lisbon	74.1
Alentejo	48.1
Algarve	42.5
Autonomous Region of the Azores	70.2
Autonomous Region of Madeira	60.3
Total	56.5

Table 170 – Penetration of residential FTS accesses in term of total dwellings

Units: accesses per 100 dwellings, p.p.

Source: ICP-ANACOM; INE (Statistics Portugal)

The following map illustrates the geographical distribution of penetration of residential accesses of this service per conventional dwelling.

¹²¹ Conventional dwellings (housing stock - No.). Source: INE (Statistics Portugal), Estatísticas das Obras Concluídas (Statistics of Concluded Projects). 2010 data with revision of 29.07.2011.

Figure 15 – Geographic distribution of the penetration of FTS accesses in terms of conventional dwellings (Mainland Portugal) – 4th quarter 2011



Acessos STF Residenciais por 100 alojamentos 4T2011



Source: ICP-ANACOM

Figure 16 – Geographic distribution of the penetration of FTS accesses in terms of conventional dwellings (Autonomous Regions of Madeira and the Azores) – 4th quarter 2011



Source: ICP-ANACOM

Analyzing the FTS penetration according to different demographic groups shows that its increase is not widespread. According to Marktest's *Barómetro de Telecomunicações* (Telecommunications Barometer), it is observed that:

- homes, where the respondent is older (55 years or over);
- homes where the respondent was older and had a lower level of education (less than or equal to 1st cycle of basic education) and
- homes where the respondent is between 35 and 54 years old and has a low level of education

showed a statistically significant change¹²² of trend in the evolution of FTS penetration from July 2010. The service's penetration among these groups has been declining since that date.



Graphic 143 – FTS penetration rate in some groups according to levels of lower education and / or older ages¹²³

Unit: %

Source: MARKTEST - Barómetro de Telecomunicações (Telecommunications Barometer) Study

Base: Households with voice electronic communication services

Note: The variables of age group and educational level refer to individual characteristics, whereby they are not part of the stratification groups of the sample of homes (district and region Marktest). This information is purely indicative of the estimate in question.

In contrast to the groups mentioned above, note is made of homes where the respondent is in the youngest age group (15-34 years) and with higher levels of education (secondary or higher education). In these homes, the service's penetration increased between July

¹²² According to the Quandt Likelihood Ratio (QLR) statistical test, which makes it possible to identify structural changes in a time series.

¹²³ Marktest's Barometer compiles information by telephone, assuming an overall FTS penetration rate of 60 percent at the end of 2010 and 65 percent in 2011. This translates into an increase in the penetration rate across all socio-demographic groups under analysis from 2011, albeit with different incidence associated with the shares used in the selection sample.

2010 and March 2011, showing a statistically significant change in trend in these two periods.

Graphic 144 – FTS penetration rate in terms of households where respondent if of younger age and has higher level of education



Unit: %

Source: MARKTEST - Barómetro de Telecomunicações (Telecommunications Barometer) Study

Base: Homes with voice electronic communication services

Note: The variables of age group and educational level refer to individual characteristics, whereby they are not part of the stratification groups of the sample of homes (district and region Marktest). This information is purely indicative of the estimate in question.

The penetration rate in this group has been rising in terms of services sold in bundles and with unlimited calls, and is above average, even after the stabilization of the FTS penetration rate from March 2011.

It should also be noted that it was from 2010 that optical fibre began to have more expression in the market, possibly explaining the increase in FTS penetration during this year among this group.

MOBILE TELEPHONE SERVICE (MTS)

7. Mobile telephone service (MTS)

This chapter presents the state of the MTS at the end of 2011 and its evolution over recent years, describing in particular the provision of this service and the profile of its use and of its users.

A summary is given below of the main aspects of the evolution of the service during 2011.

7.1. Key aspects of the evolution of the service in 2011

- At the end of 2011, MTS penetration rose to 157.9 (active cards) per 100 inhabitants, one of the highest rates in the EU. The penetration of the MTS in 2011 remains above the EU average. If only mobile stations with actual use are considered, the penetration rate reported in Portugal (126.6) would be slightly below the European average.
- The number of subscribers increased from 1.9 percent to 16.8 million. The growth is below the average of the past five years and is also lower than the growth seen in 2011 in the EU. The number of users who actually used the service 13.5 million is lower than in 2010. The reported evolution results from the suspension of government's *e-iniciativas* programme in the first quarter of 2011.
- At the end of 2011, three out of every 10 mobile stations with actual use made use of typical MBB services, especially the IAS. The number of active broadband users reached approximately 4.2 million, 1.8 percent more than the previous year. The growth seen is due largely to the growing number of users of the Internet access service using mobile broadband (an increase o 14 percent compared to 2010), including users who use mobile phones to access this service while users of cards/modem decreased by 11.3 percent due to the suspension of the *e-iniciativas* programme.
- In 2011, voice traffic reported in terms of minutes saw a growth rate (7 percent) below the average of the previous five years (12.2 percent) and is the lowest rate of growth reported in the period. The reported growth was below the lower limit of the forecast range resulting from the historical trend. The growth reported in the number of calls was even lower than the growth reported in the number of subscribers.

- A further increase is reported in the number of text messages sent in 2011 (2.3 percent), although less significant than in previous years.
- The relatively new services such as the multimedia messaging service (MMS), video telephony and mobile TV have limited penetration.
- Services revenues from customers reached 2.43 billion euros, below revenues reported in the previous year. The reported decline in revenues was primarily caused by a reduction in revenues from voice communications and MBB Internet access – which saw decreases of 11.7 and 13.6 percent, respectively.

7.2. The offer of the mobile telephone service (MTS)

The MTS is a public electronic communications service that enables the transmission of signals over terrestrial electronic communications networks. The access network consists of radioelectric resources and mobile terminal equipment.

The service is provided by undertakings which are licensed for the purpose, since the use of frequencies is subject to the allocation of individual rights of use¹²⁴, or by providers whose services are based on the networks of licensed operators.

Below, more detail is given on the services provided and on the undertakings offering these services in Portugal.

7.2.1. MTS

The 1st generation (1G) of the mobile service was designed exclusively for voice communications. It used analogue signals and a transmission technique based on frequency division multiple access (FDMA)¹²⁵. This transmission technique assigns each channel to a frequency band. 1G is identified with analogue systems. In Portugal, this service was provided by TMN between 1989 and 30 October 1999.

2nd generation (2G) uses the GSM/Digital Cellular System 1800 MHz (DCS 1800) standards of the European Telecommunications Standards Institute (ETSI), working in the 900 MHz (GSM) and 1800 MHz (DCS 1800) bands. It is characterized by the use of digital technology, with provision of low bandwidth data transmission services (e.g., fax and email) provided alongside voice services. 2G uses a technique that makes more efficient use of spectrum based on time division multiple access (TDMA)¹²⁶.

As a wireless technology, GSM was enormously successful and had unprecedented takeup worldwide. GSM networks have seen very rapid and broad geographical deployment.^{127,128}

¹²⁴ See paragraph 3 of article 19 of Law no. 5/2004 of 10 February.

¹²⁵ Access system characterized by the allocation of different frequencies to each user.

¹²⁶ Access system characterized by simultaneous access by multiple users to a single radio frequency band, using time slots).

¹²⁷ <u>http://www.gsmworld.com/technology/index.htm</u>.

¹²⁸ http://www.gsmworld.com/newsroom/market-data/market_data_summary.htm).

In addition to voice services, GSM enabled the development of SMS, which is a feature that allows short text messages to be sent between mobile phones.

The GSM platform has been improved and developed in order to allow an expanded offer of voice and data services.

Several manufacturers have combined efforts in order to define a protocol that could be used by all mobile communication systems. This protocol, called wireless application protocol (WAP)¹²⁹, allows standardized communication between mobile phones and a server installed on the mobile operator's network. Even though it enabled the introduction of some improvements in terms of mobile phone Internet access, this protocol did not receive wide acceptance. Its main limitations include slow access to information and a very specific and limited offer of content.

The technical characteristics of this platform (narrowband) and the limitations of terminal equipment (small screen and keyboard, short battery life and limited memory and information processing capacity), while enabling mobility on a grand scale, do not allow Internet access via a mobile phone in the same way as a personal computer connected to a fixed telephone network.

The limitations of these standards led to the development of 2+ generation mobile networks. Based on GSM, technologies have been introduced and developed to support data services, such as GPRS¹³⁰ and enhanced data rates for GSM/DCS evolution (EDGE)¹³¹, enabling the provision of mobile data services with higher quality in terms of capacity and processing rates (transmission speed increased from 9.6 Kbps, available on GSM networks, to values of up to 115 Kbps with error protection and 384 Kbps).

Since 2001 and 2002 respectively, in terms of the service's features, mobile operators have provided the enhanced message service (EMS) and MMS. EMS is an optimization of SMS and very similar in terms of use; it enables transmission and receipt of

¹²⁹ A wireless application protocol, using specific language and technology, which allows users of mobile phones and other wireless digital devices to access Internet content, exchange e-mail or perform other data transmission operations. It is used, in particular, on mobile communications networks. Therefore, through a micro-browser it is possible to view pages on the phone screen which are written in a special language called WML (Wireless Mark-up Language), more suitable than HTML (HyperText Mark-up Language) for transmitting data to wireless devices.

¹³⁰ Evolution of the GSM system, based on packet switching, which enables transmission at speeds of up to 115 Kbps.

¹³¹ Evolution of the GSM system that enables transmission at speeds up to 384 Kbps.

graphics/logos or sound elements/ringtones, combining melodies, images, sounds, animations, modified text and normal text in an integrated manner. MMS, as the name suggests, is a facility for sending and receiving text messages, sound, image and video. It also became possible to send moving messages and videos.

GPRS networks also enable data transmission at much faster speeds than traditional GSM, allowing access to the Internet, e-mail, multimedia messaging and location-based services in an "always on" mode.

Meanwhile, by allowing data communication without requiring the establishment of a voice channel, they enable tariffs to be defined based on data traffic volumes rather than the duration of the communication.

In addition, by force of regulation, other important features were introduced in the MTS: indirect access (available since 31 March 2000) and operator portability (since 1 January 2002).

3rd generation (3G), also digital, was designed to achieve convergence between fixed and mobile and between telecommunications and multimedia, with mobile networks approaching the capacity of fixed networks and giving mobile users access to multimedia services with speeds upwards of 384 Kbps.

3G mobile telecommunications systems include UMTS, in the 2 GHz band, identified as the European standard of the global standards family of international mobile telecommunications systems (IMT2000/UMTS).

UMTS is a technology with transmission based on the wideband code division multiple access (WCDMA) system¹³². Although it is different from those used in GSM and GPRS, this technology, which requires the development of complex networks and systems, is designed to be fully interoperable with GSM. As at the end of 2009, it is estimated that there were around 453 million WCDMA subscribers (including HSPA) worldwide, representing annual growth of 50 percent¹³³.

UMTS enables the provision of advanced multimedia services, regardless of user location; this allows the development of new services and applications: Internet-based services,

¹³² Wideband access system where several users share the same frequency band using different codes.

¹³³ <u>http://www.gsacom.com/news/statistics.php4</u>.

electronic commerce, location-based services, direct transmission of photos from cameras (using Bluetooth¹³⁴), transmission of live video, remote monitoring of people and vehicles and games and songs downloads.

Today's mobile phones have many features: in addition to making telephone calls, they allow use of a range of service that increase the flexibility of mobile communications, including call waiting and call holding, call forwarding, caller identification and data services. The microelectronics associated with the development of software for these applications also allows the incorporation in handsets of a digital camera, a frequency modulation (FM) receiver, an MPEG-1/2 music player *Audio Layer*-3 (MP3), among others.

In Portugal, during 2004, after the delays associated with difficulties in stabilizing the technology, a new set of 3G mobile services was launched based on IMT2000/UMTS technology (WCDMA).

Commercial services based on 3G – including, broadband Internet access, video-calling, multimedia services, etc. – were introduced in January 2004 on an experimental basis, and were launched commercially by TMN, Vodafone and Optimus, respectively, on 21 April 2004, 4 May 2004 and 4 June 2004.

From 2006 new services began to appear using the high speed packet access standard¹³⁵ (HSPA), often referred to as 3.5G. This is an extension of WCDMA that enables significantly higher speeds and includes improved modulation schemes which allow better use of UMTS bandwidth.

Downstream – HSDPA (downlink) – the services supported with this standard can, theoretically, reach maximum speeds of 14.4 Mbits/s, although, for operational reasons, some providers have introduced offers with lower theoretical maximum transmission speeds (between 0.5 and 7.2 Mbits). Currently, HSPA is supported by more than 364

¹³⁴ Short-range wireless technology operating in the 2.4 GHz frequency band, which provides connectivity between devices on the user's premises within a radius of approximately 10 meters, with a maximum transmission speed of 1 Mbps. In the future, it may evolve to allow between 6 and 11 Mbps and a range of 100 meters.

¹³⁵ HSPA combines two mobile telephone protocols High Speed Downlink Packet Access (<u>HSDPA</u>) and High Speed Uplink Packet Access (<u>HSUPA</u>), enhancing and improving the performance of existing <u>WCDMA</u> protocols.

networks in 144 countries¹³⁶. It is estimated that there were 217 million subscribers worldwide at the end of 2009.

Upstream, high speed uplink packet access (HSUPA) – this standard supports up to 5.76 Mbit/s, with the first commercial network appearing in 2007. On 30 August 2007, the Finnish operator Elisa announced an offer at 1.4 Mbit/s in the largest cities, with plans to extend the service across the entire 3G network within a few months. The first developments support up to 1.5 Mbits/s. The investment required to develop HSPA consists mainly of software upgrades with reduced costs that could lead to lowering the average cost per bit carried on mobile networks.

In Portugal, offers based on HSDPA first appeared in March 2006 with a speed of 1.8 Mbps. In September of that year, speeds evolved to 3.6 Mbps using, in addition to Personal Computer Memory Card International Association (PCMCIA) cards, modem with universal serial bus (USB) connection. In November 2006, speeds evolved to 7.2Mbps. HSUPA-based services appeared in September 2007, with cards that allowed upload speeds of up to 1.4 Mbps.

In 2008, the characteristics of the offers were changed. Operators increased download speeds and changed the tariff conditions.

In 2009, the EC revised the GSM Directive, paving the way for a new generation of services and technologies by allowing mobile operators to use new technologies in GSM bands – in the 900 MHz band – and so offer fourth generation high-speed mobile broadband services. As a result, consumers can continue to use their handsets without any problems, but may also use new technologies to access high-speed broadband services (in 2007 and 2008, after receiving authorisation from ICP-ANACOM, three Portuguese mobile operators conducted technical trials with UMTS technologies in the 900 MHz band, allocated to GSM).

In 2009, trials and offers were announced and launched supported by HSPA+, using the latest modulation techniques (Quadrature Amplitude Modulation – 64QAM) and Multiple

¹³⁶ http://www.gsacom.com/news/statistics.php4,

http://www.gsacom.com/downloads/pdf/GSA_GSM_3G_Network_Update_Feb2009.php4

Input Multiple Output (MIMO)⁵⁵ technology. HSPA+ has theoretical maximum speeds of 56 Mbps downlink and 22 Mbps uplink. Tests and available offers allow mobile Internet navigation with a theoretical speed of up to 21.6 - 28.8 Mbps.

In 2009, MBB offers were launched in Portugal with download speeds of up to 21.6 Mbps, based on HSPA+ technology.

In 2009, offers were also launched in Portugal based on Femtocell technology which amplifies the communications signal in indoor environments, through equipment installed on customer premises.

In 2010, MBB Internet access offers appeared with download speeds of 43.2 Mbps supported over HSPA+.

The next step in mobile networks based on 3G technologies is long term evolution (<u>LTE</u>). This new wireless access technology will optimize the speed of data transmission, allowing up to 100 Mbps downlink and 50 Mbps uplink¹³⁷.

In 2009, Grupo PT announced a commitment to investment in 3G LTE¹³⁸. In 2010, in addition to TMN, Vodafone also¹³⁹ and Optimus¹⁴⁰ began testing LTE technology, including demonstrations with equipment suppliers. At one of the first public demonstrations of LTE in Portugal, speeds were tested between 100 and 150 Mbps, which had only been verified in the laboratory.¹⁴¹

On 9 March 2012, and following the multi-band auction held in Portugal¹⁴², ICP-ANACOM approved the issue of unified titles of rights of use of frequencies for terrestrial electronic

⁵⁵ MiM0 (Multiple input, Multiple Output) is the antenna technology for wireless communications where multiple antennas are used at both the source (transmitter) and the destination (receiver)

¹³⁷ The LTE standard was developed by the 3rd Generation Partnership Project (3GPP); more details can be found at http://www.3gpp.org/LTE.

¹³⁸ See PT's website at <u>Home</u> > <u>Media</u> > <u>News</u> > <u>News</u> 2009 > 8 October 2009 or http://www.telecom.pt/InternetResource/PTSite/UK/Canais/Media/DestaguesHP/Highlights_2009/Itezb.htm

¹³⁹ On Vodafone's website at <u>www.vodafone.pt</u>, follow <u>Empresa > Press Releases > 2010 2º trimestre</u> 9 April 2010 or http://www.vodafone.pt/main/A Vodafone/PT/Press Releases/pressReleases.htm?id=2308&year=2010&quarter=2

¹⁴⁰ On Optimus's website at <u>www.optimus.pt</u> follow Sobre a Optimus > Media Center PressReleases > 2010-03-15 or see <u>http://www.optimus.pt/Main/SobreaOptimus/PressReleases/2010/03/15/276358F8-ACF2-47B1-</u> <u>B795-E4F5224C99E2</u>.

¹⁴¹ <u>Home</u> > <u>Media</u> > <u>News</u> > <u>2010</u> > TMN presents first demonstration of LTE in Portugal.

¹⁴² See <u>http://www.anacom.pt/render.jsp?categoryId=340922</u>.

communications services to Optimus, TMN and Vodafone Portugal, allowing these operators to offer 4G services. 4th generation MBB access offers launched by operators allow download speeds of 50 and 100 Mbps.

7.2.2. Geographic availability of the service

The MTS is available in the overwhelming majority of the country, reaching almost 100 percent of the population.

In terms of the various MTS access technologies, there is now broad coverage in terms of 3G (WCDMA) in most towns and cities. In the case of main roads, coverage is more limited, as is clear from studies performed by ICP-ANACOM to evaluate quality of service¹⁴³.

7.2.3. The land mobile service providers (MTS)

The MTS began to be offered in Portugal in 1989 by a consortium consisting of CTT – Correios de Portugal S. A. (CTT) and by Telefones de Lisboa e Porto (TLP). TMN – Telecomunicações, S. A. was only constituted later, on 22 March 1991. The services used C-450 analogue technology.

In March 1991 a public tender was held to grant a license for the provision of the MTS using GSM technology. This license was awarded to Telecel – Comunicações Pessoais, S. A. (Telecel) on 18 October 1991. The commercial offer of the service began on 18 October 1992. On 20 July 2006, this title was renewed for 15 years, until 19 October 2021¹⁴⁴.

An operating license was issued to TMN on 16 March 1992, and the company started offering the service in October 1992. After 15 years, the right of use of frequencies allocated to TMN for the provision of MTS according to the GSM 900/1800 system was

¹⁴³ ICP-ANACOM's website at <u>www.anacom.pt</u> follow <u>Home</u> > <u>Publications</u>> Quality Reports.

¹⁴⁴ At <u>www.anacom.pt</u> <u>Home</u> > <u>Sector</u> > <u>Titles conferred by ANACOM (Rights of use of frequencies, licenses</u> <u>and authorizations</u>) > <u>Direitos de Utilização de Frequências (Rights of use of frequencies</u>) > Land Mobile Service (GSM/UMTS).

also renovated for a period of 15 years, until 16 March 2022¹⁴⁵. Likewise, a set of general conditions were established governing the provision of service, with conditions attached to the right of use of frequencies.

On 15 July 1997, Notice No. 3542-A/97 (2nd Series) was published, opening a new tender to award a license for the provision of the mobile telephone service according to the GSM and DCS 1800 standards, using the 900 MHz and 1800 MHz frequency bands, respectively. Following this tender, a license was awarded to Optimus, which started its commercial offering in August 1998.

By determination of 24 October 2007, approval was given to the final decision on the request for authorization in respect of the transmission of rights of use of frequencies and numbering granted to Optimus to the title of Novis Telecom, S. A. (Novis)¹⁴⁶. The new company resulting from the merger was named: Sonaecom – Serviços de Comunicações, S. A.

