

# Market Review of Electronic Communications & Postal Services 2017



**EETT**

HELLENIC TELECOMMUNICATIONS & POST COMMISSION

Table of Contents

## Summary

### (a) Electronic communications

During 2017, the key figures of the domestic telecommunications market remained stable or exhibited a slightly positive growth compared to last year. However, the implementation of investment plans and especially of the Vectoring Regulation is expected to benefit the consumers in many ways, namely in the form of more and better electronic communications services. Competition among bundled offers was further intensified based on high-speed broadband access, mobile broadband and pay TV services. The contribution of the industry's turnover to Greece's Gross Domestic Product (GDP) ranged at 2.8% in 2017, slightly reduced compared to 2016 since the GDP's growth was higher than the respective one of the telecommunications' sector (2% versus 0.2%).

#### Financial data

For the third consecutive year the turnover of the telecommunications industry remained over 5 billion euros with the revenues from telecommunication services constituting its most significant segment (88%). The total investment made by the electronic communications providers decreased by approximately 12% (corresponding to 20% of the total industry's turnover), with an even distribution between fixed and mobile networks (53% versus 47%). The focus of these investments was mainly the telecommunications infrastructure as well as services for licensing and rights of use. The earnings before interest, tax, depreciation and amortization (EBITDA) for the major fixed and mobile operators increased by 6% compared to 2016.

### Fixed communications

The marginal growth of the telephone lines' number persisted this year as well, attaining a 44.2% penetration rate on population. Conversely, fixed telephony traffic decreased by 4.5% mainly due to the shorter duration of national calls to fixed phones and international calls. Despite the fact that OTE is still the incumbent operator with a 55.5% share of the telephony lines, its traffic share is much lower at about 45.7%.

Retail revenues from the provision of telephony and Internet services at a fixed location amounted to 1.4 billion euros, marking a marginal decrease compared to last year with OTE' relative share estimated at 61% for 2017. Revenues from Internet services exhibit a continuous growth (8% increase compared to 2016) thus neutralizing the declining course of the fixed telephony retail revenues. The average monthly revenue from providing telephony and Internet services at a fixed location stood at 24.7 euros (compared to 24.75 euros in 2016) and the respective revenue from stand-alone telephony services was 18.43 euros (compared to 18.94 euros in 2016).

### Mobile communications

In 2017, the number of mobile phone connections reached 16.2 million registering a 1.5% increase compared to 2016 while active connections increased comparatively more (3.2%) amounting to 13 million. As regards the share of Mobile Telephony Operators (MTOs) in total number of connections, the shares of COSMOTE and WIND increased reaching 46.3% and 22.4% respectively, while on the other hand VODAFONE's share

decreased to 30.9% (compared to 35.3% in 2016). In terms of active connections, COSMOTE's share is in the range of [45%-55%], followed by VODAFONE with a range of [25%-35%].

The use of mobile phone networks has been characterized by the slight increase of the domestic voice minutes, the significant reduction of the SMS volume and the spectacular increase in the use of data services. The volume of voice calls marked a 2% increase compared to last year, while 59% of these calls were on-net (compared to 62% in 2016). The total volume of SMS dropped again by 20.6% (2.4 versus 3 billion SMS in 2016). Furthermore in 2017, mobile phone data services reached a total of 98 billion MB registering an impressive increase of 108%. Finally, the mobile retail revenues (post-paid and pre-paid) increased marginally by 0.1% amounting to 1.6 billion euros. The average annual revenue per user (post-paid and pre-paid) stood at 278 and 53 euros respectively.

### Broadband

At the end of 2017, the fixed broadband lines increased by 4.9% reaching 3,795,410. Notably, the fixed broadband penetration in the general population, having registered a slightly higher growth rate compared to the European one, namely 1.2% versus 1.1% respectively, reached 33.9% (June 2017<sup>1</sup>), marginally exceeding the European average. Local Loop Unbundling (LLU) lines reached 2.1 million. At the same time, 12.1% of the total broadband lines were VDSL lines.

On the contrary and as far as mobile broadband penetration is concerned, Greece has a 59.1% penetration rate (June 2017<sup>2</sup>) and is ranked among the lowest EU member states. However, there is significant room for improvement, taking into consideration that the 4G population coverage percentage is almost the same as the 3G one (98% versus 99.6%) and that the majority of the Internet traffic was for the first time over 4G networks (56.7% in December of 2017 compared to 32.6% in December of 2016).

### Price Observatory (Pricoscope)

According to the Pricoscope data registered by the telecommunications operators during 2017, the majority of the products pertained to mobile communications (~62%). COSMOTE and WIND laid emphasis on their

add-ons (53% and 56% respectively), while VODAFONE was based primarily on its basic tariff plans (63%). COSMOTE and WIND's tariff plans targeted mainly the residential customers (73% and 78% respectively), while VODAFONE's tariff plans were relatively balanced among business customers (38%), residential customers (35%) and finally a 27% to all customers. The majority of the post-paid mobile plans (~51%) consisted of a monthly rental up to 60 euros (on average 41 euros compared to 26 euros in 2016) and a call allowance of about 550 minutes (compared to 360 minutes in 2016).

### (b) Postal services

In 2017, the Greek postal market moved upward in terms of revenues, while the volume of postal items fell for yet another year, due to the decline in letter mail.