However, while title of the mobile service mobile remains in the name of Sonaecom, the Optimus brand was always maintained for the mobile service.

On 1 July 2010, Sonaecom – Serviços de Comunicações, S. A. changed its name to Optimus – Comunicações, S. A. This company covers the range of electronic communications services, while some previous brands were maintained, including Optimus Kanguru for the MBB and Optimus Clix for the fixed service with bundled offers (television, Internet and voice).

UMTS licensing

In August 2000 a tender was opened to award four national licenses for International Mobile Telecommunications Systems (IMT2000/UMTS). In December of that year, four licenses were awarded to Telecel (now Vodafone), to TMN, to OniWay – Infocomunicações, S. A. (Oniway) and Optimus.

¹⁴⁵ At <u>www.anacom.pt</u> <u>Home</u>> <u>Sector</u>> <u>Titles conferred by ANACOM (Rights of use of frequencies, licenses</u> <u>and authorizations)</u> > <u>Direitos de Utilização de Frequências (Rights of use of frequencies)</u>> Mobile Telephone Service (GSM)

¹⁴⁶ At <u>www.anacom.pt</u> <u>Home</u> > <u>Mobile Networks and Services</u> > <u>Determinations</u> > <u>Direitos de Utilização de</u> <u>Frequências (Rights of use of frequencies)</u>Transfer from OPTIMUS to NOVIS TELECOM of rights of use for frequencies and for numbers - determination of 24.10.2007.

Commercial 3G 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 licensed for this system, OniWay, did not initiate its activity in mobile telecommunications, and the revocation of the license was formalized in January 2003 by Order of Minister of Economic Affairs (Order No. 1758/2003 of 29 January).

Following this withdrawal, TMN, Vodafone and Optimus, requested the allocation of additional frequencies for the operation of international mobile telecommunications systems (IMT2000/UMTS). The Minister for Economic Affairs, pursuant to and in accordance with paragraph 3 of article 24 of Decree-Law No. 381-A/97 of 30 December, decided to allocate to TMN, Vodafone Telecel and Optimus, respectively, 2x5 MHz of additional shared spectrum in the 1920-1980 MHZ and 2110-2170 MHz frequency bands for the operation of these IMT2000/UMTS systems.

Licensing in the 450-470 MHz band

On 4 October 2007 a public consultation was launched on the rights of use of frequencies in the 450-470 MHz band for the provision of the publicly available land mobile service (LMS). This decision resulted from the availability of spectrum and was aimed at promoting competition.

In May 2009, ICP-ANACOM's Management Board decided to repeal the act that attributed this right of use of frequencies to Rede Nacional de Telecomunicações (RNT) after the company requested an extension of the deadline to comply with obligations of raising and posting the required guarantee bonds.

Mobile virtual network Operators (MVNOs)

On 9 February 2007, ICP-ANACOM defined the regulatory framework governing the MVNO.

The MVNO activity is comprised by the offer of electronic communications networks and services and is subject to the general authorization regime, as well as conditions resulting from the allocation of rights of use of numbers. MVNO do not use rights of use of frequencies and therefore do not have their own infrastructure associated with the wireless access network; instead they use the wireless resources provided by the network

operator(s) possessing the respective rights of use. The MVNO has a direct contractual relationship with the end-customer, associated with provision of the service, moving away from the notion of activities merely comprising the distribution of services, on which the contractual relationship is maintained between the end-customer and the mobile network operator.

As such MVNOs have direct customers, i.e., they are solely responsible for the relationship with end-users, they conceive their own retail product to offer the market, and are free to differentiate their offer from the offer of the operator supporting their services, defining their own business strategy.

On 30 November 2007, CTT became the first provider of MTS supported on the network of a third operator.

In October 2008, ZON TV Cabo Portugal announced provision of the mobile service supported on Vodafone's network, for a one month trial period. In November 2008, it launched a commercial offer to the general public.

In addition to these companies, authorization declarations were also issued to Companhia Portuguesa de Hipermercados, S. A. (Auchan) and ACP – Comunicações Electrónicas, Unipessoal, Lda. These companies did not begin operations during 2008, and lost the right to use the previously reserved numbering ranges.

Current situation

As such, there are five companies providing these services, as shown in the following table.

Optimus Telecomunicações, S.A.	Network operator		
TMN — Telecomunicações Móveis Nacionais, S.A.	Network operator		
Vodafone Portugal – Comunicações Pessoais, S.A.	Network operator		
CTT – Correios de Portugal, S.A.	Provider of service supported by TMN network		
ZON – TV Cabo Portugal, S.A.	Provider of service supported by Vodafone network		

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Source: ICP-ANACOM

In 2009 ZON launched its MBB offer. CTT began selling a MBB offer from TMN under its own brand.

Since 2006, new offerings have appeared commercially distributed by companies other than the operator, supported on the Optimus network (e.g.: Talk Talk Mobile, sold by The Phone House with preferential rates to the brand's numbers, Benfica Telecom, Continente Mobile, etc.).

The entities engaged in these activities are not MVNO, and are therefore not providers of MTS.

Offer structure

As noted above, there are three network operators in Portugal and two service providers.

Most EU countries have more than three MTS operators, with the exception of Cyprus, which has only two operators (although with first MVNO in June 2011). The concentration in Portugal is relatively high. Although the market leader in Portugal has the 10th smallest share of subscribers among the considered countries, the sum of the shares of the two leading operators is 5th highest. Only Cyprus, Malta and Luxembourg have higher values.





Source: EC, Digital Agenda Scoreboard 2012 (Provisional data)

Unit: %

The level of concentration in Portugal can be linked to possible barriers to switching operator. In fact, according to data from Marktest's *Barómetro de Telecomunicações* (Telecommunications Barometer)¹⁴⁷, the rate of operator switching in 2011 was 1.9 percent. "Price" is the main factor that has motivated intentions to switch provider.

Table 172 – Switching MTS provider

Rate of provider switching	4Q2007	4Q2008	4Q2009	4Q2010	4Q2011			
Rate of provider switching (anytime)	17.6	17.2	18.3	17.8	18.1			
Rate of provider switching (in last year)	3.1 *	2.5 *	2.4 *	1.5 *↓	1.9 *			
Base: Individuals with 10 or more years with access to mobile telephone services (excluding non-responses)								
Reason for switching provider (multiple choice)								
Lower prices	31.7	30.1	32.8	32.1	25.3 🗸			
Friends/family connected to network	25.8	27.9	31.9	31.6	33.7			
Larger coverage area	9.7 *	5.9 * 🗸	8.4 *	9.2 *	10.3 *			
Decision of the company/professional reasons	5.2 *	5.6 *	4.7 *	5.1 *	6.4 *			
Poor support / poor service	8.1 *	11.1 *	3.4 * 🗸	4.6 *	6.8 *			
Offer of another network handset		2.7 *	3.0 *		3.3 *			
Change of mobile phone	6.2 *	4.8 *	3.1 *	3.2 *	4.8 *			
Better perks		2.5 *	2.6 *					
Other reasons	4.8 *	5.7 *	7.5 *	7.2 *	8.6 *			
[Don't know/No response]	10.0	8.5	9.2	8.0	4.0			
Base: Individuals aged 10 or over with MTS access which have already changed provider at least once.								

Unit: %

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q207 and 4Q2011

Note 1: The question about the reasons for switching provider is multiple choice.

Note 2: The coefficient of variation is considered as sampling error indicator, based on the variance of the "proportion" or "average" estimator (according to case) of a simple random sample and assuming a significance level of 95 percent. The following classification is considered: reliable estimate when the coefficient of variation is less than 10 percent; acceptable estimate when the coefficient of variation is greater than or equal to 10 percent and less than 25 percent; unreliable estimate when the coefficient of variation is greater than or equal to 25 percent. Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate.

Note 3: The upward pointing arrow signals a statistically significant increase between the instance t-1 and t and a downward arrow signals a statistically significant decrease, through the statistical test of the difference between two proportions for large and independent samples, considering a 95 percent confidence level.

Meanwhile, more than 93 percent of respondents stated that they would "definitely" not be switching providers in the near future.

¹⁴⁷ The *Barómetro de Telecomunicações* (Telecommunications Barometer) is a regular study of Marktest for the telecommunications sector. The universe of the *Barómetro de Telecomunicações - Rede Móvel* comprises people aged 10 and over living in mainland Portugal or in the Autonomous Regions of Madeira and the Azores; a sample is compiled on a monthly basis which is proportional to and representative of the study's universe, corresponding to 1,350 interviews per month.

	Table 173 -	- Intention to	change M	TS provider	in next three	e months
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	4Q2010	4Q2011
Will definitely or probably switch	1.9 *	1.9 *
Will probably not switch	3.3	2.4 *↓
Will definitely not change	91.8	93.8↑
[Don't know/No response]	3.0	1.9
Total	100	100

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q207 to 4Q2011 (see technical note - footnote 26)

Base: Individuals aged 10 or more years with access to mobile telephone service Note 1: Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate. Note 2: The upward pointing arrow signals a statistically significant increase between the instance t-1 and t and a downward arrow signals a statistically significant decrease between these two instances.

One of the regulatory mechanisms implemented to reduce barriers to switching operator is number portability. Portability lets customers switch provider without changing their number. However, in Portugal, this facility has not been widely used.

As at the end of 2011, there were 450 thousand ported mobile numbers in Portugal, representing about 3.1 percent of total active mobile stations/user devices. However, this situation is not related to difficulties associated with the porting process.

In fact, the time taken to accomplish portability of numbers ranges from the same day in Ireland, Czech Republic, Denmark, Romania and Sweden and 60 days in The Netherlands and 49 days in Poland. In Portugal, the average is three days, below the average of countries considered (nine days).

Graphic 146 – Days to accomplish portability



Unit: days

Source: EC, Digital Agenda Scoreboard 2012 (Provisional data)

Note: Consideration is given to the maximum number of days between the customer's first step in requesting number portability and the number's activation with the new operator.

7.2.4. Commercial mobile telephone service (MTS) offers and associated services

An outline is given below of MTS offers, data services and mobile TV.

This analysis does not reflect consumer take-up of the various types of referenced tariff, but only their availability in the market.

Offers mobile telephone service (MTS)

The offers on the market are extremely diverse, seeking to respond to the different consumption profiles of MTS users.

In 2011, about 117 different MTS tariff were reported¹⁴⁸, 28 more than in the previous year (with the discontinuation of 16 offers and the launch of 44 new offers). The evolution in the number of tariffs is associated with factors which include technological development, both in terms of network infrastructure and services, and in terms of terminal equipment.

In addition to offers made available directly by service providers which are licensed and authorized by ICP-ANACOM, there are offers that are associated with other companies, as mentioned above.

¹⁴⁸ Tariffs that allow the user to define combinations of services, prices and minimum account top-ups are not considered due to the multiplicity of possible combinations.
Of the total of about 117 tariff analyzed in 2011, about three quarters are pre-paid tariffs, and the remaining post-paid.





Unit: %

Source: ICP-ANACOM

The weight of post-paid tariffs increased by 6 p.p. in the last year.



Graphic 148 - Evolution in the distribution of tariff offers, by type

Unit: %

Source: ICP-ANACOM

Each tariff is distinguished by the available payment/account credit options, as well as the type of users targeted.

Depending on the profile of use, a particular user will subscribe to a tariff with prices that are the same for all networks or with a better price for a given destination.

In 2011, the tariff offers with prices which are not differentiated according to the destination of calls continued to be in the majority, accounting for around half the total. However, there was an increase in weight of tariffs with different prices for on-net calls (In most cases, these calls are free of charge). The proportion of tariffs with differentiated prices for certain groups of users fell.





Unit: %

Source: ICP-ANACOM

Tariffs also differ according to the form of billing. Depending on the form of billing, a tariff will be most suitable for those making short or long calls.

In 2011, the weight of tariffs that favour longer calls increased, including offers with billing in 30 second periods after the first minute and billing per minute (60+60) – which is a new option. In total, these two options now represent 50 percent of the offers available (22 percent in 2010). The weight of offers that have some component of per second billing has decreased significantly.

Graphic 150 – Distribution of billing models



Unit: %

Source: ICP-ANACOM

Additionally there are optional tariffs that let users make free calls or calls at reduced prices. Additional offers also include SMS packages, minutes of video or data (or a combination thereof) which are either free or have special prices for sending text messages, conducting video calls or to access the Internet with mobile terminal equipment.



Graphic 151 - Distribution of optional tariffs, by type

Unit: %

Source: ICP-ANACOM

Note: Does not include additional offers of mobile phone Internet access.

In addition to type of use, the mode of payment and the associated values should also be taken into account.

In the case of post-payment, the value of the monthly charge ranges between 12.50 euros and 115.19 euros, and there are six offers available at around 60 euros and five offers available at around 30 euros and four offers available at around 15 euros



Graphic 152 – Value of monthly charge in post-paid plans: number of offers

Unit: euros

Source: ICP-ANACOM

Among pre-paid offers, there are various possibilities with compulsory minimum credits, either minimum intervals or minimum amount. There are also packages with no compulsory credits. The minimum credit also varies according to the tariff plans.

Given the great diversity of tariff offers and their various components, the price of calls is also very varied.

In the case of on-net calls of three minutes, according to the analysed tariffs, the price of the call can vary between 0 and 1.17 euros, with an average (simple) of 35 cents.



Graphic 153 – Prices for a three-minute call, by destination



Source: ICP-ANACOM

In the case of an off-net call of three minutes, prices range between 0 cents and 2.13 euros, with an average of 61 cents.

The price of text messages (SMS) vary between 0 and 17 cents (on-net) or 30 cents (offnet) per unit, with an (simple) average price of 6 cents (on-net) or 10 cents (off-net). Free messages are usually limited by number or the expiration date of account credits.



Graphic 154 – Comparison of prices of messages (written and multimedia) of three minutes, by destination

Unit: euros

Source: ICP-ANACOM

The prices of multimedia messages vary between 0 and 43 cents. In some tariffs it is already possible to find free MMS, although of a limited quantity.

The price of a video-call with a duration of 3 minutes varies between 0 and 2.58 euros for both destinations (on-net and off-net). The average price is much lower in the case of video-calls within the same network, given the availability of packages of minutes of free video associated both with tariff with low on-net prices and also tariffs with user groups.



Graphic 155 – Prices of three-minute video-calls, by destination

Unit: euros

Source: ICP-ANACOM

Mobile phone Internet access service

In 2007 specific "Mobile phone Internet" offers were launched with daily or monthly, and later weekly, subscription options. In 2011 there were new deals by the MVNO's and some adjustments in network providers' offerings, particularly in terms of pricing and traffic limits.

	Optimus	TMN	Vodafone	ZON	СТТ
Monthly access		IT Light 100 MB / € 5.19 IT Standard 200 MB / € 7.99 IT Super 300 MB / € 10.39 IT Super Plus 600 MB / € 15.38 BlackBerry BIS Light 300 MB / € 10.39 BlackBerry BIS 600 MB / € 15.38	Internet 100 100 MB / € 5.19 Internet 300 300 MB / € 10.38 Internet 600 600 MB / €15.58	Z-WEB 100 100 MB / € 5.08 Z-WEB 300 300 MB / € 10.17 Z-WEB 600 600 MB / € 15.25	IT Light 100 MB / € 5.2 IT Super 300 MB / € 10.5 IT Plus 600 MB / € 15.5
Weekly access	Internet Já 30 MB/ \in 1.39 Internet Smart 75 MB / \in 2.49 Internet Power 250 MB / \in 4.99 BIS Internet Já 30 MB / \in 1.89 BIS Internet Smart 75 MB / \in 2.99 BIS Internet Power 250 MB / \in 5.49	IT Semanal 25 MB / €1.3	Internet 25 25 MB / € 1.29		
Daily access	Internet diária (up to 15 MB) / € 0.99	IT diário (up to 15 MB) / € 1.04	Internet diária (up to 10 MB) / € 0.95	Internet diária (up to 10 MB) / € 1.01	Internet diária (up to 15 MB) / € 1.05

Table 174 – Specific mobile phone Internet offers – 2011

Unit: included traffic / price

Source: Operator websites

The following graph shows the percentage of users of the mobile Internet service in the EU, as additional subscription. Portugal was below the EU27 average, in July 2011.



Graphic 156 – Proportion of Internet subscriptions on mobile phone in EU27 - 2011

Unit: % of mobile phone users and who subscribe to an additional service for Internet access

Source: E-Communications Household Survey, Special Eurobarometer 362 / Wave EB75.1 - TNS Opinion & Social, Fieldwork: February-March 2011; Publication: July 2011.

Mobile TV

Optimus currently has 27 Mobile TV channels, Vodafone 29 and TMN 40. The tariff offers allow various options, as shown in the following table.

Table 175 – Offers of the Mobile TV service

Optimus	TMN	Vodafone
27 channels	40 channels	29 channels
Pack month : 7.93 euros / month - includes all channels (except premium channels).	Meo total : 8.00 euros/month (unlimited access to all channels except premium channels).	Monthly subscription : 8.11 euros / month (unlimited access to all channels except for adults channels).
Pack week : 2.10 euros / week - includes all channels (except premium channels).	Meo semana total : 2.14 euros / week (unlimited access to all channels except premium channels).	Weekly subscription : 1.99 euros / week (unlimited access to all channels except adult channels).
Pack dia : 1.04 euros/day - includes all channels (except premium channels).	Meo total 24h : 0.99 euros / 24h (unlimited access to all channels except premium channels)	Acesso 24 horas: 1.49 euros / 24h (with unlimited access to all channels except adult channels).
Premium channels: 3.06 euros/day	Premium channels: 3.76 euros/day	Adult channels: 2.99 euros / day.
	Meo séries e família : 4.72 euros / month (unlimited access for one month to entertainment, music and children's channels).	Subscrição Y : 2.99 euros / month (access to MTV Music, MTV Series, AXN Black, Fuel TV, N.Geographic and Fashion TV).
	Meo informação e desporto : 4.72 euros / month (one month unlimited access to national, news and sport channels).	Subscrição desporto : 2.99 euros / month (access to V-Futebol channels, Eurosport, Fuel TV and RTP - Liga Campeões).
	Meo total Internet: 13.10 euros / month	
	(Monthly mobile phone internet access and Meo Total).	

Source: Operator websites

7.2.5. Pricing of the service

Pricing of the service in Portugal is presented below compared to EU countries of the OECD with the evolution in prices for this service between 2002 and 2011.

International comparison of prices of mobile telephone service (MTS)¹⁴⁹

According to available information, pricing in Portugal in 2011 was below the average for three consumption profiles in the case of pre-paid plans. With regard to post-paid plans, prices in Portugal were higher than the average for all consumer profiles.

Profile Bundle	Low consumption	Medium consumption	High consumption
Pre-paid	-1.6%	-24.7%	-39.9%
Post-paid	9.0%	9.1%	38.3%

Table 176 – Comparisons of international prices (November 2011) – deviations from the average¹⁴⁹

Unit: %

Source: Teligen, OECD, ICP-ANACOM

Note: without VAT and without PPP.

Evolution of prices in Portugal and comparison with the European Union (EU) (2002/2010)

The graphs below show the main trends in the evolution of prices of the service in Portugal since 2002.

In the case of the usage profiles of medium and low consumption, pre-paid plan billing is always below average. Post-paid tariffs, which had been below average since 2004, rose above the average in 2008 and continued to diverge from the average in 2012.

¹⁴⁹ Methodological note:

The results of the baskets were compiled from the OECD/Teligen database of November 2010 and are presented in euros, without VAT and without PPP (purchasing power parity). They are selected from OECD countries which belong to the EU. Given that, by default, the OECD/Teligen always gives two results by country (for the incumbent and the second most representative operator), the operator selected for each country was the operator which had the plan with the lowest tariff in terms of annual bill for each basket and usage profile.

The deviations are presented in relation to the average of the selected countries, excluding Portugal. The presented values correspond to the baskets defined in 2006.



Graphic 157 – Evolution of prices – low consumption basket

Unit: euros per year

Source: Teligen, OECD, ICP-ANACOM

Note: In order to highlight the variations the x-axis crosses with the y-axis at 90.





Unit: euros per year

Source: Teligen, OECD, ICP-ANACOM

Note: In order to highlight the variations the x-axis crosses with the y-axis at 120.

In the case of the high consumption usage profile, the price of pre-paid plans is significantly below the average. However, the price of post-paid plans is above average, though closer to the average than a year earlier.