Specifically, revenue grew slightly by 0.4% compared to 2016, reaching 549.4 million euros, derived from the handling of 356.2 million items, 5.4% less than previous year.

In 2017, the Universal Service Provider's (USP) revenue share dropped to 36% from 38% in 2016, while the share of courier companies increased to 61% from 59% in the previous year. The share of companies with an Individual License remained stable at 3%. The share of parcels-small packages continued to grow in 2017 in terms of volume (12% share) as well as revenue (45% share).

Domestic postal item delivery (90% of total volume) was the largest share of Greek postal market revenue (67%). It's worth noting that the majority of postal items were delivered from Attica (78%) and Macedonia (8%) to domestic and international destinations. Regarding international activities, the largest volume of postal items delivered in Greece from international destinations were from the European Union (EU) (58%) and Asia (29%), while the deliveries of postal items to international destinations were mainly sent to the EU (67%) and the USA-Canada (12%).

In 2017, ten companies with Individual License operated in the Universal Service sector, besides the USP, which held 9% of revenue and 13% of volume of the US sector. Letters are undoubtedly the dominant postal item of the US sector, since they represent 89.5% of handled postal items, accounting for 85.4% of the sector's revenue.

In 2017, 79 new companies entered the courier services

1. At the end of 2017, the respective figure was 35.2% (against 33.3% at the end of 2016).

2. At the end of 2017, the respective figure was 65.7% (against 55.2% at the end of 2016).

sector, thus increasing the total number of companies under General Authorization to 543. 43% of postal items handled by courier services companies were letters and 57% were parcels-small packages. Letters

generated significantly less revenue (31%) than parcels-small packages (69%). The activity in the small packages sector was also noteworthy.

# 1. Electronic communications

## 1.1. The greek electronic communications market

Taking into consideration the categorization of the electronic communications' activities of the new General Authorization Regulation<sup>3</sup>, the number of licensed providers that operated or were eligible to operate in the main electronic communications market sectors increased to 942 against 700 in 2016 (Chart 1.1) with almost half of those (49.5%) rendering services in the fields of broadband access/access to Internet and voice telephony and fixed network development. As of the second quarter of 2017, there have been six<sup>4</sup> mobile and fixed telephony operators in Greece (out of which, five were engaged in fixed telephony and four in mobile telephony) (Table 1.1).

The sector's turnover increased marginally staying above 5 billion euros, while its contribution in Greece's Gross Domestic Product (GDP)<sup>5</sup> ranged at 2.8% in 2017, slightly reduced compared to 2016, since GDP's annual growth stood at 2% while for the telecommunications' sector was 0.2% (Chart 1.2). It should be mentioned that for the 2007-2017 period, the weighted average GDP reduction was -2.4% and -5.3% for the telecommunications' revenues, which by itself demonstrates the impact the economic crisis had on the sector.

The number of employees in the electronic communications stood at 17.1 thousands increased by 1.8% compared to 2016 (approximately 16.8 thousand) (Chart 1.3).

Lastly, the general cost trend for electronic communications services is reflected in the Consumer Price Index (CPI) over time, as presented in Charts 1.4 and 1.5. The Communication Sub-Index continued on its increasing

trend due to the fee levied on the fixed telephony and/or access to Internet services in January 2017 in the aftermath of the one levied on pay TV in June 2016, while the same applies for the CPI as well that peaked again after four declining years. According to ELSTAT<sup>6</sup> (Hellenic Statistical Authority), the communications weight coefficient in the total household expenditure used for calculating the CPI may have decreased to 41.86 from 42.74 in 2016; however, the consumption expenditure for the purchase of specific telecommunications services as part of the total household expenditure is still considerable.

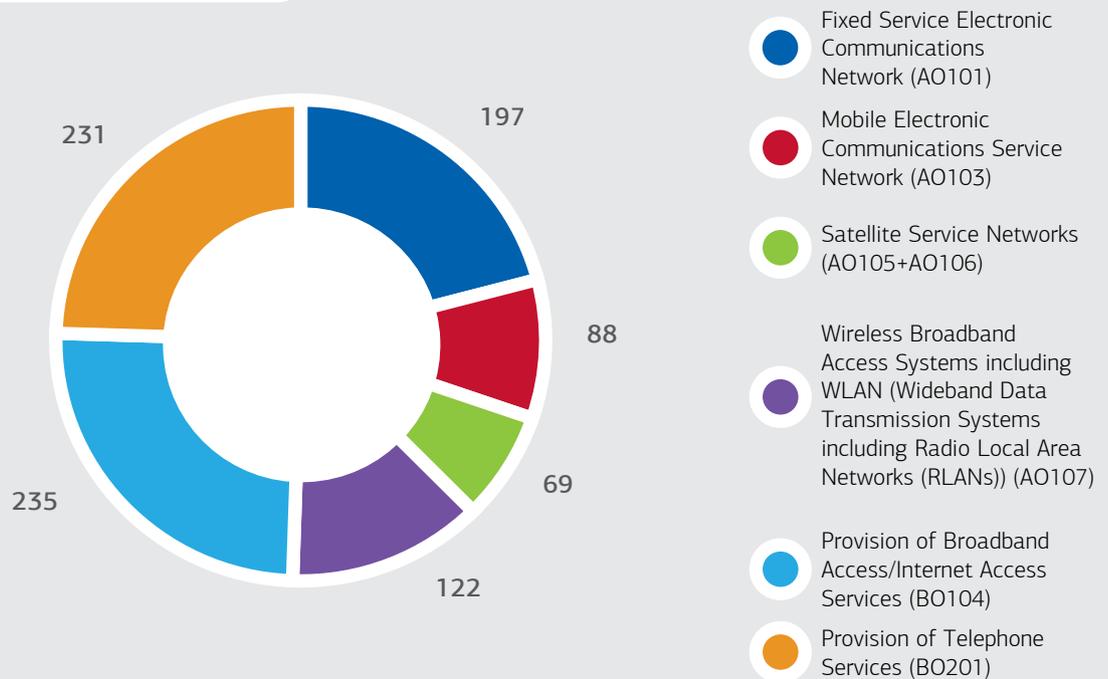
3. EETT's Decision 834/002/09-11-2017 (GG 4262/B/06-12-2017).