Graphic 159 – Evolution in prices – high consumption basket

Unit: euros per year

Source: Teligen, OECD, ICP-ANACOM

Note: In order to highlight the variations the x-axis crosses with the y-axis at 180.

7.2.6. The quality of service of the mobile networks

ICP-ANACOM has conducted studies to evaluate the quality of mobile networks in Portugal.

In 2010, ICP-ANACOM conducted an evaluation of the quality of mobile voice services, video telephony and GSM and WCDMA network coverage as provided by the operators Optimus, TMN and Vodafone in major urban areas and along the main roads of Mainland Portugal. Field measurements were taken between 30 September and 26 November 2010¹⁵⁰.

¹⁵⁰ See Published on ICP-ANACOM's website at www.anacom. Follow <u>Home</u> > <u>Publications</u>> Quality Reports.

The evaluation was based on the analysis of technical parameters that reflect perception of quality from a user's point of view. Specifically, six indicators were considered: network availability; service accessibility; time taken to connect call; call termination rate; call audio quality; and video quality of the video telephony call.

The assessment carried out by ICP-ANACOM shows that the GSM mobile communications system has good levels of radio coverage and provides a good level of voice service performance, both in urban areas and along main roads,

The performance of the video telephony service varies depending on the type of location analyzed. In urban centres, performance levels were similar to those recorded for the voice service; along main roads, performance of this service remains far below levels in urban areas, as a direct result of zones with poor or non-existent WCDMA coverage.

7.3. Profile of user and usage of the land mobile service (MTS)

The following sections characterize the MTS user and use of the service.

7.3.1. The characterization of the MTS user

According to information compiled through Marktest's *Barómetro de Telecomunicações* (Telecommunications Barometer) – age and level of education are the variables which most differentiate MTS users from non-users.

According to the chi-square test, an association of moderate intensity can be observed between the "age group" and "MTS penetration" variables (Cramer V coefficient of 0.401¹⁵¹).

¹⁵¹ Where the measurement scale ranges from 0 - "absence of association" and 1 - "full association".

Respondent's age group	4Q2008	4Q2009	4Q2010	4Q2011
10-14	89.5	91.0	96.2 1	90.3 🗸
15-24	99.1	99.2	99.3	98.6
25-34	99.1	99.5	99.7	99.5
35-44	98.1	97.7	97.9	99.1
45-54	93.9	94.7	97.7 ↑	97.3
55-64	87.0	88.0	89.7	91.2
65 or over	58.2	67.5 ↑	71.8 1	69.9
Total	88.7	90.7 ↑	92.5 ↑	92.0

Table 177- Penetration of the MTS by age group

Unit: %

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q2008 to 4Q2011

Base: All individuals with voice electronic communications services according to their age group

Note 1: Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate. **Note 2:** The shaded proportions indicate those that are significantly different (horizontal) in accordance with the test of two samples for proportions. Higher proportions are highlighted in light shading and lower proportions in dark shading. **Note 3:** The upward pointing arrow signals a statistically significant increase between the instance t-1 and t and a downward arrow signals a statistically significant decrease between these two instances.

There is also an association between the social class" and "MTS penetration" variables, albeit with a low level of intensity (Cramer V coefficient of 0.242). In fact, there remains a positive correlation between social class and MTS penetration, as has been seen since this type of information was first compiled. Lower penetration is reported among lower social classes, in line with the results of previous studies.

Social class	4Q2008	4Q2009	4Q2010	4Q2011
A - Upper	98.5	97.2	99.4	98.4
B - Upper middle	96.8	95.7	97.1	97.3
C1 - Middle	96.3	95.5	97.3 ↑	96.3
C2 - Lower Middle	92.4	94.2	95.9 1	94.7
D – Lower	71.5	78.7↑	80.8	81.3
Total	88.7	90.7 1	92.5 ↑	92.0

Table 178 – MTS penetration by social class

Unit: %

Source: MARKTEST - Barómetro de Telecomunicações (Telecommunications Barometer) study, annual data 2008, 2009 and 2010 Base: All individuals aged 10 years or over with voice electronic communications services according to social class Note 1: The social class variable is not included in the stratification groups of the dwellings sample (gender, age group and Marktest district and region), whereby this information is purely indicative of existing behaviour.
Note 2: Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate.
Note 3: The shaded proportions indicate those that are significantly different (horizontal) according to the test of two samples for proportions. Higher proportions are highlighted in light shading and lower proportions in dark shading.
Note 4: The upward pointing arrow signals a statistically significant increase between the instance t-1 and t and a downward arrow signals a statistically significant decrease between these two instances.
Note 5: Social class A is the highest social class and D is the lowest.

According to the chi-square test, existence of the MTS is statistically associated with the individual's level of education (Cramer V coefficient of 0.406 in 4th quarter 2011). In fact, the level of education and age of the respondent are the variables most associated with possession of MTS.

MTS penetration also has positive correlation in terms of the level of education, and is lower among individuals with lower levels of education.

Level of education	4Q2008	4Q2009	4Q2010	4Q2011
Less than 1st cycle basic education	46.3	51.7	50.1	55.5
1st cycle basic education	75.7	79.5 🕇	84.5↑	82.8
2nd cycle basic education	92.8	95.0	96.7	95.9
3rd cycle basic education	97.1	97.3	98.4	97.2
Secondary education	98.3	97.2	98.1	98.5
Higher education	98.3	97.8	99.0	99.1
Total	88.7	90.7 ↑	92.5 ↑	92.0

Table 179 – MTS penetration by education level

Unit: %

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q2008 to 4Q2011

Base: All individuals aged 10 years or over with voice electronic communications according to the level of education
Note 1: "Education level" variable is not included in the stratification variables of the sample of individuals (gender, age group and Marktest district and region), whereby this information is purely indicative of existing behaviour.
Note 2: Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate.
Note 3: The shaded proportions indicate those that are significantly different (horizontal) according to the test of two samples for proportions. Higher proportions are highlighted in light shading and lower proportions in dark shading.
Note 4: The upward pointing arrow signals a statistically significant increase between the instance t-1 and t and a downward arrow signals a statistically significant decrease between these two instances.

Employment status is also a variable statistically correlated with MTS subscription (Cramer V coefficient of 0.286 in 4th quarter 2011). There is lower penetration of the service among individuals who are retired, pension or reserved, which confirms the above findings in relation to age group.

Level of education	4Q2008	4Q2009	4Q2010	4Q2011
Upper management	99.4	98.2	100.0	99.3
Middle management	98.7	98.2	98.9	98.5
Specialist staff	97.8	97.5	99.4	99.5
Small business owners	95.7	90.3	97.9 1	95.4
Administrative staff / services and retail staff	98.8	98.4	99.2	100.0
Skilled / specialist staff	97.2	97.7	98.6	98.9
Unskilled staff / non-specialist	97.1	95.9	96.1	96.4
Retired / Pensioners / Unemployed	71.9	77.9 🕇	81.4 1	81.4
Students	95.2	96.2	98.1 1	95.2↓
Stay-at-home	80.4	82.9	79.6	83.7
Total	88.7	90.7 ↑	92.5 ↑	92.0

Table 180 – Penetration of the MTS by individual's employment status

Unit: %

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q2008 to 4Q2011

Base: All individuals aged 10 years or over with voice electronic communications according to employment status
Note 1: "Employment status" variable is not included in the stratification variables of the sample of individuals (gender, age group and Marktest district and region), whereby this information is purely indicative of existing behaviour.
Note 2: Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate.
Note 3: The shaded proportions indicate those that are significantly different (horizontal) in accordance with the test of two samples for proportions. Higher proportions are highlighted in light shading and lower proportions in dark shading.
Note 4: The upward pointing arrow signals a statistically significant increase between the instance t-1 and t and a downward arrow signals a statistically significant decrease between these two instances.

In terms of MTS penetration by Marktest region, it appears that the existence of MTS is statistically associated with the Marktest region where the individual resides, although with a Cramer V coefficient that is low (0.124).

Table 181 – MTS Penetration by Marktest region

Marktest region	4Q2008	4Q2009	4Q2010	4Q2011
Greater Lisbon	92.6	94.8	96.81	95.3
Greater Porto	94.2	94.7	96.6	93.1 🗸
North Coast	88.8	89.2	92.4 🕇	92.2
Centre Coast	90.7	92.2	92.9	93.9
North Interior	83.6	87.0↑	86.5	88.6
South	87.0	89.1	92.0	90.3
Madeira	86.4	90.5	93.9	93.4
Azores	72.6	83.2	93.9 1	84.6↓
Total	88.7	90.7↑	92.5 ↑	92.0

Unit: %

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q2008 to 4Q2011

Base: All individuals aged 10 or over with voice electronic communications according to Marktest region.
 Note 1: Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate.
 Note 2: The shaded proportions indicate those that are significantly different (horizontal) in accordance with the test of two samples for proportions. Higher proportions are highlighted in light shading and lower proportions in dark shading.
 Note 3: The upward pointing arrow signals a statistically significant increase between the instance t-1 and t and a downward arrow signals a statistically significant decrease between these.

7.3.2. Barriers to service take-up

The main reasons given by consumers for not subscribing to the service is the fact that they do not need it or do not have interest in it. Lack of interest in subscribing to the service reported a statistically significant increase of 58.4 percent in 4th quarter 2011 over the previous year.

Table 182 – Reasons for not using the mobile service

	1Q2010	1Q2011
Do not need it	41.8	42.7
Do not know how to use it	17.8 *	16.1 *
Financial reasons	10.8 *	8.7 *
Do not like it/not interested	19.0 *	30.1 🕇
Other reasons	12.8 *	7.3↓
[Don't know/No response]	4.8	4.1

Unit: %

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 1Q2012 to 1Q2011

Base: Individuals aged 10 or over without MTS access.

Note 1: Multiple choice question.

Note 2: Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate.

Note 3: The upward pointing arrow signals a statistically significant increase between the instance t-1 and t and a downward arrow signals a statistically significant decrease between these two instances.

The price of the service and difficulty in operating the equipment are other barriers indicated by consumers.

The vast majority of those who do not have mobile phone (89 percent) do not intend to take up the service in the near future.

Table 183 – Intention to buy mobile telephone

	4Q2007	4Q2008	4Q2009	4Q2010	4Q2011
Will buy or maybe buy in the next three months	10.9 *	7.7 *	9.8 *	7.1 *	8.8 *
Will definitely not be buy mobile telephone in next three months	87.4	87.1	86.1	90.8 ↑	88.8
Don't know/No response	1.7	5.2	4.1	2.1	2.4
Total	100	100	100	100	100

Unit: %

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q2007 to 4Q2011

Base: Individuals aged 10 or over without MTS access

Note 1: Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate. **Note 2:** The upward pointing arrow signals a statistically significant increase between the instance t-1 and t and a downward arrow signals a statistically significant decrease between these two instances.

7.3.3. Characterization and usage of service

This section looks at the level and form of MTS use, taking into account the evolution in the number of subscribers, tariff plans, traffic and users of the various services and in revenues.

Subscribers

At the end of 2011, there were around 16.8 million MTS subscribers¹⁵², which represents an increase of 1.9 percent in total subscribers over the previous year. The growth is below the average of the last five years.

Table 184 – Number of subscribers

	2010	2011	Var. 2010/2011	Var. 2007/2011 annual average	Var. accumulate d 2007/2011
MTS subscribers / active mobile stations	16,474	16,794	1.9 %	5.7 %	24.6 %
Active mobile stations with post-paid. pre-paid and combined/hybrid plans and actual use	13,489	13,468	-0.2 %		

Units: thousands of subscribers, %

Source: ICP-ANACOM

The number of users who actually used the service – 13.5 million – is lower than in 2010. Excluding the number of cards/modem used exclusively to access the Internet with mobile

¹⁵² The definition of subscriber has been approved by determination of the Board of Administration (CA) of ICP-ANACOM of 07.02.2002, and is associated with the number of cards that are covered by an established contractual relationship with a national operators of mobile telephone services and which have been granted the right to initiate and receive traffic across the respective networks.

Additionally, in 2009, following <u>determination of 08.07.2009</u>, <u>as amended by determinations of 17.06.2010</u> and <u>19.08.2010</u>, approval was given to the statistical indicators of mobile services in which Active mobile station is defined as a mobile station which is eligible to make use of one of the services available on mobile networks (i.e., it is eligible to make or receive voice calls or messages or to access a data transmission service), without necessarily being used (i.e. it is "live" in the network registration system).

broadband, the number of active mobile stations/user devices with actual use as at the end of 2011, totalled about 12.3 million, 0.6 percent more than in at the end of 2010.





Units: thousands of subscribers, %

Source: ICP-ANACOM

It should be noted, however, that the rate of growth in the number of subscribers has been slowing down. (This evolution has been driven by trends in offers involving cards/modem used exclusively to access the Internet with mobile broadband, as is detailed in the following section).





Unit: thousands of subscribers

Source: ICP-ANACOM

According to available information, the rate of growth in the number of subscribers in 2011 will be below the EU average. At EU level, and according to the information available, growth in the service in 2011 was 3.9 percent¹⁵³.



Graphic 162 - Rate of growth in subscribers in EU27 countries in 2011

Unit: %

Source: EC, Digital Agenda Scoreboard 2012 (Provisional data)

Users of 3rd generation services

In 4th quarter 2011, there were 11.2 million users eligible to use broadband services, an increase of 6.4 percent over 2010.

The number of active users actually making use of 3G services (i.e. video telephony, broadband data transmission, mobile TV, etc.), totalled approximately 4.2 million, 1.8 percent more than in the previous year.

The growth seen in the number of active users of MBB service is due largely to the growing number of users of the Internet access service using mobile broadband (an

¹⁵³ Figures for October 2011.

increase o 14 percent compared to 2010), including users who use mobile phones to access this service, while users of cards/ modem decreased by 11.3 percent.

	2010	2011	Var. 2010/2011	Var. 2007/2011 annual average	Var. accumulated 2007/2011
Total number of users eligible to use broadband services	10,496	11,171	6.4%	38.1%	>100%
Of which users of 3G services, upgrades and standards in the period being reported	4,078	4,154	1.8%	47.9%	>100%
of which are users of broadband Internet access services	2,566	2,924	14.0%	45.1%	>100%
of which are connections to the Internet using cards/modem	1,279	1,134	-11.3%	-	-

Table 185 – Number of users of 3G and broadband services

Units: thousands of users, %

Source: ICP-ANACOM

The number of users of MBB service grew, initially at high rates, driven by the roll out and availability of MBB Internet offers, while growth was further driven by the implementation of the Government's *e-escola*, *e-professores* and *e-oportunidades* initiatives. These initiatives enabled the acquisition of laptops and MBB Internet access at reduced prices.

However, growth in the number of the service's users has been slowing down and was severely impacted by the suspension of these government initiatives in 1st quarter 2011. It is this fact which explains the fall of 11.3 percent in the number of users of cards/modem mentioned above.

At the end of 2011, three out of every 10 mobile stations with actual use made use of typical MBB services, especially the IAS.



Graphic 163 – Evolution in the penetration of 3G services and broadband in Portugal

Unit: %

Source: ICP-ANACOM

Tariff plans

About 71.8 percent of MTS subscribers used pre-paid plans. The weight of the pre-paid plans in terms of mobile stations with actual use is 74.7 percent.

Graphic 164 – Distribution of subscribers by type of tariff plan





Source: ICP-ANACOM

According to Marktest's *Barómetro de Telecomunicações – Redes Móveis* (Telecommunications Barometer – Mobile Networks), 55 percent of pre-pay plans entail compulsory account top ups. Among post-paid plans, subscription plans dominate (it is noted that users are not always clear on their type of tariff).

	4Q2007	4Q2008	4Q2008 4Q2009		4Q2011
Pre-paid	82.2	80.8	82.4	85.3 ↑	84.3
Rechargeable card with compulsory account credits	39.5	38.6	39.5	43.8 1	46.6 1
Rechargeable card without compulsory account credits	42.7	42.2	42.9	41.5	37.7↓
Post-paid	15.5	15.9	15.1	12.4 🗸	13.2
Monthly subscription	13.9	14.3	13.3	11.3 🗸	11.8
Package of minutes	1.6 *	1.6 *	1.8 *	1.1 *↓	1.4 *
Don't know/No response	2.3	3.2	2.5	2.3	2.6
Total	100	100	100	100	100

Table 186 – Type of tariff

Unit: %

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q2007 to 4Q2011

Base: Individuals aged 10 or over with MTS access

Note 1: Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate.

Note 2: The upward pointing arrow signals a statistically significant increase between the instance t-1 and t and a downward arrow signals a statistically significant decrease between these two instances.

The MTS consumer profile was identified according to type of tariff plan (post-paid plans, pre-paid plans with compulsory account top ups and pre-paid plans without compulsory account top ups), based on the estimation of a discrete choice econometric model – logit multinomial¹⁵⁴ For this purpose, use was made of microdata from Marktest's *Barómetro de*

¹⁵⁴ This type of model makes it possible to identify, in an integrated manner, the factors that most strongly distinguish MTS users with pre-paid plans, post-paid plans with compulsory account top ups and post-paid plans without compulsory account top ups

The dependent variable refers to a polytomous variable that can be 1 (where the individual has a post-paid plan); 2 (where the individual has a pre-paid plan with compulsory account top ups); and 3 (where the individual has a pre-paid plan without compulsory account top ups).

The postpaid tariff was chosen for the base result in the interpretation of the estimated parameters.

The following explanatory variables were considered, a priori:

Telecomunicações (Telecommunications Barometer), with reference to 2nd quarter 2011¹⁵⁵.

The analysis made shows that¹⁵⁶:

 consumers with pre-paid tariff have a different age group distribution to users of post-paid tariffs. The former tend to be concentrated among the extreme age groups (younger and older). Pre-pay consumers with compulsory account top-ups are mainly found among younger age groups, while pre-pay consumers without compulsory account top-ups mostly belong to the very youngest or oldest age group;

Socio-demographic and economic characteristics: Marktest region, social class, gender, age, education level, employment status, family size, presence of children or elderly in the home.

Type of consumption: monthly mobile phone expenditure; Average number of SMS sent weekly; average number of MMS sent weekly; use of downloads, Internet use; use of other advanced services; time since concluded contract with the provider.

Satisfaction with provider: overall satisfaction, satisfaction with the following components: customer service, number of stores available, service in stores, pricing, diversity of products and services, coverage area / network quality.

The most appropriate model for this type of information refers to the multinomial logit model, given that the dependent variable is a nominal discrete variable. A reference category is selected (in this case individuals with post-paid tariffs) and the probability of an individual belonging to the remaining dependent variable groups (2, 3, k) is compared with the probability of an individual belonging to this reference category (1).

The probability of yi belonging to category 1 is determined given the constraint that the sum of the probabilities of yi belonging to the various categories is equal to the unit, where $\Pr(y_i = k) = \frac{\exp(X_i,\beta_k)}{1+\sum_{j=i}^{J}\exp(X_i,\beta_j)}$, with Xi the vector of the i-th observation for all explanatory variables.

The estimation of the model's parameters uses the method of maximum likelihood. Only discrete variables were considered which are shown, in conjunction or individually, as determinant to the explanation of the model; whereas it is noted, that according to the multinomial logit model with robust variance (robust Huber/White estimator) all parameter signals are in line with theoretical expectations.

¹⁵⁵ The unit of observation used is the individual aged 10 years or over, making a total of 5,303 sample cases responding to the relevant questions.

¹⁵⁶ This analysis is provided by ICP-ANACOM based on Marktest microdata - *Barómetro de Telecomunicações* (Telecommunications Barometer) Study, 2nd half 2011

- customers with higher levels of education are more likely to possess a post-paid tariffs. It is mainly customers of pre-paid tariff without account top ups that have lower levels of education;
- in terms of consumption three significant aspects can be highlighted:
 - monthly mobile phone expenditure tends to be significantly lower where customers have a pre-paid tariff;
 - Internet use on mobile phones tends to be more significant among customers with post-paid tariffs compared to those with pre-paid (especially when compared with those without compulsory account top ups); and
 - the level of satisfaction among consumers with pre-paid tariffs as regards the service provided in MTS provider retail outlets is higher than among consumers with post-paid tariffs.

Portugal is among the countries where the weight of pre-paid plans is most significant, immediately following Italy and Malta. Denmark is the country with the lowest value. Portugal was a pioneer in the introduction of the pre-paid system in MTS. TMN introduced the MIMO product in 1995. These products enable greater control over bills and do not require the payment of subscriptions charges.