4. As of 2009, WIND, (after acquiring TELLAS) operates in the fields of both fixed and mobile telephony and consequently is listed under both categories. As of 2014, the same applies for CYTA by operating also as a Mobile Virtual Network Operator (MVNO) as well as for VODAFONE, which acquired HOL (HELLAS ON LINE) on 01-04-2016.

5. It is noted that the GDP data and its components for the period 1995-2017 have been revised with 2010 as a base year, in accordance with the Regulation EU 549/2013 of the European Union (ESA 2010).

6. Single Integrated Metadata Structure (SIMS) (January 2017-) [http://www.statistics.gr/el/statistics/-/publication/DKT87/-](http://www.statistics.gr/el/statistics/-/publication/DKT87/)

Chart 1.1: Licensed operators (2017)



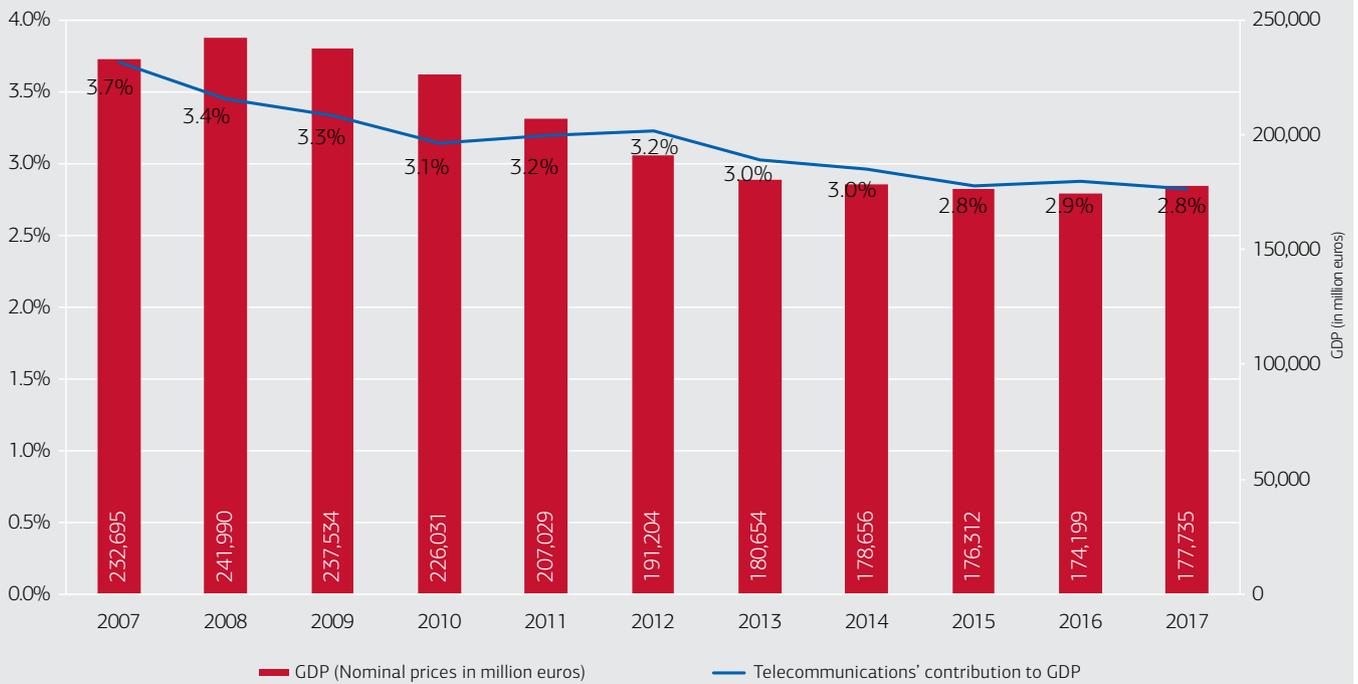
Source: EETT (based on operators' statements in EETT registry)

Table 1.1: Active fixed and mobile operators

Operators	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Fixed telephony	14	14	11	11	11	9	8	8	6	5	5
Mobile telephony	4	3	3	3	3	3	3	4	4	4	4