In 2010, the average proportion of pre-paid cards in the EU (among countries with available data) was 50 percent.



Graphic 165 - Weight of pre-paid cards out of total subscribers - Portugal vs. EU

Unit: %

Source: EC, Digital Agenda Scoreboard 2012 (Provisional data)

It should be noted, however, that since 2005, the proportion of pre-paid tariffs has declined in some countries, notably those where the proportion of pre-paid plans is higher. This evolution results from the appearance of new post-paid offers (i.e. packages with traffic included in the monthly fee), and from the development of new 3G services which are provided, in many cases, through post-paid offers.

Portugal has followed this trend. The weight of post-paid/hybrid plans has increased by about 5 percentage points since 2007, growing by about 50.8 percent over this period.

Table 187 – N	lumber of	subscribers	per	tariff	plan

	2010	2011	Var. 2010/2011	Var. annual average 2007/2011	Var. accumulate d 2007/2011
Pre-paid	11,880	12,065	1.6%	3.9%	16.7%
Pre-paid/hybrid	4,594	4,728	2.9%	10.8%	50.8%

Units: thousands of subscribers, %

Source: ICP-ANACOM



Graphic 166 – Evolution in subscribers by type of tariff plan

Source: ICP-ANACOM

As referred to above, the increasing proportion of post-paid subscribers is significantly associated with take-up of new MBB Internet access services which more often entail post-paid plans.

Voice traffic: characterization and usage

As shown in the graphs below, MTS traffic has been in a growing trend. The growth trend in traffic is associated with an increase in the number of subscribers, the widespread takeup of the service and also the decline in FTS use.

Unit: thousands of subscribers



Graphic 167 – Quarterly evolution in outgoing MTS traffic – calls

Unit: millions of calls

Source: ICP-ANACOM

Note: In order to highlight the trend and seasonal variations the x-axis crosses with the y-axis at 1300.



Graphic 168 – Quarterly evolution in outgoing MTS traffic – minutes

Unit: millions of minutes

Source: ICP-ANACOM

Note: In order to highlight the trend and seasonal variations the x-axis crosses with the y-axis at 2100.

Seasonal increases are reported in the third and fourth quarters of each year, associated with the summer and Christmas holiday periods.





Monthly traffic per subscriber reached average values of 107 minutes and approximately 44 calls per subscriber.

Source: ICP-ANACOM



Graphic 170 – Evolution in monthly traffic per subscriber

Units: minutes, calls

Source: ICP-ANACOM

Note: In order to highlight the trend and seasonal variations the x-axis crosses with the y-axis at 75 in the case of minutes, and at 40 in the case of calls.

However, these averages do not accurately reflect the true behaviour of consumers of mobile voice calls, since the denominator of this indicator is overvalued on account of the number of subscriber identity module (SIM) cards installed in equipment such as POS devices, alarms, control and monitoring systems, data cards, etc..., whose relative weight has been increasing. For example, if we consider the average number of mobile stations with actual use excluding cards/modem, average traffic rises to 146 minutes and 60 calls per month.

Trends in traffic reported in minutes and in calls and, in particular, the different growth trends between minutes and calls can be explained by:

- commercial and tariff factors that encourage longer calls, including offers with included traffic volume and/or free communications between subscribers and temporary campaigns in which the user can make unlimited calls for a reduced price;
- the fact that there are cards associated with data transmission offers which do not generate voice calls may also influence the evolution presented above.

The number of minutes per subscriber peaks during the third quarter for the reasons mentioned above.



Graphic 171 – Coefficients of seasonality of monthly traffic per subscriber

Source: ICP-ANACOM

Voice traffic: evolution in 2011

In 2011, voice traffic reported in terms of minutes saw a growth rate (7 percent) below the average of the previous five years (12.2 percent) – and is the lowest rate of growth reported in the period. The observed value lies outside the forecast range resulting from historical trend. This may be associated with a contraction among consumers as a result of cyclical factors and some substitution by alternative means of communication.



Graphic 172 - Volume of minutes of voice traffic and forecast range

Unit: millions of minutes

Source: ICP-ANACOM

Note 1: Forecast range with a significance level of 95 percent.

Note 2: A regression model was used with quadratic trend (Y = 236139 + 2216t2) considering the following seasonality indices (multiplicative model): Q1 = 0.972, Q2 = 0.990, Q3 = 1.031, Q4 = 1.010. The adjusted R² of the model of the trend component is 0.988.

Note 3: In order to highlight the trend and seasonal variations the x-axis crosses with the y-axis at 2000.

Between 2006 and 2010, there was an increase of about 58.3 percent in outgoing traffic and an increase of about 55.9 percent in incoming traffic, all higher than the rate of growth reported in the number of subscribers. This trend is associated with an increased number of subscribers, the widespread take-up of the service, the existence of offers with free or discounted calls and also with the decline in FTS use.

Table 188 – Voice traffic in minutes

	100) 2010	101) 2011	102) Var. 103) 2010/2011	104) Var. annual average 2007/2011	Var. accumulated 2007/2011
Outgoing traffic	20,196	21,603	7,0%	12,2%	58,3%
To same provider (on-net)	15,573	17,126	10.0%	16.3%	82.9%
To other national MTS providers (off-net)	2,843	2,711	-4.7%	0.01%	0.04%
To national FTS providers	670	616	-8.1%	-9.8%	-33.9%
To short numbers and non-geographic numbers	462	454	-1.7%	na	na
To providers of international networks	647	697	7.6%	2.0%	8.4%
Incoming traffic	20,332	21,688	6.7%	11.7%	55.9%
From same provider (on-net)	15,573	17,126	10.0%	16.3%	82.9%
For other national MTS providers (off-net)	2,900	2,790	-3.8%	0.8%	3.1%
From national FTS providers	876	875	-0.1%	-7.1%	-25.7%
From providers of international networks	643	557	-13.4%	-4.5%	-16.8%
Number of voice minutes terminated on short numbers and non-geographic numbers	330	339	2.8%	n.a.	n.a.

Unit: millions of minutes

Source: ICP-ANACOM

In 2011, MTS subscribers made more than 8.8 billion calls, 1.4 percent more than in the previous year. In line with traffic as reported in minutes, in 2011, the number of calls grew at the slowest rate of recent years. The value observed in 4th quarter 2011 was lower than the lower limit of the forecast range resulting from the historical trend and the estimated seasonal effect.





Unit: millions of calls

Source: ICP-ANACOM

Note 1: * Forecast range with a significance level of 95 percent.

Note 2: Stationary series modelling was used - primary consecutive differences after log transformation - The seasonal dummies referring to 1st and 4th quarter have been shown as significant : $\Delta\lambda\nu\Psi = 0.041 - 0.072T1 - 0.041T4$ with adjusted R² of 0.790.

Note 3: In order to highlight the trend and seasonal variations the x-axis crosses with the y-axis at 1200.

Over the same period, MTS subscribers received more than 8.8 billion calls, which represents an increase of 1 percent over the previous year.

Table 189 – Voice traffic in calls

	105) 2010	106) 2011	107) Var. 108) 2010/2011	109) Var. annual average 2007/2011	110) Var. accumulat ed 2007/2011
Outgoing traffic	8,748	8,867	1,4%	6,0%	26,0%
To same provider (on-net)	6,072	6,317	4.0%	7.7%	34.6%
To other national MTS providers					-0.9%
(off-net)	1,607	1, 528	-4.9%	-0.2%	
To national FTS providers	397	354	-10.8%	-10.5%	-35.8%
To short numbers and non-geographic numbers	448	438	-2.1%		
To providers of international networks	224	229	2.1%	-2.0%	-7.8%
Incoming traffic	8,693	8,777	1.0%	5.6%	24.2%
From same provider (on-net)	6,072	6,317	4.0%	7.7%	34.6%
From other national MTS providers (off-net)	1,634	1,545	-5.5%	0.02%	0.1%
From national FTS providers	449	426	-5.2%	-8.6%	-30.2%
From providers of international networks	210	167	-20.4%	-6.4%	-23.3%
Number of voice minutes terminated on short numbers and non-geographic numbers	328	323	-1.8%		

Unit: millions of calls

Source: ICP-ANACOM

Voice traffic: developments in 2011 by type of call

It is reported that the destination network of about seven out of ten calls is the same as the originating network. The networks of other mobile operators make up the destination of about 17 percent of originated traffic, followed by FTS. In terms of incoming traffic, the relative weight of the different types of calls does not change significantly.

On the other hand, a gradual reduction can be seen in the weight of calls which are originated and terminated on fixed networks – in the last ten years the weight of this type of traffic declined by half. This decline is associated with the decline in the use of the FTS for voice communications and also stems from the mass take-up of mobile service, pricing and tariff issues.


Graphic 174 – Distribution of voice traffic (in calls) by call type

Unit: %

Source: ICP-ANACOM

Note: prior to 2010 no distinction was made between traffic to short and non-geographic numbers.

Analyzing the evolution of calls by call type, it can be seen that over the last five years, intra-network traffic, owing to its weight, is determinant in the overall evolution in total traffic. The remaining traffic categories (in calls) reported negative growth.

On the other hand, the evolution in traffic patterns also shows an overall increase in the weight of on-net traffic (in minutes) by 2.2 p.p. (and by 10.7 p.p. in the last five years), to more than 79 percent, to determinant of off-net calls.

Voice traffic: average duration of calls

The average duration of outgoing calls reached 146 seconds in 2011. The average duration of calls on the mobile network is less than the duration of calls on the fixed network.

Table 190 – Average duration of calls

	2007	2008	2009	2010	2011
	116	122	130	139	146
Own network - own network	120	127	138	154	163
Own network - national FTS	101	109	109	101	104
Own network - international networks	155	156	157	174	192
Own network - other national MTS	105	100	107	174	103
Total incoming traffic	105	106	107	106	107
3	118	123	132	143	152
Own network - own network	120	127	138	154	163
National FTS - own network	116	118	119	117	123
International networks - own network	185	183	184	184	200
Other national MTS - own network	105	107	107	106	108

Unit: seconds

Source: ICP-ANACOM

The increase in the duration of national calls in 2011 may be related to take-up of specific offers that allow unlimited calls between subscribers for a fixed amount per month ("Moche TMN", "TAG Optimus" and "Yorn Extravaganza" and "Vita 91 Extreme" from Vodafone) as well as take up of new tariffs which include free periods of communications (such as "e" from TMN or Vita 0 from Vodafone).

There was also a significant increase in the average duration of international calls.

SMS

Up until 2nd quarter 2005, each user was sending an average of 20 SMS per month. This value changed significantly after that date, growing significantly in subsequent periods. In 2007, the average number of SMS per month per subscriber exceeded one hundred SMS per subscriber and peaked at 141 SMS per month per subscriber in 2nd quarter 2009. In 4th quarter 2011, the number of monthly SMS per subscriber again peaked at 141 SMS.



Graphic 175 – Quarterly evolution in the number of SMS per mobile station and per SMS user, per month

Source: ICP-ANACOM

However, if only actual users of the text message service are considered, representing about 66 percent of all mobile stations with actual use (excluding data cards), the average number of messages per user reached 293 messages per month.

This trend is associated with new tariffs, promotions launched by operators and growth in domotic services supported by SMS (System and Motor Remote Control and Remote Control of Vending Machines using a mobile phone).

Average SMS traffic per subscriber is also subject to seasonal trends, especially in 2nd quarter.

Unit: messages by mobile station and user



Graphic 176 – Seasonal coefficient of SMS per subscriber

Source: ICP-ANACOM

In 2010, overall growth in the number of text messages was reported at 2.3 percent, 0.9 percentage point less than in 2010. The slowdown is consistent with the recent historical trend. However, it appears that the last quarter of 2011 counteracts this tendency, with a significant increase reported in the volume of messages sent over the value expected for the quarter.

Table 191 – SMS originated on same network

	111) 2010	112) 2011	113) Var. 114) 2010/2011	115) Var. annual average 2007/2011	116) Var. accumulate d 2007/2011
Number of SMS messages	26,284	26,900	2,3%	9.7%	45.0%

Units: millions of messages, %

Source: ICP-ANACOM



Graphic 177 – Text message traffic and forecast range

Unit: millions of text messages

Source: ICP-ANACOM

Note 1: * Forecast range with a significance level of 95 percent.

Note 2: A linear regression model was used with logistic trend (Y = -3 151 088 + 10 000 000 / (1 + exp (-0,197 559*(t - 2,974 834)))) considering the following seasonality indices (multiplicative model): Q1= -65 532; Q2= 55 685; Q3= 126 354; Q4= -127 429. The adjusted R^2 model with the trend component is 0.989.

Premium messages¹⁵⁷ represent 0.3 percent of the total SMS.

¹⁵⁷ Added-value text messages value-added services based on message sending shall be deemed to mean information society services provided through a message supported on electronic communications services which imply an immediate or delayed payment from the consumer of a value which is added to the price of the electronic communications service, in return for the provision of the transmitted contents, namely for the information service, entertaining service, or other. (see DL no. 63/2009 of 10 March).

Roaming traffic: voice and SMS

At the end of 4th quarter 2011, users of the roaming out service¹⁵⁸ representing 7.1 percent of all mobile stations in actual use (excluding data cards).

Table 192 – International roaming users

	2010	2011	Var. 2010/2011
International roaming users (out)	851	872	2.4%

Unit: millions of users

Source: ICP-ANACOM

Roaming traffic is reported with very marked seasonality, related to the summer holiday period; it is also affected by international events held in Portugal (in the following graph, the impact of Euro 2004 on roaming in traffic is evident¹⁵⁹ in 2nd quarter 2004).



Graphic 178 – Quarterly evolution in roaming in traffic

Unit: millions of minutes

Source: ICP-ANACOM

¹⁵⁸ Subscribers of national operators which use the networks of foreign operators when they are outside Portugal.

¹⁵⁹ Traffic generated by subscribers of foreign operators using the national networks.

Graphic 179 - Seasonal coefficient of roaming in traffic



Unit: minutes

Source: ICP-ANACOM

Graphic 180 – Quarterly evolution in roaming out traffic



Unit: millions of minutes

Source: ICP-ANACOM



Graphic 181 – Seasonal coefficient of roaming out traffic

Source: ICP-ANACOM

The seasonality illustrated above is enhanced by the marketing strategy of operators conducting specific roaming promotional campaigns during school holiday periods – Easter and Carnival.

There is a growing trend towards the use of SMS in roaming out, which could be linked to the pricing of this type of call and the value of terminations in these cases.

Also the promotional campaigns run by operators to promote increased SMS use resulted in a considerable increase in messages received in roaming. Importantly, reception of messages in roaming has no cost for the person roaming while the reception of a voice call entails payment for a portion of the call, reflecting the termination cost charged by the foreign operator where the person roaming is using their phone. This fact, coupled with the aforementioned campaigns, explain the peaks observed in 3rd quarters of the years 2005-2011, coinciding with holiday periods.

It should be noted that data reported in 1Q08 had a pattern that differed from previous years, which could be associated with the Easter holiday period, which in 2008 fell in March



Graphic 182 – Quarterly evolution in roaming out traffic by type of traffic

Unit: millions of calls and messages

Source: ICP-ANACOM



Graphic 183 – Seasonal coefficient of roaming out traffic

Source: ICP-ANACOM

In 2011, roaming in traffic saw a decline compared to 2010, with the exception of text messages, which increased by more than 12.5 percent, for the reasons mentioned above.

The average duration of roaming in calls was 131 seconds, three seconds longer than in the previous year.

	2010	2011	Var. 2010/2011	Var. annual average 2007/2011	Var. accumulate d 2007/2011
Voice calls – roaming in	146	141	-3.6%	0.4%	1.5%
No. of minutes – roaming in	311	307	-1.1%	2.0%	8.4%
Text messages – roaming in	419	472	12.5%	18.2%	95.0%
Average duration of calls (secs.)	128	131	3		

Table 193 – Roaming in traffic

Units: millions, %, seconds

Source: ICP-ANACOM



Graphic 184 – Evolution in the annual volume of roaming in traffic

Unit: million of minutes

Source: ICP-ANACOM

Roaming out traffic reported negative variations, in contrast to the previous year, declining by about 0.3 percent in the case of calls. Meanwhile minutes and messages increased by 5.5 percent and 10 percent, respectively. During 2011, the average duration of roaming out calls was 160 seconds per call, 9 seconds more than in the previous year. On average, calls made in roaming out are longer than calls made on the national networks.

Table 194 – Roaming out traffic

	2010	2011	Var. 2010/2011	Var. annual average 2007/2011	Var. accumulate d 2007/2011
Voice calls – roaming out	109	108	-0.3%	2.2%	9.1%
No. of minutes – roaming out	273	288	5.5%	3.7%	15.6%
Text messages – roaming out	88	97	10.0%	n.a.	n.a.
Average duration of calls (secs.)	151	160	9		

Units: millions, %, seconds

Source: ICP-ANACOM

Graphic 185 - Evolution in the annual volume of roaming out traffic



Unit: million of minutes

Source: ICP-ANACOM

The balance of roaming traffic (roaming in traffic – Roaming out traffic), has always been positive. Roaming in traffic in minutes was, in 2011, about 7 percent higher than Roaming out traffic.

Data services

According to Marktest's *Barómetro de Telecomunicações – Redes Móveis* (Telecommunications Barometer – Mobile Networks), sending multimedia messages (MMS) remains the most widely used 3G data services, despite a significant decline in 2011. Internet access via mobile phone is the second most used service, with a significant increase recorded over the year. Note should also be made of access to e-mail (which has grown by 11.6 percentage points since 2007) and of downloads (used by 21.9 percent of respondents). Video-calls decreased significantly in 2011.

Table 195 – Use of advanced MTS services (with 3G mobile phones)

(services habitually used)	4Q2007	4Q2008	4Q2009	4Q2010	4Q2011
Access to the operator's portal	17.9	13.1↓	11.3	9.8	10.8
Downloads	20.8	13.5 🗸	21.3 1	18.5	21.9 🕇
Access to e-mail	10.5 *	11.9	12.9	17.1 ↑	22.1 ↑
Mobile TV	3.3 *	4.5 *	3.8 *	3.6 *	3.4 *
Internet access	25.8	22.4	25.2	28.4	33.8 ↑
MMS	44.7	46.4	45.2	47.7	43.0↓
Video calls	20.1	22.2	20.6	20.0	14.7 🗸
Messenger	10.8 *	13.9 1	14.7	16.8	13.7 ↓
None of the above	38.7	42.0	39.2	37.7	39.0

Unit: %

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q2007 to 4Q2011

Base: Individuals aged 10 or over who have 3G mobile phone, PDA, Blackberry, Smartphone

Note 1: Multiple choice question.

Note 2: Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate. **Note 3:** The upward pointing arrow signals a statistically significant increase between the instance t-1 and t and a downward arrow signals a statistically significant decrease between these two instances.

Evolution of the main data services is detailed below.

MMS traffic

The number of MMS users remains relatively small. In 2011, and on average, about 15 percent of mobile stations with actual use (excluding data cards) used this service.

Multimedia messaging traffic, known as MMS, saw a significant increase in 2011 (16.2 percent), although below the average of recent years.

Table 196 – MMS originating on same network

	2010	2011	Var. 2010/2011	Var. 2007/2011 annual average	Var. accumulate d 2007/2011
Number of multimedia messages	124	144	16.2%	33.0%	>100%

Units: millions of messages, %

Source: ICP-ANACOM



Graphic 186 – Number of MMS sent

Source: ICP-ANACOM

On average, 7 MMS are sent per user of this service per month.

It should be noted that use of the MMS service requires compatible terminal equipment. The user receiving the message can also view the message on the operator's website.

When compared to SMS volume, MMS volume remains very small.

Unit: millions of messages

Video-telephony

The video telephony service has a level of traffic which remains incipient, and in relation to the previous year, traffic actually fell, in terms of both video-calls and traffic volume.

	2010	2011	Var. 2010/2011	Var. 2007/2011 annual average	Var. accumulated 2007/2011
Number of video calls	5	3	-44.0%	-4.9%	-18.1%
Volume of video-call traffic	20	13	-35.9%	21.9%	>100%

Table 197 – Video-call traffic

Units: millions of calls, millions of minutes, %

Source: ICP-ANACOM

It should be noted that use of this service also requires compatible terminal equipment.