Source: EETT

Chart 1.2: Telecommunications' contribution to GDP



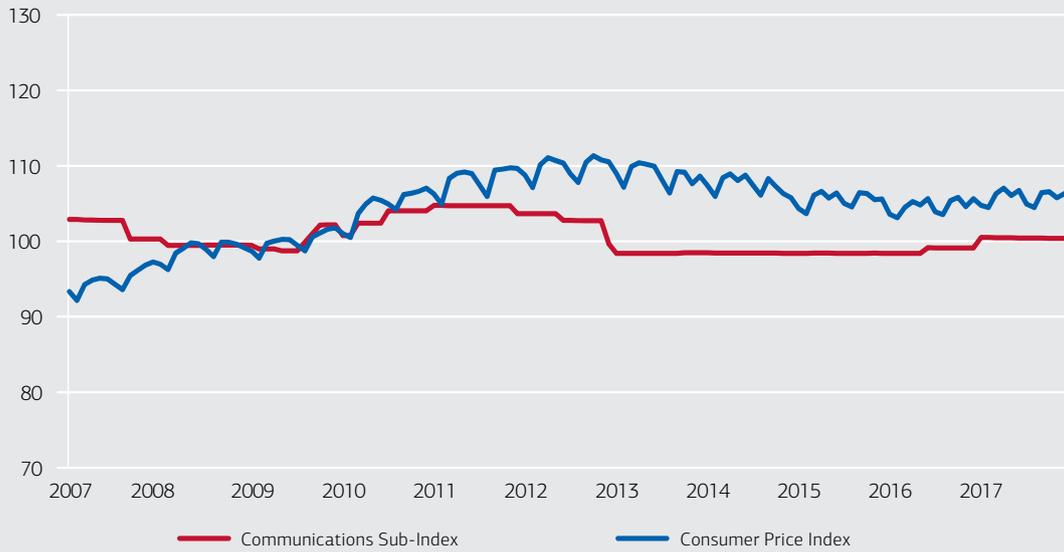
Source: EETT (based on questionnaires) &amp; ELSTAT

Chart 1.3: Number of personnel



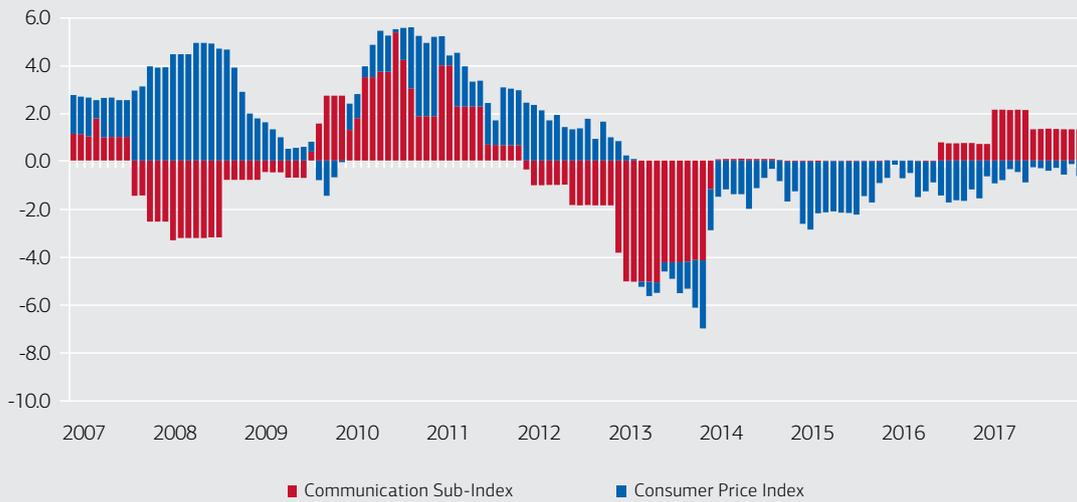
Source: EETT (based on data provided by the licensed operators)

Chart 1.4: Progress of the monthly Consumer Price Index (General Index-Communications Sub-Index)



Source: EETT (based on ELSTAT data)

Chart 1.5: Variation of the monthly Consumer Price Index over time



Source: EETT (based on ELSTAT data)

## 1.2. Electronic communications market key figures

### 1.2.1. Financial data

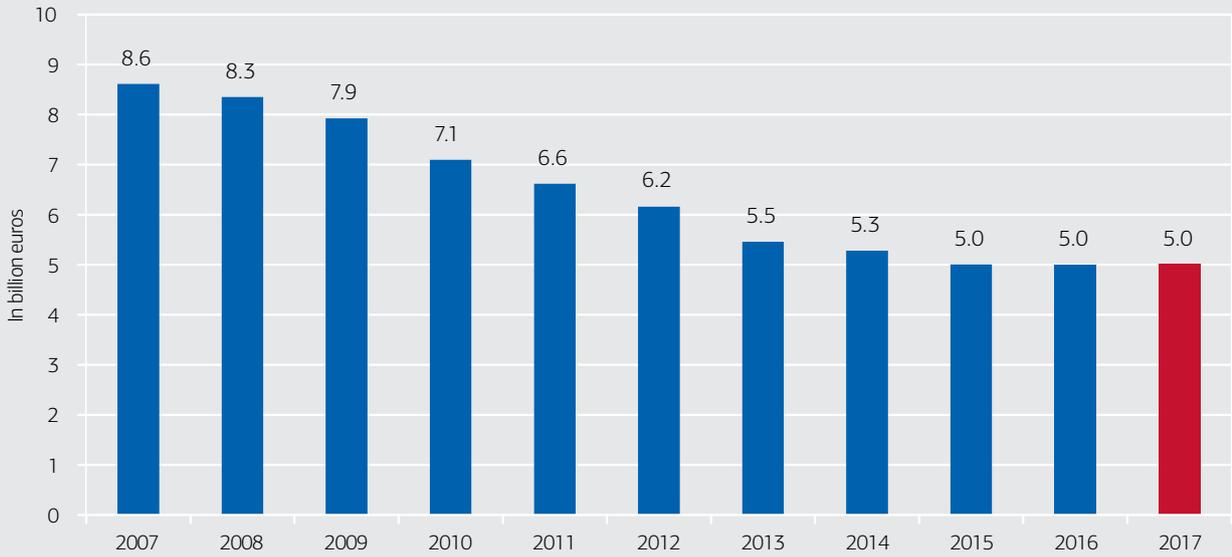
The electronic communications market key financials are presented in this section, taking into consideration the data that EETT collects from licensed providers on a half-yearly basis, in terms of turnover, investments etc. In this context, revenues concerning fixed and mobile communications, telecommunication equipment and pay TV from active licensed providers with an annual turnover over 150 thousand euros are listed.