Moreover, according to the results of the evaluation performed by ICP-ANACOM (September-November 2010¹⁵⁰), the performance of the video telephony service varies depending on the type of location analysed. In urban centres, performance levels were similar to those recorded for the voice service; along main roads, performance of this service remains below levels in urban areas, as a direct result of zones with poor or non-existent WCDMA coverage.

The average length of a video-call in 2011 was about four minutes and 24 seconds, longer than voice calls.

Mobile TV

The Mobile TV service was introduced in 2006. In 2011, the Mobile TV service was, on average, reported on 0.3 percent of mobile stations with actual use (excluding data cards).

The maximum number of service users was recorded in January and February 2011 (48 and 45 thousand respectively).

WAP

The volume of data services delivered using WAP protocol in 2011 saw an increase of 21.3 percent over the previous year, while average traffic per session increased by about 20 percent.

Table 198 – Accesses to data services

	2010 2011		Var. 2010/2011	Var. accumulated 2007/2011	Var. annual average 2007/2011
WAP APN sessions	181	220	21.3%	13.9%	68.4%
Volume of WAP APN sessions (MB)	43	62	45.2%	40.6%	>100%

Units: millions of sessions, MB million, %

Source: ICP-ANACOM

This evolution is due mostly to a specific offer of an operator that allows free access to the WAP portal.

Revenues from the service and average revenue per subscriber¹⁶⁰

The volume of revenue from services to customers totalled approximately 2.4 billion euros, representing a decline of 3.3 percent over the previous year.

¹⁶⁰ All values are calculated based on information compiled from operators.

Table 199 – Reven	ues from the p	provision of	service to	customers
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	2010		2011		Var.
	Absolute value	%	Absolute value	%	2010/2011
Income from monthly charges (subscriptions and additional services)	241,744	9.5%	249,748	10.3%	3.3%
Revenues from voice communications	1,454,945	57.4%	1,284,901	52.8%	-11.7%
of which are roaming-out revenues	116, 237	4.6%	105,215	4.3%	-9.5%
Revenues from message services	217,015	8.6%	237,909	9.8%	9.6%
of which are MMS revenues	14,164	0.6%	15, 620	0.6%	10.3%
Revenues from mobile data services	438,626	17.3%	438,239	18.0%	-0.1%
of which are revenues from broadband Internet access	360,042	14.2%	331,331	13.6%	-8.0%
of which revenues from video calls	1,215	0.05%	387	0.02%	-68.1%
of which are mobile TV revenues	4,957	0.2%	3,428	0.1%	-30.8%
of which are revenues from other data services	58,549	2.3%	76,853	3.2%	31.3%
Revenues from roaming-out excluding voice communications	27,139	1.1%	32,071	1.3%	18.2%
of which are revenues from broadband Internet access in roaming-out	16,550	0.7%	23,684	1.0%	43.1%
Other revenues excluding equipment sales	40,803	1.6%	83,837	3.4%	105.5%
Revenues from the provision of service to customers	2,536,510		2,431,921		-4.1%

Units: thousands of euros, %

Source: ICP-ANACOM

Note: The figures differ from those previously published due to corrections made by operators. Revenues from services to operators and equipment sales are not included.

The decrease reported in revenues was mainly caused by lower revenues from voice communications and from mobile broadband Internet access – for which decreases of 11.7 and 13.6 percent were reported, respectively. Data services represent, together with voice communications, 70.9 percent of the total revenues. The decline in these revenues was not offset by the increase in other income and revenues from monthly subscription charges, messaging and other data services.

According to available data, it is estimated that average monthly revenue per subscriber declined by an average of about 6.3 percent in 2011 and has declined by 31.5 percent since 2005.

Table 200 – Average monthly revenue per average subscriber

			2007	2008	2009	2010	2011	Var. 2010/2011
Average monthly subscriber	revenue	per	€ 16.84	€ 15.93	€ 14.63	€ 13.00	€ 12.18	-6.3%

Units: euros, %

Source: ICP-ANACOM

Note: Calculations made based on revenues from services provided to customers (excluding equipment sales) and on average number of subscribers over the year.





Unit: euros

Source: ICP-ANACOM

According to Marktest's *Barómetro de Telecomunicações – Redes Móveis* (Telecommunications Barometer – Mobile Networks) and with reference to residential customers, user expenditure on the mobile service is in line with the previous year, except in the case of pre-paid tariffs without compulsory account top ups, where expenditure fell by 2 euros.

	Table 201 – Avera	ge monthly	expenditure	on MTS by t	ype of tariff
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	4Q2007	4Q2008	4Q2009	4Q2010	4Q2011
Pre-paid					
Rechargeable card with compulsory account top ups	22	19↓	15 🗸	13↓	13
Rechargeable card without compulsory account top ups	18	18	16	14↓	12↓
Post-paid					
Monthly subscription	60	54	49	41↓	41
Package of minutes	80 *	52 *	43 *		
Total	27	23↓	20↓	16↓	16

Unit: euros

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q2007 to 4Q2011

Base: All individuals with MTS access, aged 10 years or over, according tariff type (excludes non-responses)

Note 1: The margins of error with respect to the averages are below 9 percent, except in case of customer with packages of minutes.

Note 2: The upward pointing arrow signals a statistically significant increase between the instance t-1 and t and a downward arrow signals a statistically significant decrease between these two instances.

In other EU countries, and according to the latest data (for 2010), average revenue (18.8

euros) fell 7.5 percent.

Graphic 188 – Average annual revenue per user in EU, 2009-2010



Unit: euros

Source: ICP-ANACOM; European Commission Digital Agenda Scoreboard 2012 (provisional data)

7.3.4. Evaluation of consumers

In order to assess consumer perceptions about the quality of the MTS, some of the findings of Marktest's *Barómetro de Telecomunicações*-Redes Móveis (Telecommunications Barometer – Mobile Networks) are presented below.

In general, MTS customers are satisfied with the service provided by their provider. About 88 percent of users give the service a rating equal to or greater than 7 (on a scale of 1 -very dissatisfied; to 10 -very satisfied).

Satisfaction with the provider's overall service	4Q2007	4Q2008	4Q2009	4Q2010	4Q2011
Negative (1-4)	2.0 *	3.2	2.5 * 🗸	2.4 *	2.0 *
Low positive (5-6)	12.4	11.3	10.1	10.6	9.7
Medium positive (7 and 8)	42.7	43.6	41.2 🗸	39.6	43.4 🕇
High Positive (9 and 10)	43.0	41.8	46.1 1	47.3	44.8↓
Total	100	100	100	100	100

Table 202 – Level of overall satisfaction with MTS as provided by operator

Unit: %

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q2007 to 4Q2011

Base: All individuals with MTS access, aged 10 years or over, according tariff type (excludes non-responses)

Note 1: Scale of original measurement: 1: Completely dissatisfied; 10: Completely satisfied.

Note 2: Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate.

Note 3: The upward pointing arrow signals a statistically significant increase between the instance t-1 and t and a downward arrow signals a statistically significant decrease between these two instances.

Satisfaction with the coverage network/quality, customer support and services provided at retail outlets is also high. The variable with the lower rating is the service's pricing.

	4Q2007	4Q2008	4Q2009	4Q2010	4Q2011
Coverage area / network quality	8.1	8.0↓	8.2 1	8.2	8.3
Service customer support	8.1	8.0	8.0	8.1 🕇	8.2
Diversity of products and services			7.9	7.9	8.0 1
Pricing			7.2	7.2	7.3
Service in stores	8.1	8.1	8.1	8.2 1	8.2
Retail network	7.7	7.5↓	7.6	7.8 ↑	7.9 ↑
Overall service of provider	8.2	8.1	8.3↑	8.3	8.3

Table 203 – Average level of satisfaction with the MTS that is provided by the operator according to different criteria

Unit: scale of 1 (totally dissatisfied) to 10 (totally satisfied)

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q2007 to 4Q2011

Base: All individuals with MTS access, aged 10 years or over, according tariff type (excludes non-responses) **Note 1:** The absolute margin of error in the averages on a scale of 1 to 10 is less than 0.09.

Note 2: The upward pointing arrow signals a statistically significant increase between the instance t-1 and t and a downward arrow signals a statistically significant decrease between these two instances.

In order to characterize the less satisfied MTS consumer, a less satisfied customer was considered as a customer who expresses satisfaction with the overall service provided by the main MTS provider of less than or equal to five points (on a scale of 1 "totally dissatisfied" to 10 "totally satisfied"). In contrast, the more satisfied customer refers to customers expressing satisfaction with more than five points.

According to data from the 2nd half of 2011 in Marktest's *Barómetro de Telecomunicações* (Telecommunications Barometer), it appears that the less satisfied group represents 6.8 percent of individuals with the MTS service and aged 10 years or older¹⁶¹.

On average these less satisfied consumers rate the service with 4.3 points. Pricing and customer service are the two factors earning the lowest average rating in the group of less satisfied customers and are also factors which determine greater discrepancy between the two groups.

¹⁶¹ Individuals who did not respond as regards their level of overall satisfaction with the MTS provider were not considered.



Graphic 189 – Average level of satisfaction with the MTS, differentiation between more and less satisfied customers

Unit: scale of 1 (totally dissatisfied) to 10 (totally satisfied)

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 2nd half 2007

Base: All individuals with MTS access, aged 10 years or over, according tariff type (excludes non-responses)

Note: The absolute margin of error in the averages on a scale of 1 to 10 is less than 0.05 for group of most satisfied customers and less than 0.24 for the group of least satisfied customers.

A discrete choice econometric model is estimated – logit¹⁶², in order to characterize the profile of the less satisfied consumer. According to the analysis performed¹⁶³:

The logit models are based on the assumption that the relationship between P(y = 1|X) and the explanatory variables $X = (x_1 x_2 \dots x_k)$ is not linear and that the probabilities vary between 0 and 1. In this sense the model has the following structure: $P(y = 1|x_1, x_2, \dots, x_k) = G(\beta_0 + \beta_1 x_1 + \dots + \beta_k x_k)$ where G refers to a function which satisfies the condition 0 < G(z) < 1, for any real value z. In the case of the logit model, G refers to the logistic

¹⁶² The dependent variable is binary with the value 1 (where the home is less satisfied with the MTS) and 0 (where the home is more satisfied with the MTS). The available independent variables selected to explain, initially, the situation of lower customer satisfaction refer to: socio-demographic and economic characteristics (Marktest region, social class, family size, presence of children or elderly in the home, age and gender of the respondent, level of education, employment status and professional status of the respondent) and characteristics of the equipment/service; use of advanced services (such as MMs, email, downloads, Internet, none); type of equipment (PDA /Blackberry/Smartphone, 3G, without 3G but with access to provider portal) type of tariff (post-paid, pre-paid with and without compulsory account top ups); time since conclusion of contract with provider (less than six months, six months to two years; two to four years; more than four years)

- the age of the MTS customer has a direct influence on the level of overall satisfaction. Customers between 45 and 54 years are most likely to belong to the group of less satisfied customers;
- customers residing in the North interior and living alone are also more likely to belong to the group of least satisfied customers;
- in terms of level of education, there is a greater propensity for customers with 1st cycle of basic education (or lower) to express less satisfaction with the MTS provider;
- the services which customers use on their phone also influence the level of customer satisfaction. Customers who do not use advanced services (such as access to the operator portal, downloads, access to email, Mobile TV, Internet access, MMS, video calls or Messenger), are reported more likely to belong to the group of least satisfied customers;
- customers who have had contracts with the provider for less than two years are reported less likely to belong to the group of least satisfied customers. The more recently the contract was concluded with the provider, the more likely the customer is to be less satisfied.

7.4. Penetration of the service

At the end of 2010, the service's penetration rate reached 157.9 active mobile stations per 100 inhabitants or 126.1 active mobile stations with actual use per 100 inhabitants.

distribution function: $G(z) = \frac{\exp(z)}{1 + \exp(z)}$. The estimation of the model's parameters uses the method of maximum likelihood.

Only discrete variables were considered which are shown, in conjunction or individually, as determinant to the explanation of the model; whereas it is noted, that according to the logit with robust variance (Robust Huber/White Estimator) all parameter signals are in line with theoretical expectations. The model's global specification test reveals no evidence of omitted explanatory variables that are significant in explaining the dependent variable and the Pearson and Hosmer-Lemeshow adjustment tests show that the model is fitting to the data.

¹⁶³ This analysis is provided by ICP-ANACOM based on Marktest microdata - *Barómetro de Telecomunicações* (Telecommunications Barometer) Study, 2nd half 2011 The subsample considered consists of all individuals aged 10 years or over with MTS and providing response to the questions considered in the final model, which totals 7,473 sample cases.

Graphic 190 – Penetration of the MTS in Portugal



Unit: subscribers per 100 inhabitants

Source: ICP-ANACOM

According to Marktest's *Barómetro de Telecomunicações – Redes Móveis* (Telecommunications Barometer – Mobile Networks) in December 2011, 92 percent of residents in Portugal were MTS customers.

The difference between the penetration rate given above and the survey responses referred to earlier is due to various factors, for example:

	4Q2007	4Q2008	4Q2009	4Q2010	4Q2011
1 card	78.7	80.9↑	78.1↓	79.0	80.1
2 cards	17.3	16.1	18.3 1	17.9	16.5
3 or more cards	4.0	2.9↓	3.6	3.0	3.4
Total	100	100	100	100	100

Table 204 – Number of active cards

Unit: %

Source: Marktest - Barómetro de Telecomunicações (Telecommunications Barometer) Study, 4Q2007 to 4Q2011

Base: All individuals aged 10 or over with access to MTS

Note 1: Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate. **Note 2:** The upward pointing arrow signals a statistically significant increase between the instance t-1 and t and a downward arrow signals a statistically significant decrease between these two instances.

the fact that there are users who have more than one active card;

- the activation of new SIM cards used exclusively for data services and Internet access. There are at least 1.1 million cards associated with cards/modem for broadband Internet access;
- there are active cards used in machines, equipment, vehicles and companies (e.g. automated teller machine using the mobile network, alarm equipment, security, telemetry and telematics, etc.).

The penetration of MTS recorded in 2011 remains above the EU average, when considering active mobile stations.



Graphic 191 – Penetration of the MTS in the EU

Unit: subscribers per 100 inhabitants

Source: EC, Digital Agenda Scoreboard 2012 (Provisional data)

If only mobile stations with actual use are considered, the penetration rate reported in Portugal would be reported at 126.6 per 100 inhabitants, slightly below the EU average (129.1).

According to the sample results compiled by Eurostat, the service's penetration in terms of dwellings with at least one mobile telephone in Portugal was slightly below the EU average.



Graphic 192 - Dwellings with at least one mobile phone, in the EU27

Unit: percentage of dwellings with at least one mobile phone

Source: E-Communications Household Survey, Special Eurobarometer 362 / Wave EB75.1 - TNS Opinion & Social, Fieldwork: February-March 2011; Publication: July 2011.

In the case of MBB, and according to the EC, Portugal is in 13th in the ranking of EU countries, 2 percentage points above the EU average¹⁶⁴.

¹⁶⁴ The base information used by the EC is different from the information published by ICP-ANACOM. Information from the Communications Committee (COCOM) refers to the number of MBB access customers who were active during the period.



Graphic 193 – MBB penetration in EU27 in June 2011

Unit: users per 100 inhabitants

Source: EC, COCOM, Broadband access in the EU: situation at 1 July 2011.

POSTAL SERVICES

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8. Postal services

This chapter looks at the situation of postal services as at the end of 2011, as well as developments occurring over the course of the year.

8.1. Key aspects of the evolution in 2011

- The penetration rate for postal services, measured in terms of postal items per capita, was reported at 100.8 in 2011. This indicator has been declining over the past few years, with a fall of 5.7 compared to 2010 and 15.8 since 2007.
- The number of network access points, which has been declining in recent years, saw a sharp drop in 2011 (-21.6 percent) owing to the strategy being followed by Grupo CTT, entailing the deactivation and removal of a significant number of post boxes. Consequently, postal density (732 inhabitants per access point) and postal coverage (15.7 access points per 100 km²) decreased.
- Employment in the postal sector in Portugal fell by 3.7 percent over the last year, extending the trend that has been evident since 2007 (annual average decrease of 1.6 percent).

In 2011, 66 entities had authorization to provide express mail services¹⁶⁵ and 13 providers were licensed to provide non-express mail services.

However, during 2011, only 52 entities provided actually provided express services while 11 registered activity covering non-express mail services. Considering the entirety of postal traffic registered during 2011¹⁶⁶, Grupo CTT Group retained a high share (96.9 percent). In terms of express mail only, other providers had a combined share of about 67.8 percent.

- In 2011, postal traffic fell by 6 percent. Over the past five years, postal traffic decreased by about 14.0 percent.
- The base tariff for non-priority mail (tariff for a letter of 20 g, national) fell, in real terms, by 4.6 percentage points compared to 2010, and is about 31 percent below the EU27 average.

¹⁶⁵ This includes entities whose authorization was revoked during 2011.

¹⁶⁶ National traffic and outgoing international traffic.

Meanwhile, the universal service provider accomplished the defined levels of quality of service, with the exception of non-priority mail correspondence not delivered within 15 working days and priority mail correspondence not delivered within 10 working days, where targets were not achieved.

According to the *Inquérito ao Consumo dos Serviços Postais* (Survey on the use of postal services)¹⁶⁷, users are, on average, satisfied with postal services. On a scale of 1 to 10 (from "dissatisfied" to "very satisfied"), the average satisfaction level is above 8.

8.2. The offer of postal services

The postal sector in Portugal encompasses all entities and activities related to the establishment, management and operation of postal services in the national territory, as well as international services with origin or destination in the national territory.

A first segmentation of the sector results from the definition of US.

In Portugal, the universal service consists of "permanent offer of postal services of a specific quality, provided throughout national territory at prices accessible to all users, whose aim is to satisfy the communication needs of the population and those of economic and social activities"¹⁶⁸.

The universal postal service encompasses a postal service for the sending of correspondence, books, catalogues, newspapers and other periodicals weighing up to 2 kg and postal packages of up to 20 kg, as well as a service of registered items and service of insured items, on a national and international basis.

To ensure the economic-financial viability of universal service provision, a reserved area was established in Portugal comprising services provided exclusively by the US provider.

¹⁶⁷ *Inquérito ao Consumo dos Serviços Postais* (Survey on the use of postal services - Residential Population) referring to year 2010 (http://www.anacom.pt/render.jsp?contentId=1083298).

¹⁶⁸ Law No. 102/99 of 26 January.

All postal services not included in the definition of reserved postal services are operated on a competitive basis and can be supplied by the entity providing the universal service or by natural or legal persons which are duly authorized to that effect.

The provision of postal services which are non-reserved but encompassed by the universal service is subject to a system of individual licensing. The provision of non-reserved postal services not encompassed by the US is governed by a general authorization regime with less stringent requirements in terms of access to activities and imposed obligations.

In developing their activities, undertakings providing postal services are supported by a set of human and material resources, which make up the postal network.

8.2.1. Postal services

The table below lists the reserved postal services, provided exclusively by CTT, and nonreserved postal services, which may be provided by any undertaking so authorized.

Table 205 – Reserved and unreserved postal services

Postal services	Designation	Provider
Reserved Services	• Postal service of delivery of items of correspondence, including addressed advertising whether by express delivery or not, the price of which is lower than two and a half times the public tariff for sending first weight step correspondence of the fastest standardized category, provided that the weight thereof does not exceed 50 g, both at national and international level.	CTT (Operating under the concession contract)
	 Postal service of delivery of registered items and insured items, including services concerning legal summons and notification by post, within the same price and weight limits referred to in the preceding point, both at national and international levels. 	
	Issue and sale of stamps and other postal items.	
	Issue of postal orders.	
	 The provision, in areas of public access, of boxes or other receptacles for the collection of postal items. 	
Non-reserved	Operating under license	CTT and
services (national and international)	• Postal service of delivery of items of correspondence, including addressed advertising, whether by express delivery or not, where the weight thereof is lower than 50 g, and the price is equal to, or more than, two and a half times the public tariff for sending first weight step correspondence of the fastest standardised category, both at national and international levels;	other undertakings authorized to provide postal services (by license or
	 Postal service of delivery of books, catalogues, newspapers and other periodicals not exceeding 2 kg. 	authorization)
	 Postal service of delivery of postal parcels not exceeding 20 kg. 	
	 Postal service of delivery of registered items and insured items, including services concerning legal summons and notification by post, within the same price and weight limits mentioned above. 	
	Operating under authorization	
	• Express mail services (also as courier services). This service is characterized by the acceptance/collection, handling, transport and distribution, with increased speed, of items of correspondence and parcels, being differentiated from basic postal services by a set of supplementary characteristics, possible through the agreement of contacts with clients: Pre-set delivery time; Registration of items; Liability guarantee from authorized provider; Routing control.	
	 Exploration of document exchange centres – places where users may undertake self-distribution through a mutual exchange of postal items, providing their own post boxes, whereby users have to form a group of members subscribing to this service. 	
	 Other services covered by the definition of postal service and which are not comprised by the US, including services enabled by technological evolution and services which are distinct from traditional services. 	