- The telecommunications' sector turnover improved marginally in 2017 amounting to 5 billion euros (a 0.2% increase compared to 2016) (Chart 1.6). OTE's turnover increased by 1%, mainly due the revenue increase from broadband services (increase of broadband lines by 7.4%) and pay TV services (increase of television subscribers by 4.2%) (Chart 1.7).
- The telecommunications services revenue is the predominant part of turnover (88%) (Chart 1.8), while the pay TV revenue's share decreased marginally to 5.1% (against 5.3% in 2016).
- The fixed communications services revenue constitutes the 54.2% of the telecommunications services revenues (Chart 1.9). It includes both retail revenue from telecommunications services (telephony and Internet including access in the phone network, leased lines etc.) and wholesale revenue (e.g. interconnection, wholesale access in the Local Loop Unbundling (LLU)). Respectively, the revenue from mobile communications services includes retail revenue from voice and mobile phone data services, as well as wholesale interconnection revenues, roaming etc.
- Retail revenue from telephony and Internet services is about 75.6% of the total revenues from fixed networks followed by the revenue from wholesale access services with 9.5% (Chart 1.10). As far as the mobile networks and services are concerned, the retail revenues from voice and data services were the vast majority with 65% and 22% respectively (Chart 1.11).
- Total investment made by the electronic communications operators (Chart 1.12) declined about 11.8%, amounting near to 1 billion euros and constituted 19.9% of the sector's total turnover, mainly due to the increased investments from the three large operators (OTE Group, VODAFONE, WIND) both in fixed (Fiber to the Home-FTTH) and mobile networks. Consequently, investments in fixed networks for 2017 were about 53% of the total investments made and the rest 47% was invested in mobile networks.
- For 2017, the electronic communications operators invested heavily in telecommunications' infrastructure and in services for licensing and/or rights of use (Chart 1.13)
- The turnover's weighted average decrease during the period 2010-2017 was almost identical to that of 2016

(about -6.7%). At the same time, investments returned to a weighted average decrease of -1.4% (Chart 1.14). Consequently, for the same period, the weighted average decrease of OTE's revenue was -6.1%, however its investment figure rose by 12.1% on average.

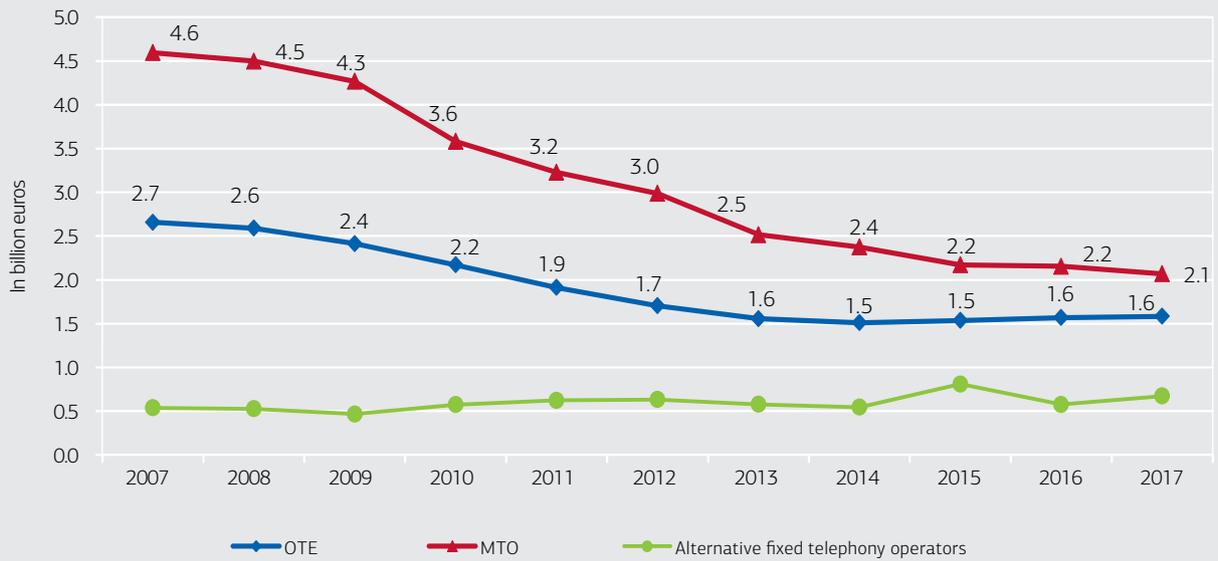
- The investments made by the largest fixed and mobile operators ranged between 5% and 30% of their total turnover from electronic communications services (Chart 1.15).
- For the largest fixed and mobile operators, Earnings Before Interest, Taxes, Depreciation and Amortization (EBITDA) increased by 6% compared to 2016. It should be acknowledged that compared to 2008 and taking into consideration the effects of mergers and acquisitions, EBITDA seems to be gradually recovering during the recent years, amounting to 1.4 billion euros compared to almost 2 billion euros that was in 2008 (Chart 1.16).

Chart 1.6: Electronic communications' operators turnover



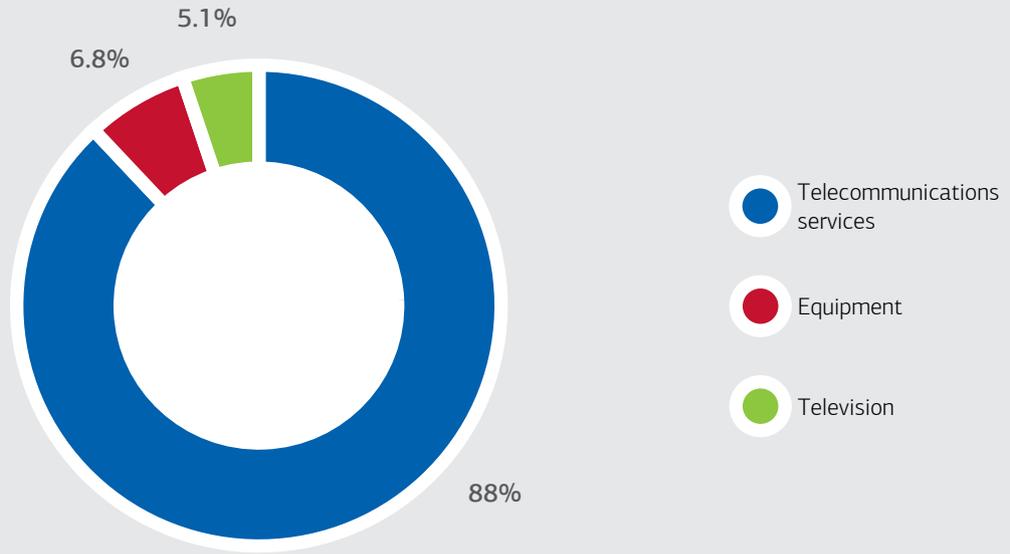
Source: EETT (based on data provided by the licensed operators)

Chart 1.7: Fixed & mobile telephony companies' turnover



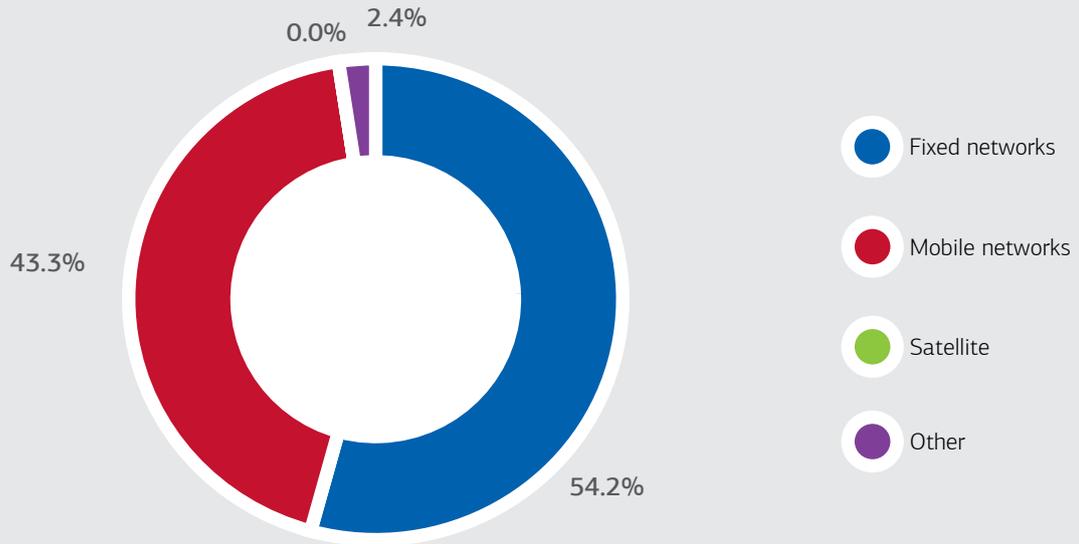
Source: EETT (based on data provided by the licensed operators)