Source: ICP-ANACOM

On 1 January 2006 a new phase of postal sector liberalization entered into force. Under paragraph 3 of article 4 of Decree-Law no., 150/2001 of 7 May, as amended by Decree-Law no. 116/2003 of 12 June, the reserved area now included the following weight and

price limits: 50 grams and two and a half times the public tariff for sending first weight step correspondence of the fastest standardized category.

In 2011 the last phase of postal sector liberalization is due to enter into force, bring an end to the reserved area and accomplishing full liberalization of postal services. The process of transposing Directive 2008/6/EC, whereby Portugal was bound to proceed with the full liberalization of postal, into national legalisation had not yet occurred. On 27 March 2012, Decree 40/XII was approved by Assembleia da República (Assembly of the Republic)¹⁶⁹. This liberalization, and the corresponding adjustment in the definition of the US obligations, may materially amend certain aspects of the market described here.

8.2.2. The postal network – physical and human resources, coverage and density

The evolution in the material resources of the overall postal network belonging to the provider of the universal postal service and by undertakings authorised to provide postal services in competition is shown in the table below¹⁷⁰.

¹⁶⁹ See. http://www.parlamento.pt/ActividadeParlamentar/Paginas/DetalheIniciativa.aspx?BID=36613.

¹⁷⁰ The postal network established, managed and operated by the US provider is known as the public postal network. Licensed undertakings and undertakings authorized to provide non-reserved services may also establish, manage and operate their own postal networks and access the public postal network according to conditions agreed with the universal postal service concessionaire. Licensed and authorized undertakings may also enter into contracts with parties other than postal service providers to supply transport services and distribution of postal items.

Table 206 – Material resources of the postal network

	2010	2011	Var. (%) 2010/2011	Var. (%) annual average 2007/2011	Var. (%) accumulated 2007/2011
No. of access points	18,396	14,428	-21.6%	-8.1%	-28.6%
Grupo CTT	18,270	14,305	-21.7%	-8.1%	-28.8%
Other providers	126	123	-2.4%	0.6%	2.5%
No. of distribution centres	492	484	-1.6%	0.3%	1.3%
Grupo CTT	370	359	-3.0%	-1.7%	-6.5%
Other providers	122	125	2.5%	7.4%	33.0%
Vehicle fleets	6,119	6,092	-0.4%	1.5%	6.2%
Grupo CTT	4,038	3,998	-1.0%	-1.8%	-6.9%
Other providers	2,081	2,094	0.6%	9.8%	45.2%

Units: number, %

Source: ICP-ANACOM

In 2011, the number of access points registered a sharp decrease (-21.6 percent), significantly higher than the average of the past five years (-8.1 percent). The magnitude of this decrease was determined by the deactivation and removal of post boxes by Grupo CTT.

The number of distribution centres decreased by 1.6 percent, given that the increase in the number of distribution centres of other providers was insufficient to offset the reductions reported by Grupo CTT.

Likewise, a reduction of 0.4 percent was reported in the vehicle fleet. Other operators reported slight increases in the size of their vehicle fleet (0.6 percent), significantly below the average of the last five years (9.8 percent).

Postal coverage, measured in terms of access points per 100 km², fell sharply in 2011, declining to 15.7 access points per 100 km², a direct consequence of a reduction in the access points of Grupo CTT.

Table 207 – Postal coverage

	117) 2 0 1 0	118) 2 0 1 1	119) Var. 2010/20 11	12	Var. annual average 2007/2011	1	Var. accumulated 2007/2011
Access points per 100 km ²	20.0	15.7	-4.3		-1.6		-6.3

Unit: access points per 100 km2

Source: ICP-ANACOM, INE (Statistics Portugal)

Graphic 194 – Postal coverage



Unit: number of access points per 100 km2

Source: ICP-ANACOM

For the same reason, the number of inhabitants per access point rose sharply in 2011, exceeding the average annual increase reported over the last five years (53 inhabitants per access point).

Table 208 – Postal density

	2010	2011	Var. 2010/2011	Var. annual average 2007/2011	Var. accumulated 2007/2011
No. of inhabitants per access point	578	732	154	52	207

Unit: no. of inhabitants per access point

Source: ICP-ANACOM, INE (Statistics Portugal)

With regard to postal coverage (ratio between area and the number of post offices), and according to the information available, in 2010, Portugal was above the European average: on average, a post office per every 32 km² in Portugal, compared to a post office every 62 km² in the EU.



Graphic 195 – International comparison of postal coverage

Unit: geographic area (in km2) covered by a post office

Source: UPU (http://www.upu.int/pls/ap/ssp_report.main?p_language=AN&p_choice=BROWSE)

Note: No data was available for Belgium, the Netherlands, Spain and Latvia.

Comparing the average number of inhabitants per post office, and according to available information¹⁷¹, the average number of inhabitants per post office in 2010 was lower than the EU average (3,711 in Portugal and 4,457 in EU).

¹⁷¹ Source: UPU, 2010.



Graphic 196 – International comparison of postal density

Unit: average number of inhabitants per post office

Source: UPU (http://www.upu.int/pls/ap/ssp_report.main?p_language=AN&p_choice=BROWSE

Note: No data was available for Belgium, the Netherlands, Spain and Latvia.

Employment in postal services has been slowly declining. There are also seasonal fluctuations in the first and fourth quarters of each year, with declines reported in these periods in the number of employees. This is due to the practice by these companies of using short term contracts during the holiday periods of their employees.


Graphic 197 – Quarterly evolution in the number of staff and forecast range

Unit: number of staff

Source: ICP-ANACOM

Note 1: * Forecast range with a significance level of 95 percent. **Note 2:** A linear trend regression model was used ($Y = 17\ 822,73\ -51,897t$) considering the following seasonality indices (additive model): Q1=-383.7; Q2=222.5; Q3=432.8; Q4=-271.6.

In 2011, the number of employees in the postal sector decreased again (-3.7 percent). This change is consistent with the historical trend and occurred both in Grupo CTT (-4.3 percent) and the remaining providers (-0.9 percent).

	122) 201 0	123) 201 1	124) Var. (%) 2010/20 11	Var. (%) annual average 2007/2011	Var. (%) accumulated 2007/2011
No. of staff	16,019	15,422	-3.7%	-1.6%	-6.2%
Grupo CTT	13,311	12,738	-4.3%	-2.4%	-9.2%
Other providers	2,708	2,684	-0.9%	2.7%	11.0%

Units: 1 employee, %

Source: ICP-ANACOM

Since 2007, employment in the postal sector has fallen by 6.2 percent.

Graphic 198 – Evolution of employment in postal services



Unit: thousands of workers

Source: ICP-ANACOM

According to available information¹⁷², there is a downward trend in employment in the postal sector in the EU27. In Portugal this fall is more pronounced. In fact, between 2006 and 2009¹⁷³, the number of people employed by providers of universal postal service in the EU27 fell by 1.8 percent, while falling 6.4 percent in Portugal over the same period.

¹⁷² Eurostat – Postal service statistics.

¹⁷³ In case of Belgium and United Kingdom, 2008 values were considered since no information is available for 2009.



Graphic 199 – International comparison of trends in employment by US providers

Source: Eurostat Postal service statistics

Note: No data was available for Belgium, Ireland, Italy and the United Kingdom.

8.2.3. Providers of postal services

In 2011, 77 undertakings were authorized to provide postal services.

Of these, 66 were eligible to provide express mail services and 13 were eligible to provide non-express mail services (CTT Expresso and VASP Premium are eligible, simultaneously, to provide express and non-express mail services).

Among the undertakings eligible to provide non-express mail services, CTT Expresso is not active in this segment and only provides express mail services.

Over the course of the year, three new licenses were granted to providers of express mail services: A Sua Pressa – recolha, entrega e distribuição de mercadorias, Unipessoal, Lda., Augusto José Concha Encarnado, Sociedade Unipessoal, Lda. and VASP Premium – entrega personalizada de publicações, Lda. (VASP Premium was already authorized to provide non-express mail services). These three providers commenced activities during 2011. In addition, Byalyk Service, Unipessoal, Lda., despite being granted authorisation previously, only commenced activities in 2011.

During 2011, four providers (António Carlos Santos – entregas rápidas, Unipessoal, Lda., ER encomendas rápidas, Lda, Startjob – recolhas e entregas, Unipessoal, Lda. and Linexpress, serviços expresso, Lda.) discontinued their activity, although the latter still remained eligible to provide services as at the end of 2011.

Also in 2011 the license issued to Ritmo Veloz, Lda., was revoked; this provider had discontinued its activity in 2010.

In 2011, 11 providers of non-express mail services and 52 providers of express mail services were engaged in activity.





Unit: No. of providers

Source: ICP-ANACOM

The postal service providers, the qualifying titles and the issuance dates of the titles are presented in the tables provided in annex to this chapter. Some of the listed undertakings also operate in other markets, especially in freight transport markets, and exercise activities which are complementary to postal services.

8.2.4. Evolution in the offer structure¹⁷⁴

Despite the already considerable number of undertakings in this market in 2011 – and in addition to the companies of Grupo CTT and agents of large international express services groups – the majority of authorised undertakings consisted of small franchisees.

Examining traffic shares by traffic destination segment, it can be seen that Grupo CTT's share of national traffic fell by 0.4 percentage points (97.1 percent versus 97.5 percent in the previous year); in the case of outgoing international traffic, Grupo CTT's share was reported at 90.7 percent.

¹⁷⁴ The information was compiled from legally eligible providers of such services. The information was compiled pursuant to the obligations imposed and the allocation of authorization titles. Definitions of services result from the prevailing legal and regulatory framework (e.g. information on parcels does not include parcels exceeding 20 kg).

Table 210 – Total postal traffic shares by destination

	2007	2008	2009	2010	2011
National					
Grupo CTT*	98.9%	98.4%	98.0%	97.5%	97. 1%
CTT	98.2%	97.7%	97.1%	96.4%	96.0%
CTT Expresso	0.7%	0.7%	0.9 %	0.9%	0.9%
Post Contacto	-	-	-	0.1%	0.2%
Chronopost	0.4%	0.5%	0.7%	0.7%	0.9%
Vasp Premium	-	0.4%	0.5%	0.5%	0.5%
Others	0.7%	0.8 %	0.9 %	1.3 %	1.5%
International outgoing					
Grupo CTT*	93.5%	92.2%	92 <i>.</i> 5%	91.7%	90.7%
СТТ	93.1%	91.8%	92.0%	91.2%	90.1%
CTT Expresso	0.4%	0.5%	0.5%	0.5%	0.6%
Iberomail	2.7%	3.2%	2.6%	2.6%	2.7%
UPS	1.2%	1.4%	1.6%	1.6%	1.8%
DHL	0.9%	1.0%	0.9%	1.1%	1.3%
Grupo SEUR	0.6%	0.6%	0.5%	0.6%	0.8%
Lisespo	0.3%	0.3%	0.2%	0.2%	0.2%
Lordtrans	0.3%	0.3%	0.3%	0.4%	0.6%
Grupo Rangel	0.5%	0.5%	0.5%	0.6%	0.6%
Rangel/Fedex	0.5%	0.5%	0.5%	0.5%	0.6%
Others	0.7%	1.1%	1 <i>.</i> 5%	1.7%	2.0%
Int. incoming					
Grupo CTT*	93.2 %	91.8 %	90.5 %	88.7 %	88.5 %
CTT	92.5%	91.1%	89.5%	87.6%	87.4%
CTT Expresso	0.7%	0.7%	0.9%	1.1%	1.1%
UPS	3.5%	4.0%	4.5%	4.9%	4.9%
Grupo SEUR	1.3%	1.8%	2.0%	2.4%	2.5%
Lisespo	1.1%	1.0%	1.1%	1.2%	1.3%
Lordtrans	0.2%	0.8%	0.9%	1.2%	1.2%
Chronopost	0.6%	0.7%	1.0%	1.1%	1.2%
Grupo Rangel	0.7%	0.8%	0.9%	1.6%	1.2%
Rangel/Fedex	0.7%	0.8%	0.9%	1.0%	1.0%
Rangel II	<u> </u>	<u> </u>	0.1%	0.6%	0.2%
Others	0.7%	0.9%	1 <i>.</i> 1%	1.3%	1.7%

Unit: %

Source: ICP-ANACOM

^{*}Includes CTT, CTT Expresso and Post Contacto

Note: The values of 2009 and 2010 have been amended after data sent by some providers was updated.

The following table shows the share of traffic operated in competition. The impact of the new providers appears most evident at the level of international traffic.

	2007	2008	2009	2010	2011
National					
Grupo CTT*	95,0%	92,6%	90,2%	87,5%	86,0%
СТТ	92,0%	89,1%	86,0%	82,6%	80,6%
CTT Expresso	3,0%	3,4%	4,2%	4,3%	4,3%
Post Contacto	-	-	-	0,6 %	1,1 %
Chronopost	1,9%	2,2%	3,2%	3,6%	4,1%
Vasp Premium	-	1,7%	2,3%	2,5%	2,5%
Notícias Direct	0,8%	0,7%	0,7%	0,9%	1,8%
Grupo Rangel	-	-	0,1%	1,5%	1,6%
Rangel II	-	-	0,1%	1,5%	1,6%
SDIM	1,1%	1,1%	1,2%	1,1%	1,1%
Adicional	-	0,4%	0,7%	0,8%	0,9%
Others	1,2%	1,5%	1,6%	2,0%	2,0%
International outgoing					
Grupo CTT*	86,3%	82,6%	83,0%	80,8%	76,4%
СТТ	85,5%	81,6%	82,0%	79,6%	75,0%
CTT Expresso	0,8%	1,0%	1,1%	1,2%	1,4%
Iberomail	5,6%	7,1%	5,9%	6,1%	6,9%
UPS	2,4%	3,1%	3,5%	3,8%	4,6%
DHL	1.9%	2.2%	1.9%	2.6%	3.3%
Grupo SEUR	1.3%	1.3%	1.2%	1.4%	2.1%
Lisespo	0.6%	0.6%	0.6%	0.6%	0.6%
Lordtrans	0.7%	0.7%	0.6%	0.9%	1.5%
Grupo Rangel	1.0%	1.2%	1.1%	1.3%	1 <i>.</i> 5%
Rangel/Fedex	1.0%	1.2%	1.1%	1.2%	1.5%
Vasp Premium	0.1%	0.7%	1.1%	1.1%	1.1%
TNT Express	0.6%	0.7%	0.9%	1.0%	1.1%
Chronopost	0.4%	0.4%	0.4%	0.6%	0.9%
Grupo Nacex	0.1%	0.4%	0.7%	0.9%	1.6%
Logista	0.1%	0.1%	0.3%	0.4%	0.6%
Outros Nacex		0.3%	0.3%	0.5%	1.0%
Others	0.3%	0.3%	0.3%	0.3%	0.5%
Int. incoming					
Grupo CTT*	81.7%	79.9%	76.7%	73.2%	73.4%
СТТ	79.9%	78.1%	74.4%	70.6%	70.9%
CTT Expresso	1.9%	1.8%	2.3%	2.6%	2.6%
UPS	9.4%	9.7%	10.9%	11.6%	11.4%

 Table 211 – Provider shares of postal traffic operated in competition

	2007	2008	2009	2010	2011
Grupo SEUR	3.5%	4.4%	4.9%	5.7%	5.7%
Lisespo	2.9%	2.5%	2.7%	2.9%	3.0%
Lordtrans	0.6%	1.9%	2.3%	2.7%	2.7%
Chronopost	1.6%	1.8%	2.6%	2.6%	2.8%
Grupo Rangel	1 <i>.</i> 9%	1.9%	2.3%	3.8%	2.7%
Rangel/Fedex	1.9%	1.9%	2.2%	2.4%	2.3%
Rangel II	-	-	0.1%	1.4%	0.5%
Grupo Nacex	0.4%	1.0%	1.4%	1.6%	2.2%
Logista	0.2%	0.3%	0.7%	0.9%	1.0%
Others Nacex	0.2%	0.7%	0.7%	0.7%	1.1%
TNT Express	0.5%	0.4%	0.4%	0.5%	0.8%
DHL	0.5%	0.4%	0.4%	0.5%	0.5%
Others	0.4%	0.4%	0.3%	0.5%	0.5%

Unit: %

Source: ICP-ANACOM

^{*}Includes CTT, CTT Expresso and Post Contacto

Note: The values of 2009 and 2010 have been amended after data sent by some providers was updated.

The breakdown by type of service shows that Grupo CTT's share of the non-express mail segment remains very high (98.7 percent).

Table 212 – Shares of	f postal traffic	by type of	service
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	2007	2008	2009	2010	2011
Express service					
Grupo CTT*	46.1%	44.5%	41.6%	34.6%	32.2%
Others	53.9%	55.5%	58.4%	65.4%	67.8%
Non-express service					
Grupo CTT*	99.4%	99.1%	99.0%	98.9%	98.7%
Others	0.6%	0.9%	1.0%	1.1%	1.3%
Unit: %					

Source: ICP-ANACOM

* Includes CTT, CTT Expresso and Post Contacto

Note: The values of 2009 and 2010 have been amended after data sent by some providers was updated.

In the case of express mail, new providers have a combined market share of around 67.8 percent. Considering all traffic distributed over the year, CTT Expresso has maintained leadership in this segment¹⁷⁵.

	2007	2008	2009	2010	2011
CTT Expresso	46.1%	44.5%	41.6%	34.6%	32.2%
Chronopost	29.2%	27.7%	31.4%	28.8%	30.7%
Grupo Rangel	1.3%	1.2%	1.8%	12.2%	12.3%
Rangel/Fedex	1.3%	1.2%	0.9%	0.8%	0.8%
Rangel II	-	-	0.9%	11.4%	11.5%
Adicional	-	4.8%	6.5%	6.5%	6.4%
DHL	7.5%	6.3%	5.3%	4.7%	4.3%
Grupo Nacex	0.4%	1.8%	2.4%	2.8%	3.3%
Logista	0.1%	0.2%	0.6%	0.8%	1.0%
Iberperímetro	-	0.1%	0.3%	0.4%	0.6%
Others Nacex	0.2%	1.5%	1.5%	1.5%	1.8%
TNT Express	4.8%	4.1%	3.7%	3.3%	3.2%
UPS	3.3%	3.1%	2.8%	2.4%	2.5%
Grupo SEUR	3.8%	3.5%	2.1%	2.5%	2.4%
Lisespo	3.8%	3.5%	2.1%	2.5%	2.4%
Transportes Ochôa	2.6%	2.1%	1.8%	1.6%	1.9%
Others	0.9%	0.9%	0.7%	0.7%	0.9%

Table 213 – Shares of postal traffic by express mail operator

Unit: %

Source: ICP-ANACOM

8.2.5. Pricing of universal service (US)

The rules governing the pricing of postal services that make up the US¹⁷⁶ are subject to the *Convénio de Preços do Serviço Postal Universal* (Price Convention of the Universal Postal Service) established between the regulator (ICP-ANACOM) and the universal service provider (CTT).

¹⁷⁵ If only traffic occurring in each quarter is considered- a different analysis from that followed in this report - Chronopost would exceed CTT Expresso from 3Q.

¹⁷⁶ The Convénio de Preços (Price Convention) establishes the rules governing the universal postal service, which encompasses a postal service for items of correspondence (including addressed publicity), books, catalogues, newspapers and periodicals up to 2 kilograms of weight and parcels up to 20 kilograms of weight, as well as a service for registered items and a service for sending items of declared value, provided on a national and international basis (paragraphs 1 and 2 of Article 6 of the Lei de Bases (Basic Law)).

In 2011, the *Convénio de Preços* (Price Convention) of the Universal Postal Service, concluded between ICP-ANACOM and CTT on 10 July 2008, was automatically renewed for a one-year period, with the amendments as implemented on 9 July 2010. Among the provisions of the *Convénio de Preços* (Price Convention), the variation in the weighted average of prices of reserved postal services in 2011 is subject to a price capping system whereby this variation may not, in nominal terms, exceed 0.4 percentage points less than the sum of the rate of inflation forecast for 2011 in the State Budget and the value of the "CPI adjustment factor" (CPIAF), which corresponds to the difference between the inflation value forecast for 2010 in the 2011 State Budget Report and the rate of inflation initially forecast for 2010 as reported in the 2010 State Budget Report;

During 2011 there were no changes to the prices of the universal postal service, despite the fact that the application of the *Convénio de Preços* (Price Convention) in this year allowed an average change in the price of reserved services up to 2.3 percent.

Between 1993¹⁷⁷ and 2011, the average tariff up to 20 g for non-priority mail and priority mail¹⁷⁸ provided a positive trend for customers, with a reduction in real terms of 11.8 percentage points and 23.8 percentage points, respectively.

¹⁷⁷ When the first *Convenção de Preços* (Price Convention) agreed between ICP-ANACOM, CTT and the then DGCC - Direcção-Geral do Comércio e da Concorrência (Directorate General of Commerce and Competition) was in force.

¹⁷⁸ The prices considered are those of: stamps and franking at the post office counter; items sent according to flat-rate fee; stamps in vending machines (1 and 10 units). In calculating average annual prices, a fixed traffic structure is used, corresponding to 2010. The calculation of the actual trend in the price index took each year's reported inflation rate into account.



Graphic 201 – Real evolution in the base tariff: national *correio normal* (non-priority mail) and *correio azul* (priority mail)

Unit: index-base (1993 = 100)

Source: ICP-ANACOM

According to the report on price comparisons between the European Union's Universal Service Providers, in 2011¹⁷⁹, the price of national priority mail up to 20 g in Portugal is 10 percent lower than the EU27 average (excluding Portugal) when compared without purchasing power parity (PPP), so that Portugal is 12th out of the 27 countries.

In relation to national non-priority mail up to 20 g, Portugal has the second lowest price out of a total of 14 countries with this service, compared without PPP. This price is about 31 percent below the EU27 average (without Portugal).

In terms of the price of priority cross-border intra-community correspondence up to 20 g, Portugal is 6th in the ranking of EU27 countries, about 15 percent below the EU27 average (excluding Portugal) when compared without PPP.

¹⁷⁹ See <u>http://www.anacom.pt/download.jsp?contentId=1116023&fileId=1114933&channel=graphic</u>.

8.2.6. The quality of the universal service

Under paragraph 5 of article 8 of *Lei de Bases dos Serviços Postais* (Basic Law for Postal Services) and clause 12 of the Concession, the parameters and minimum levels of quality of the US, to which CTT is subject, are to be established in an agreement concluded between ICP-ANACOM and CTT, in a negotiation process running in parallel with the process referring to universal service prices.

The Universal Postal Service *Convénio de Qualidade* (Quality Convention), signed on 10 July 2008, as amended on 10 September 20103, which in line with the *Convénio de Preços* (Price Convention) was renewed through 2011, establishes the parameters and minimum quality levels associated with the provision of universal service which CTT is bound to provide.

The *Convénio de Qualidade* (Quality Convention) sets out quality of service indicators (QSI) for i) transit time for *correio normal* (non-priority mail), *correio azul* (priority mail), newspapers and periodicals, cross-border intra-community and parcels, ii) losses reported in *correio normal* (non-priority mail) and *correio azul* (priority mail), and iii) waiting time at Postal Establishments. Each QSI establishes a minimum level and target level of quality of service. The target level represents the level of quality that CTT intends to accomplish each year, and the minimum level represents the minimum level of quality which CTT is bound to provide.

In 2011, target values were achieved for all QSI, with the exception of QSI4 (non-priority mail not delivered within 15 working days) and QSI5 (priority mail not delivered within 10 working days), which nevertheless exceeded the respective minimum values.

The following table shows the minimum values and target values established in the convention, as well as levels accomplished during 2011:

		Conv (Qu	<i>énio de Qu</i> ality Conve	Quality of	
	Quality of service indicators	RI	Establish	ed value	in 2011 (a)
		(%)	Min.	Obj.	
QSI1	Transit time for non-priority mail (D+3)	45.0	95.5%	96.3%	96.8%
QSI2	Transit time for priority mail – Mainland (D+1)	15.0	93.5%	94.5%	94.7%
QSI3	Transit time for priority mail – CAM (D+2)	4.0	84.0%	87.0%	91.8%
QSI4	Non-priority mail not delivered within 15 working days (per one thousand letters)	5.0	2.3‰	1.4‰	1.7‰
QSI5	Priority mail not delivered within 10 working days (per one thousand letters)	3.0	2.5‰	1.5‰	1.6‰
QSI6	Transit time for newspapers and periodicals (D+3)	11.0	95.5%	96.3%	97.7%
QSI7	Transit time for intra-community cross-border mail (D+3)	3.5	85.0%	88.0%	(i) 92.7%
QSI8	Transit time for intra-community cross-border mail (D+5)	3.5	95.0%	97.0%	(i) 98.4%
QSI9	Transit time for non-priority parcels (D+3)	5.0	90.5%	92.0%	94.8%
QSI10	Waiting time at post establishments (% of waiting time up to 10 minutes)	5.0	75.0%	85.0%	87.0%
GI - Global indicator of quality of service (b)			n.a	n.a	173

Table 214 – QSI defined in the 2008 Convénio de Qualidade (Quality Convention) and values observed in 2011

Unit: %

Source: (a) CTT. (B) ICP-ANACOM calculation, unaudited figures

Notes: (I) corresponding to the average of 4th quarter 2010 and the value of the first three quarters of 2011 D+X, means delivery up to X working day(s) after the deposit of the items at the mail reception point. RI - relative importance. Min. – Minimum Target - Target value n.a. - not applicable

The *Convénio de Qualidade* (Quality Convention) also establishes a global indicator of quality of service¹⁸⁰, which is calculated based on the levels of quality of service

¹⁸⁰ The GI is calculated as follows: 1) a classification is assigned to each QSI established in the *Convénio de Qualidade* (Quality Convention) in accordance with the following methodology: i) With the verification that

accomplished by CTT in respect of the above QSI. The evolution of this indicator is presented in the following table. The global indicator was reported with a value higher than 100, but declined from the previous year.





Unit: GI

Source: ICP-ANACOM

Note: Given that the value of the GI results from the individual values of the QSI, any comparison of the evolution of the GI should take account of the alterations made at the level of QSI for each year and in terms of the methodology of their calculation.

Note 2: If the global indicator is equal to 100 or greater than 100, there is no penalty; if less than 90, the penalty is applied in full. If the result is between 90 and 100, a proportional deduction is applied.

In comparative terms, and based on data contained in the report on the quality of service and end-user satisfaction for 2010, prepared by the European Regulators Group for

the accomplished value is equal to the value established for each QSI, a value of 100 is assigned to the QSI, ii) if the amount accomplished is less than the minimum value, a value of 0 is assigned to the QSI, iii) if the realized value is between the minimum and the target, a proportional value of between 0 and 100 is assigned to the QSI, iv) for values above the target, the classification will be more than 100 in proportion to the positive difference achieved for the objective. 2) Sum of the classifications assigned to each QSI, weighting them according to their relative importance. 3) if the GI is 100 or more there will be no deduction associated with the GI; ii) If it is less than 90 the full deduction of 1 percentage point shall be applied; iii) if it is between 90 and 100, the deduction shall be applied proportionately. The deduction corresponds to the deduction of a maximum of 1 percentage point with respect to the prices of reserved services allowed for the year following the respective lack of compliance.

Postal Services (ERGP), it is evident that Portuguese priority mail (*correio azul*) has been performing well in terms of transit times, with the accomplished value exceeding the target value as one of the highest accomplished values (and target) among the EU's Member States.





Unit: %

Source: ICP-ANACOM, based on data contained in Report on the quality of service and the end-user satisfaction, ERGP, 24 November 2011

8.3. The profile of the postal services consumer and the level of service usage

The profile of the user and residential use of postal services is outlined below.

According to the information available¹⁸¹, the *correio normal* (non-priority mail) and *correio azul* (priority mail) service remain the most used postal services¹⁸².

¹⁸¹ Inquérito ao Consumo dos Serviços Postais (Survey on the use of postal services) referring to year 2010: the universe is made up of individuals aged 15 years or older residing in private housing units located in Mainland Portugal or in the Autonomous Regions (Azores and Madeira). The sampling procedure was based on two phases: (1) selection of dwelling occupied as habitual residence through a sample stratified by NUTS II region and habitat; (2) selection of an individual within each dwelling ensuring quotas in terms of gender, age, education level and employment status within each NUTS II region, in line with the Population Census (2001) INE (Statistics Portugal). 1,342 interviews were conducted, guaranteeing a maximum absolute error rate of 2.68 (semiamplitude of a confidence interval of 95% for a proportion). Data collection was performed using Computer Assisted Personal Interviewing (CAPI) conducted between 22 November and 22 December 2011. The fieldwork and data processing was performed by TNS-Euroteste.

Postal services are most heavily used by people of working age. The use of various types of mail is statistically associated with the individual's age group. Registered mail has the closest association (Cramer V coefficient of 0.178) and *correio azul* (priority mail) the lowest level of association (Cramer V coefficient 0.115).

	Correio normal	Correio azul	Correio expresso	Correio verde		Registered
	(non-priority)	(priority)	(express)	(pre-paid)	Parcels	mail
15-24	34.6 *	44.0 *	26.6 *	#	#	31.9 *
25-34	49.5 *	54.3 *	29.9 *	#	31.6 *	49.2 *
35-44	48.0 *	55.4 *	25.0 *	#	27.7 *	39.4 *
45-54	46.4 *	54.4 *	#	#	29.4 *	52.8 *
55-64	51.3 *	58.6	#	#	34.2 *	51.0 *
65+	41.0 *	45.0 *	#	#	20.3 *	32.8 *

Table 215– Percentage of individuals using postal services, by age group

Unit: %

Source: ICP-ANACOM Inquérito ao Consumo dos Serviços Postais (Survey on the use of postal services), December 2010

Base: Individuals aged 15 years or over according to your age group

Note 1: The coefficient of variation is considered as sampling error indicator, based on the variance of the "proportion" estimator of a simple random sample and assuming a significance level of 95 percent. The following key is used:

(#) Coefficient of variation greater than or equal to 25 percent (unreliable estimate)

(*) Coefficient of variation greater than or equal to 10 percent and less than 25 percent (acceptable estimate)

(no symbol) Coefficient of variation less than 10 percent (reliable estimate)

Note 2: The shaded proportions indicate those that are significantly different (column) in accordance with the test of two samples for proportions. In light tone highlights are the proportions above and darker below the proportions.

¹⁸² The standard of service was approved by Administrative Rule no. 1048/2004 of 16 August. See http://www.anacom.pt/streaming/port1048_04.pdf?categoryld=42989&contentId=224902&field=ATTACHED_FILE

Use of the various types of mail is also significantly associated with the individual's level of education, with a higher degree of association found in terms of *correio verde* (pre-paid mail) and the express service (Cramer V coefficient of 0.224) and *correio normal* (non-priority mail) has the least association (Cramer V coefficient of 0.151). Postal services receive relatively more intensive use from individuals with a higher level of education.

	Correio normal (non- priority)	Correio azul (priority)	Correio expresso (express)	Correio verde (pre-paid)	Parcels	Registered mail
Higher education	56.4 *	70.5	34.9 *	30.9 *	45.9 *	61.7 *
Secondary education	50.3 *	58.5 *	34.8 *	23.0 *	29.4 *	49.8 *
3rd cycle of basic education	45.8 *	60.7 *	#	#	36.0 *	49.4 *
2nd cycle of basic education	29.2 *	32.6 *	#	#	#	29.2 *
1st cycle of basic education or under	43.0	45.9	14.2 *	#	19.9 *	35.2 *
Unit: %						

Table 216 – Percentage of individuals using postal services, by level of education

Source: ICP-ANACOM Inquérito ao Consumo dos Serviços Postais (Survey on the use of postal services), December 2010

Base: Individuals aged 15 years or more according to level of education

Note 1: The following key is used: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate. **Note 2:** The shaded proportions indicate those that are significantly different (column) in accordance with the test of two samples for proportions. In light tone highlights are the proportions above and darker below the proportions.

Social class is also statistically associated with the use of various types of mail: the parcel service has the greatest association (Cramer V coefficient of 0.244) and *correio normal* (non-priority mail) has a lower association (0.124). Postal services receive relatively more intensive use from individuals from higher socio-economic classes.



Table 217 - Percentage of individuals using postal services, by social class

Unit: %

Source: ICP-ANACOM Inquérito ao Consumo dos Serviços Postais (Survey on the use of postal services), December 2010

Base: Individuals aged 15 years or over according to household social class

Note 1: The following key is used: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate. Note 2: The shaded proportions indicate those that are significantly different (column) in accordance with the test of two samples for proportions. In light tone highlights are the proportions above and darker below the proportions. Note 3: Social class is determined according to educational level and occupation of the individual with highest income in the household. The social class A is the highest, and social class D is the lowest.

Finally, the use of various types of mail is statistically associated with the individual's employment status: registered mail has a greater association (Cramer V coefficient of 0.158). The employed population tends to make most use of postal services.

	Correio normal (non- priority)	Correio azul (priority)	Correio expresso (express)	Correio verde (pre-paid)	Parcels	Registered mail
Employed population	48.9	56.0	27.7 *	20.0 *	31.2 *	48.4
Students	#	#	#	#	#	#
Unemployed	#	#	#	#	#	#
Retired	43.5 *	48.8 *	#	#	23.1 *	38.0 *
Other non-active	40.5 *	49.5 *	#	#	#	37.9 *

Unit: %

Source: ICP-ANACOM Inquérito ao Consumo dos Serviços Postais (Survey on the use of postal services), December 2010

Base: Individuals aged 15 or over according to employment status

Note 1: The following key is used: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate.

Note 2: The shaded proportions indicate those that are significantly different (column) in accordance with the test of two samples for proportions. In light tone highlights are the proportions above and darker below the proportions.

It should be noted also that Internet use does not seem to discourage use of postal services, given that Internet users make up the most intensive users of postal services.





Unit: no. items sent

Source: ICP-ANACOM, Inquérito ao Consumo dos Serviços Postais (Survey on the use of postal services), December 2008

Base: Individuals aged 15 or over according to the use of Internet

Note 1: The following key is used: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate.

Note 2: The shaded proportions indicate those that are significantly different (column) in accordance with the test of two samples for proportions. In light tone highlights are the proportions above and darker below the proportions.

8.3.1. Service usage

The following sections look at the evolution reported in overall traffic, liberalized traffic and traffic by destination¹⁸³.

Evolution in global traffic

In 2011, postal traffic fell by 6 percent, which is in line with the recent historical trend. In the last five years, postal traffic has declined by 14 percent, an average annual reduction of 3.7 percent.

¹⁸³ The information was compiled from legally eligible providers of such services. The information was compiled pursuant to the obligations imposed and the allocation of authorization titles. Definitions of services result from the prevailing legal and regulatory framework (e.g. information on parcels does not include parcels exceeding 20 kg).

Table 220 – Postal traffic

	2010	2011	Var. (%) 2010/2011	Var. (%) annual average 2007/2011	Var. (%) accumulated 2007/2011
Postal traffic	1,133,588	1,065,097	-6.0%	-3.7%	-14.0%

Units: thousands of objects; %

Source: ICP-ANACOM

Note: The values of 2010 have been amended after data sent by some providers was updated

Analyzing the quarterly evolution reported in postal traffic, it is concluded that this service sees seasonal spikes in each first and fourth quarter. Postal traffic reported in 2011 was within the forecast range resulting from the historical trend, with the exception of 4th quarter 2011, where the value was close to the lower limit of the forecast range.





Unit: thousands of items

Source: ICP-ANACOM

Note 1: * Forecast range with a significance level of 95 percent.

Note 2: A regression model was used with quadratic trend ($Y = 321534,36 - 40,173t^2$) considering the following seasonality indices (multiplicative model): Q1=1.050; Q2=0.975; Q3=0.934; Q4=1.041.

Note 3: The values of 2009 and 2010 have been amended after data sent by some providers was updated.

Traffic composition: reserved area/area liberalized

In 2011, there was a reduction in traffic, both in terms of reserved mail (-6.2 percent), and in terms of the liberalized mail (-5.4 percent). The relative weight of reserved mail in 2011 stood at 78.6 percent, a figure similar to the previous year.

	2010	2011	Var. (%) 2010/2011	Var. (%) annual average 2007/2011	Var. (%) accumulated 2007/2011
Reserved area	892,685	837,184	-6.2%	-3.1%	-11.9%
Liberalized area	240,903	227,913	-5.4%	-5.7%	-20.8%

Table 221 – Postal traffic: reserved area/liberalized area

Units: thousands of items, %

Source: ICP-ANACOM

Note: The values of 2010 have been amended after data sent by some providers was updated.

In cumulative terms, taking the last five years as a reference, reserved traffic declined by 11.9 percent and liberalized traffic fell by 20.8 percent. In both cases, the reported reductions were mainly driven by CTT.





Unit: thousands of items

Source: ICP-ANACOM

However, the most significant variations reported in the traffic mix (reserved area/liberalized area) since 2002 are explained mainly by the entry into force of the successive phases of postal sector liberalization in 2003, 2004 and 2006. These changes in the regulatory environment resulted in traffic previously classified as reserved traffic being re-categorized as liberalized traffic. In contrast, the changes which have occurred since 2006 only reflect the behaviour of the market's participants.

Meanwhile, according to the latest information available from Eurostat, between 2006 and 2009, correspondence traffic fell by 5.6 percent in the EU27 and, over same period, by 8.9 percent in Portugal.

Traffic of liberalized area by item type: correspondence and parcels

Liberalized traffic mostly consists of correspondence (88.7 percent).

	2010	2011	Var. (%) 2010/2011	Var. (%) annual average 2007/2011	Var. (%) accumulated 2007/2011
Correspondence	215,606	202,124	-6.3%	-6.8%	-24.6%
Parcels	25,297	25,789	1.9%	6.9%	30.6%
125) Liberalized area	126) 2 40,90 3	127) 2 27,91 3	128) - 5.4%	129) -5.7 %	131) - 1 20.8 %

Table 222 – Postal traffic of liberalized area

Units: thousands of items, %

Source: ICP-ANACOM

Note: The values of 2010 have been amended after data sent by some providers was updated.

The variations reported in liberalized traffic are essentially explained by the reduction in correspondence. Parcels, meanwhile, have seen significant growth, while representing just over 10 percent of such traffic.

Parcels Correspondence

Graphic 206 – Evolution in liberalized traffic

Unit: thousands of items

Source: ICP-ANACOM

Note: Liberalized area until 31.12.2002 — price exceeding five times the public tariff for sending first weight step correspondence of the fastest standardized category, or with weight exceeding 350 g; Liberalized area of 01.01.2003 to 31.12.2005 — price exceeding three times the public tariff for sending first weight step correspondence of the fastest standardized category, or with weight exceeding 100 g; Liberalized area from 01.01.2006 - price greater than two and half times the public tariff for an item of correspondence in the first weight step of the fastest standard category, or whose weight exceeds 50 g.

As previously mentioned, the majority of variations reported in the traffic mix (reserved area / liberalized area) are explained by the re-categorization of reserved traffic as liberalized traffic following the various stages of liberalization. In contrast, the changes which have occurred since 2006 only reflect the behaviour of the market's participants.

Evolution of traffic per destination: national/international

Analyzing the trends in postal traffic by destination, it is reported that national traffic and outgoing international traffic declined in 2011, by 6.1 percent and 3.6 percent respectively. This reduction in traffic was particularly influenced by the evolution in the reserved area of CTT, whereas the total traffic of other providers increased.

Table 223 – Postal traffic by traffic destination

	2010 2011		Var. (%) 2010/2011	Var. (%) annual average 2007/2011	Var. (%) accumulated 2007/2011
Postal traffic	1,133,588	1,065,097	-6.0%	-3.7%	-14.0%
National	1,092,464	1,025,471	-6.1%	-3.7%	-13.8%
International outgoing	41,124	39,626	-3.6%	-4.9%	-18.3%
International incoming	37,408	35,025	-6.4%	-6.9%	-25.0%

Units: thousands of items, %

Source: ICP-ANACOM

Note: The values of 2010 have been amended after data sent by some providers was updated.