Chart 1.8: Turnover breakdown



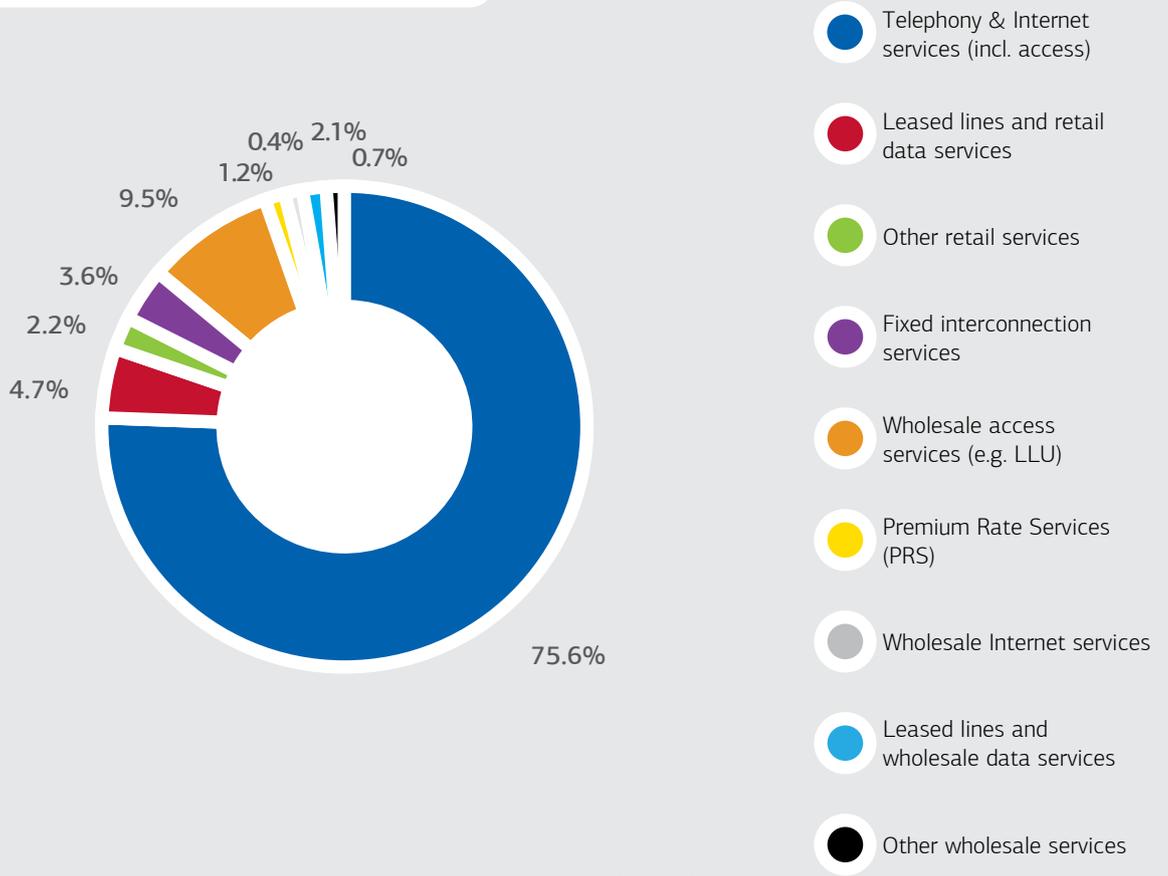
Source: EETT (based on data provided by the licensed operators)

Chart 1.9: Telecommunications services breakdown



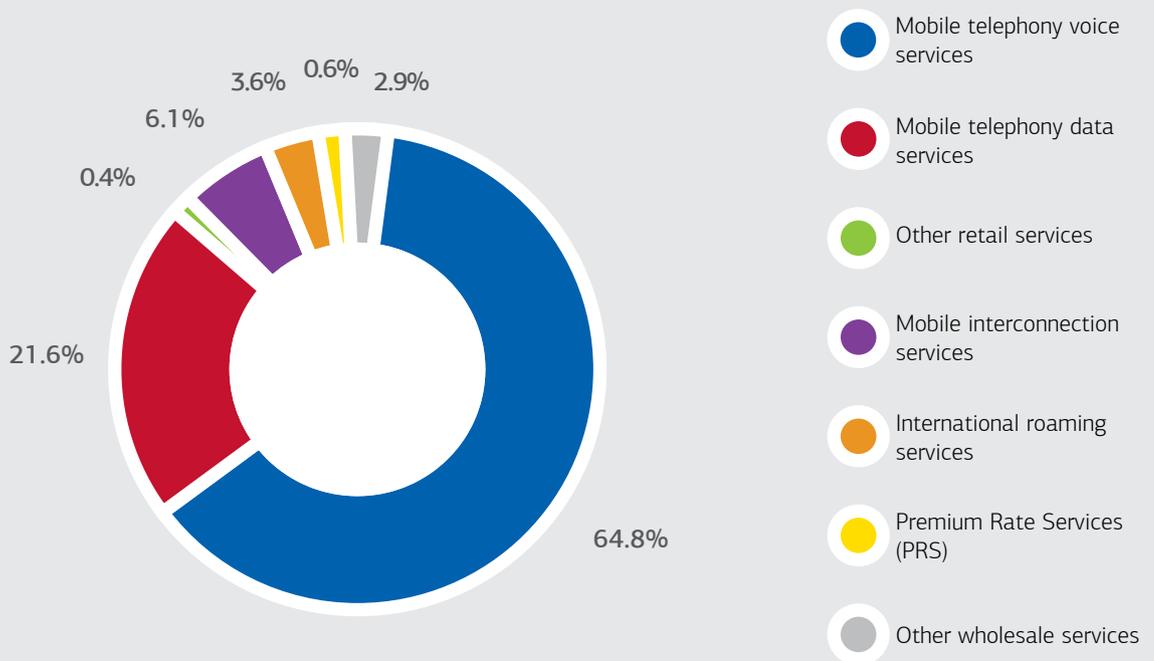
Source: EETT (based on data provided by the licensed operators)