Outgoing international traffic suffered a proportionally greater decline in the period 2007 to 2011. This type of traffic declined by 18.3 percent while national traffic declined by 13.8 percent.





Unit: thousands of items

Source: ICP-ANACOM

National traffic represents 96.3 percent of all postal traffic.

Evolution in traffic by type of service

With regard to evolution in traffic by type of service, growth in the express mail services segment stands out (2.3 percent in 2011)¹⁸⁴. However, the growth reported in 3rd and 4th quarters is below the lower limit of the forecast range resulting from the historical trend.





Unit: thousands of items

Source: ICP-ANACOM

Note 1: * Forecast range with a significance level of 95 percent.

Note 2: A regression model was used with quadratic trend (Y=3278,29 3,889t2) considering the following seasonality indices (additive model): Q1=-52.691; Q2=94.773; Q3=-296.999; Q4=254.918.

Note 3: The values of 2009 and 2010 have been amended after data sent by some providers was updated.

¹⁸⁴ The information was compiled from legally eligible providers of such services. The information was compiled pursuant to the obligations imposed and the allocation of authorization titles. Definitions of services result from the prevailing legal and regulatory framework (e.g. information on parcels does not include parcels exceeding 20 kg).

Table 224 – Postal traffic by type of service

	2010	2011	Var. (%) 2010/2011	Var. (%) annual average 2007/2011	Var. (%) accumulated 2007/2011
Postal traffic	1,133,588	1,065,097	-6.0%	-3.7%	-14.0%
Express	28,522	29,175	2.3%	13.2%	64.3%
Non-express	1,105,066	1,035,922	-6.3%	-4.0%	-15.1%

Unit: thousands of items

Source: ICP-ANACOM

Note: The values of 2010 have been amended after data sent by some providers was updated.

Despite the reported evolution, non-express mail postal traffic continues to represent the majority of liberalized traffic (87.2 percent). However, since 2007, non-express mail traffic has seen a total reduction of about 15.1 percent.

8.3.2. Consumer evaluation

According to the Consumer Survey of Postal Services, users were, on average, satisfied with postal services. On a scale of 1 to 10 (from "dissatisfied" to "very satisfied"), the average satisfaction level is above 8. Users are most satisfied with *correio azul* (priority mail) and *correio verde* (pre-paid mail)

Express mail also receives a good classification in terms of satisfaction with respect to compliance with deadlines.

	Correio normal (non- priority mail)	Correio azul (priority mail)	Express mail	Correio verde (pre- paid mail)	Parcels	Registered mail
Level of overall satisfaction	8.2	8.8	8.5	8.7	8.3	8.6
a) Compliance with advertised delivery deadlines	8.0	8.6	8.7	8.5	8.2	8.4
b) Price	7.6	7.7	7.6	7.8	7.2	7.4
c) Confidentiality / inviolability of correspondence	8.7	8.9	8.9	9.1	8.6	8.9

Table 225 - Level of satisfaction with postal services (average)

Unit: scale from 1 to 10

Source: ICP-ANACOM, Inquérito ao Consumo dos Serviços Postais (Survey on the use of postal services), December 2008

Base: Individuals aged 15 years or more with access to respective postal services (excluding non-responses) Note 1: The margins of error of the measurements on a scale of 1 to 10 are all equal to or less than 0.3 absolute points.

Note 2: Measuring scale: 1: very dissatisfied; 10: Very satisfied.

Note 3: The shaded averages highlight those that are significantly different from the overall level of satisfaction according to the T test. In light tone highlights are the proportions above and darker below the proportions.

The level of satisfaction with postal services, specifically with regard to the postal network, also improved between 2008 and 2010, and is consistently higher for post offices than for post.

Table 226 - Level of satisfaction with postal services - postal network

	Post offic	es (1)	Post (2)		
	2008	2010	2008	2010	
Average level of satisfaction (scale 1 to 10)	7.8	8.1	7.3	7.6	
Negative (1 to 4)	#	#	7.7 *	5.1 *	
Low positive (5 to 6)	14.6 *	10.4 *	20.9 *	20.3 *	
Medium positive (7 and 8)	50.2	44.1	43.0	42.8	
High positive (9 and 10)	32.3	43.2	28.4	31.8	
Total	100	100	100	100	

Unit: scale 1 (very dissatisfied) to 10 very satisfied)

Source: ICP-ANACOM, Inquérito ao Consumo dos Serviços Postais (Survey on the use of postal services)

(1) Base: Individuals aged 15 or over with access to post offices (excluding non-responses)

(2) Base: Individuals aged 15 years or more (excluding non-responses)

Note 1: The absolute margins of error in the averages on a scale of 1 to 10 do not exceed 0.12 points. **Note 2:** Key to symbols on estimates: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate (see footnote 3).

In relation to the level of satisfaction with the post office, the parameters generating least satisfaction are accessibility by people with special needs and counter waiting time, while location provides greatest satisfaction.

Table 227 – Level of satisfaction with post offices according to different parameters (average)

	2008	2010
Level of overall satisfaction	7.8	8.1
a) Diversity of services offered	7.6	8.1
b) Clarity and transparency of information provided	7.6	8.1
 c) Performance of customer service staff (knowledge of services, friendliness and ability to solve problems) 	7.9	8.3
d) Counter waiting time	7.0	7.3
e) Organization of queues	7.6	7.7
f) Operating hours	7.5	8.0
g) Accessibility by people with special needs	6.3	7.1
h) Location	8.1	8.4
 Mail delivered correctly (correct address and undamaged) 	7.7	7.9

Unit: scale 1 (very dissatisfied) to 10 (very satisfied)

Source: ICP-ANACOM, Inquérito ao Consumo dos Serviços Postais (Survey on the use of postal services)

Base: Individuals aged 15 or over with access to post offices (excluding non-responses)

Note 1: The absolute margins of error in the averages on a scale of 1 to 10 do not exceed 0.18 points. **Note 2:** The highlighted averages indicate those that are significantly different from the overall level of satisfaction according to the T test. In light tone highlights are the averages above and darker below the averages.

The main reason for non-use of postal services, regardless of the type of service, appears to be lack of need to communicate in this way.

Table 228 – Reasons for non-use of postal services

	Correio normal (non- priority mail)	Correio azul (priority mail)	Express mail	Correio verde (pre-paid mail)	Parcels	Registered mail
No need to correspond with anyone in this way	71.4	78.2	82.4	70.4	89.3	88.8
Service very slow	9.6 *					
Do not know the service / lack of information				15.1 *		
Other factors						
Don't know/no response	2.1	2.1	2.2	3.9	2.2	2.7
Total	100	100	100	100	100	100

Unit: %

Source: ICP-ANACOM, Inquérito ao Consumo dos Serviços Postais (Survey on the use of postal services), December 2010

Base: Individuals aged 15 years or over who have not used the respective postal services Note: The following key is used: (#) Unreliable estimate; (*) Acceptable estimate; (no symbol) Reliable estimate.

8.4. Penetration of postal services

The penetration rate for postal services measured in terms of postal items per capita fell from 106.6 to 100.8 in 2011, as can be observed in the table below.

Table 229 – Postal items per capita

	2010	2011	Var. 2010/2011	Var. annual average 2007/2011	Var. accumulated 2007/2011
Postal items per capita	106.6	100.8	-5.7	-4.0	-15.8
National traffic	102.7	97.1	-5.6	-3.7	-15.0
Outgoing international traffic	3.9	3.8	-0.1	-0.2	-0.8
Incoming international traffic	3.5	3.3	-0.2	-0.2	-0.8

Unit: postal traffic per capita

Source: ICP-ANACOM, INE (Statistics Portugal)



Graphic 209 - Evolution of postal traffic per capita, by destination

Unit: postal items per capita

Source: ICP-ANACOM

According to available information, in 2009, correspondence traffic per inhabitant per year in Portugal was 13th highest among the 25 countries listed below.



Graphic 210 - Postal items per capita in Europe 2009

Unit: postal correspondence items per inhabitant

Source: Sector Studies 2010, EC

Note: Slovenia data from 2007. Data from Finland, France and Greece refers to 2008. Data from Cyprus refers to 2008 and do not include editorial or direct mail. Data from Sweden, the Netherlands, Austria, Denmark and Romania do not include outgoing international traffic. Data from the United Kingdom corresponds to the tax year (from 04.01.2008 to 31.03.2009). Data from Germany is estimated and does not include outgoing international traffic or editorial post.

ANNEX – providers of postal service

Table 230-Authorized providers of non-express mail services as at end 2011

		Issue	
Company	Licence no.	Date	Services provided
		Duto	
CTT Correios de Portugal, S.A. ⁽¹⁾	The universal postal servic (CTT) is allowed to opera postal services not within US, with exemption authorization title.	e concessionaire ate non-reserved the scope of the from additional	Sending of correspondence, including addressed publicity (Direct Mail), books, catalogues, newspapers and other periodicals. Postal parcels.
CTT Expresso – Serviços Postais e Logística, S.A. ⁽²⁾	ICP-01/2001-SP	01.10.2001	Sending of correspondence, including addressed publicity (Direct Mail), books, catalogues, newspapers and other periodicals. Postal parcels.
SDIM – Sociedade de Distribuição de Imprensa da Madeira, Lda.	ICP-ANACOM-01/2002- SP	24.02.2002	Distribution of books, catalogues, newspapers and other periodicals.
NOTÍCIAS DIRECT – Distribuição ao Domicílio, Lda.	ICP-ANACOM-02/2002- SP	12.09.2002	Distribution of books, catalogues, newspapers and other periodicals.
MEEST Portugal –	ICP-ANACOM-01/2005-	07.07.2005	
Unipessoal, Lda.	58		Postal parcels.
URBANOS – Distribuição Expresso, S.A.	ICP-ANACOM-02/2005- SP	15.07.2005	Postal parcels.
IBEROMAIL – Correio	ICP-ANACOM-01/2006-	18.05.2006	
Internacional, Lda.	SP		Postal parcels.
LORDTRANS – Transportes Urgentes, Lda.	ICP-ANACOM-02/2006- SP	28.12.2006	Distribution of postal items and parcels.
POST 21 – Empresa de Correio, S.A.	ICP-ANACOM-01/2007- SP	04.05.2007	Sending of correspondence, including addressed publicity (Direct Mail), books, catalogues, newspapers and other periodicals. Postal parcels.
VASP PREMIUM – Entrega Personalizada de Publicações, Lda.	ICP-ANACOM-02/2007- SP	23.07.2007	Distribution of books, catalogues, newspapers and other periodicals.
CELERIS – Distribuição Postal, Lda.	ICP-ANACOM-01/2008- SP	22.07.2008	Sending of correspondence, including addressed publicity (Direct Mail), books, catalogues, newspapers and other periodicals. Postal parcels.
Post Contacto, correio publicitário, Lda.	ICP-ANACOM-01/2009- SP	18.11.2009	Sending of correspondence, including addressed publicity, books, catalogues, newspapers and other periodicals.
DOOR-TO-DOOR DISTRIBUTORS GROUP	ICP-ANACOM-01/2011- SP	25.05.2010	Sending of correspondence, including addressed publicity; Books, catalogues, newspapers and other periodicals, on a national and international basis.

Source: ICP-ANACOM

⁽¹⁾ The concessionaire of the universal postal service (CTT) may operate non-reserved postal services not encompassed by the US, with waiver of additional authorizing title.

 ⁽²⁾ On 1 September 2003 ANACOM authorized the transmission of the licence held by POSTEXPRESSO - Correio de Cidade, Lda. to POSTLOG - Serviços Postais e Logística, S.A which, after 4Q04, has been designated CTTexpresso - Serviços Postais e Logística, S.A.

Company	Authorisation no.	Issue date
CTT Expresso – Serviços Postais e Logística, S.A. (1)	ICP-01/2001-SP	01.10.2001
DHL – Express Portugal, Lda.	ICP-03/2001-SP	13.12.2001
CHRONOPOST PORTUGAL – Transporte Expresso Internacional, S.A.	ICP-04/2001-SP	13.12.2001
TNT Express Worldwide (Portugal) – Transitários, Transportes, e Serviços Complementares, S.A.	ICP-05/2001-SP	13.12.2001
UPS OF PORTUGAL – Transportes Internacionais de Mercadorias, Lda.	ICP-ANACOM-01/2002-SP	17.10.2002
RANGEL EXPRESSO, S.A.	ICP-ANACOM-02/2002-SP	19.12.2002
FEDERAL EXPRESS CORPORATION – Sucursal em Portugal	ICP-ANACOM-01/2003-SP	10.04.2003
IBERCOURIER - Serviço de Transporte Urgente, Lda. (MRW) (2)	ICP-ANACOM-01/2005-SP	09.02.2005
LOGISTA – Transportes, Transitários e Pharma, Unipessoal, Lda.	ICP-ANACOM-02/2005-SP	09.05.2005
LISESPO Transportes, Lda. (4)	ICP-ANACOM-03/2005-SP	15.07.2005
TRANSWORLD EXPRESS – Correio Expresso, Lda. (3)	ICP-ANACOM-06/2005-SP	08.09.2005
GLOBE LOGISTICS – Empresa de Courier, Logística e Transportes (3)	ICP-ANACOM-08/2005-SP	07.10.2005
FOZPOST – Entrega e Recolha de Encomendas, Lda. (3)	ICP-ANACOM-09/2005-SP	07.10.2005
RANEXPRESS – Transportes Rodoviários, Lda. (3)	ICP-ANACOM-11/2005-SP	07.10.2005
FRANCISCO & SILVINA – Transportes de Documentos e Encomendas, Lda. (3)	ICP-ANACOM-13/2005-SP	07.10.2005
MAILGLOBE – Transporte de Correio Urgente, Lda. (3)	ICP-ANACOM-14/2005-SP	07.10.2005
EXPRESSODÃO – Transporte de Mercadorias, Lda. (3)	ICP-ANACOM-16/2005-SP	07.10.2005
FOXIL – Gestão de Transportes, Lda. (3)	ICP-ANACOM-17/2005-SP	07.10.2005
Transportes ANTÓNIO GARCIA & CÉSAR, Lda. (3)	ICP-ANACOM-18/2005-SP	07.10.2005
P.P. EXPRESSO – Transportes de Mercadorias, Lda. (3)	ICP-ANACOM-19/2005-SP	07.10.2005
JÁESTÁ – Tráfego e Serviços Logísticos, Lda. (3)	ICP-ANACOM-21/2005-SP	07.10.2005
MULTITAGUS – Transportes e Serviços, Lda. (3)	ICP-ANACOM-22/2005-SP	27.09.2005
PRINCEPS, Comércio por Grosso, Lda. (3)	ICP-ANACOM-24/2005-SP	04.11.2005
PORTOMAIL – Transporte de Documentos e Encomendas, Lda. (3)	ICP-ANACOM-25/2005-SP	04.11.2005
FELCOURIER – Distribuição de Encomendas Nacional e Internacional, Lda. (3)	ICP-ANACOM-02/2006-SP	02.02.2006
HMJ – Envio Rápido de Encomendas, Lda. (3)	ICP-ANACOM-03/2006-SP	02.02.2006
FLASH Transportes Unipessoal, Lda. (3)	ICP-ANACOM-04/2006-SP	02.02.2006
Transportes OCHÔA, S.A.	ICP-ANACOM-05/2006-SP	02.02.2006
LHSTUR – Transportes Urgentes, Estafetagem, Lda. (3)	ICP-ANACOM-06/2006-SP	07.02.2006
CONSIGO PELO MUNDO – Transporte e Entrega de Documentos, Unipessoal, Lda. (3)	ICP-ANACOM-07/2006-SP	07.02.2006
ABAFTSROTA – Transportes, Lda. (5)	ICP-ANACOM-01/2007-SP	12.10.2007
TRANSALCAINÇA – Transportes, Lda. (5)	ICP-ANACOM-02/2007-SP	12.10.2007
ANTÓNIO MOREIRA Unipessoal, Lda. (5)	ICP-ANACOM-03/2007-SP	12.10.2007
PALMILHAR TRILHOS – Transportes, Unipessoal, Lda. (5)	ICP-ANACOM-05/2007-SP	12.10.2007
OBIK EXPRESS – Serviço de transportes, Unipessoal, Lda. (5)	ICP-ANACOM-06/2007-SP	12.10.2007
OVERSPEEDTransportes de correio expresso, Lda. (5)	ICP-ANACOM-08/2007-SP	12.10.2007
URBEXPRESS - Transportes expresso, Lda. (5)	ICP-ANACOM-10/2007-SP	12.10.2007

Company	Authorisation no.	Issue date
VASTA SELECÇÃO - Comércio e serviços, Lda. (5)	ICP-ANACOM-12/2007-SP	12.10.2007
MENDES & PEREIRA SOUSA, Lda. (5)	ICP-ANACOM-13/2007-SP	23.11.2007
JOAQUIM LUIZ MARTHA, Lda. (5)	ICP-ANACOM-14/2007-SP	23.11.2007
ATLANTILÉGUA - Serviços postais, Lda. (5)	ICP-ANACOM-15/2007-SP	23.11.2007
JOSÉ MANUEL ARAÚJO SILVA - Serviço de Transporte Urgente, Unipessoal, Lda. (3)	ICP-ANACOM-17/2007-SP	27.12.2007
TOTALMÉDIA - Entregas ao domicílio, S.A.	ICP-ANACOM-02/2008-SP	22.01.2008
MANOBRA JOVEM - Transportes, Lda. (5)	ICP-ANACOM-03/2008-SP	12.03.2008
VIANICLE - Unipessoal, Lda. (5)	ICP-ANACOM-04/2008-SP	27.03.2008
LEVADO À LETRA - Transportes e Serviços, Lda. (3)	ICP-ANACOM-06/2008-SP	14.03.2008
ADICIONAL - distribuição e gestão comercial, S.A.	ICP-ANACOM-07/2008-SP	18.06.2008
SERVIÇOS POSTAIS DA LEZÍRIA, Unipessoal, Lda. (5)	ICP-ANACOM-08/2008-SP	14.07.2008
IBERPERÍMETRO, Lda. (5)	ICP-ANACOM-09/2008-SP	28.08.2008
ATLANTICOURIER - Transporte e entrega de documentos Unipessoal, Lda.	ICP-ANACOM-01/2009-SP	02.03.2009
CARGA COMPATÍVEL UNIPESSOAL, Lda. (5)	ICP-ANACOM-02/2009-SP	26.05.2009
Linexpress, serviços expresso, Lda. (5)	ICP-ANACOM-03/2009-SP	30.05.2009
Polientrega, Lda. (3)	ICP-ANACOM-04/2009-SP	30.10.2009
Rangel Expresso II, S.A.	ICP-ANACOM-05/2009-SP	20.11.2009
GIGANTEXPRESS UNIPESSOAL, Lda (7)	ICP-ANACOM-01/2011-SP	17.03.2011
NUNO ELBLING GOMES DA COSTA (7)	ICP-ANACOM-02/2011-SP	01.08.2011
BYALYK SERVICE, Unipessoal, Lda	ICP-ANACOM-03/2011-SP	26.10.2011
KY SUL - Courier Express, Unipessoal, Lda	ICP-ANACOM-04/2011-SP	09.11.2011
TORRESTIR INTERNATIONAL COURIER, Lda	ICP-ANACOM-05/2011-SP	16.10.2011
A SUA PRESSA - Recolha, Entrega e Distribuição de Mercadorias, Unipessoal, Lda.	ICP-ANACOM-01/2011-SP	09.03.2011
AUGUSTO JOSÉ CONCHA ENCARNADO, Unipessoal, Lda.	ICP-ANACOM-02/2011-SP	23.03.2011
VASP PREMIUM - Entrega Personalizada de Publicações, Lda.	ICP-ANACOM-03/2011-SP	21.09.2011

Source: ICP-ANACOM

- (1) On 1 September 2003 ANACOM authorized the transmission of the licence held by POSTEXPRESSO - Correio de Cidade, Lda. to POSTLOG – Serviços Postais e Logística, S.A which, after 4Q04, has been designated CTT Expresso – Serviços Postais e Logística, S.A.
- (2) The MRW brand is the property of the company IBERCOURIER.
- (3) Companies providing postal services under the MRW brand through franchising.
- (4) Companies providing postal services under the SEUR brand through franchising.
- (5) Companies providing postal services under the NACEX brand through franchising.
- (6) The Nacex brand is the property of the company Logista.
- (7) Companies providing postal services under the Envialia urgente brand through franchising.

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