Chart 1.10: Fixed networks revenues breakdown



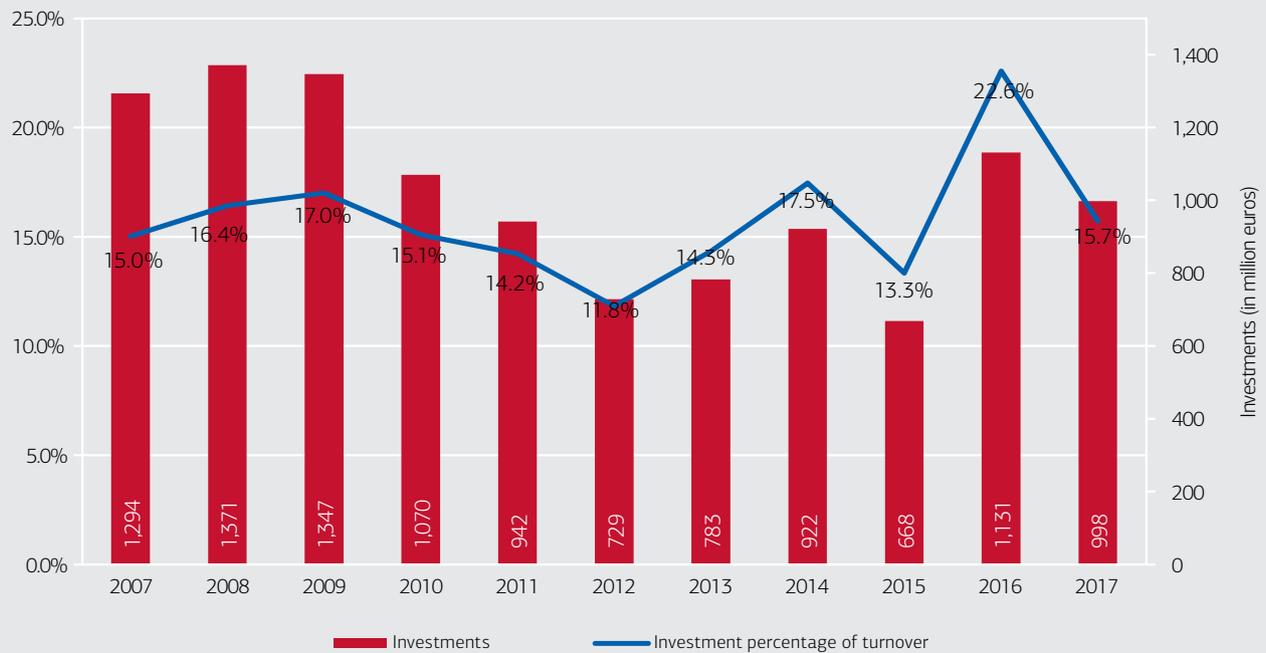
Source: EETT (based on data provided by the licensed operators)

Chart 1.11: Mobile networks revenues breakdown



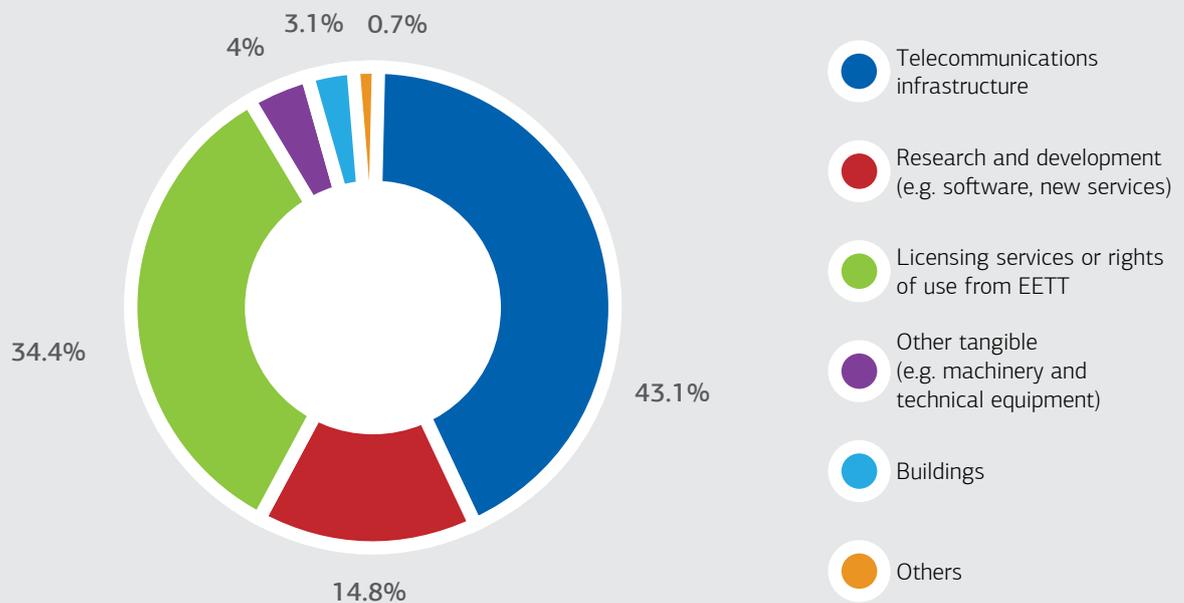
Source: EETT (based on data provided by the licensed operators)

Chart 1.12: Electronic communications operators' investments



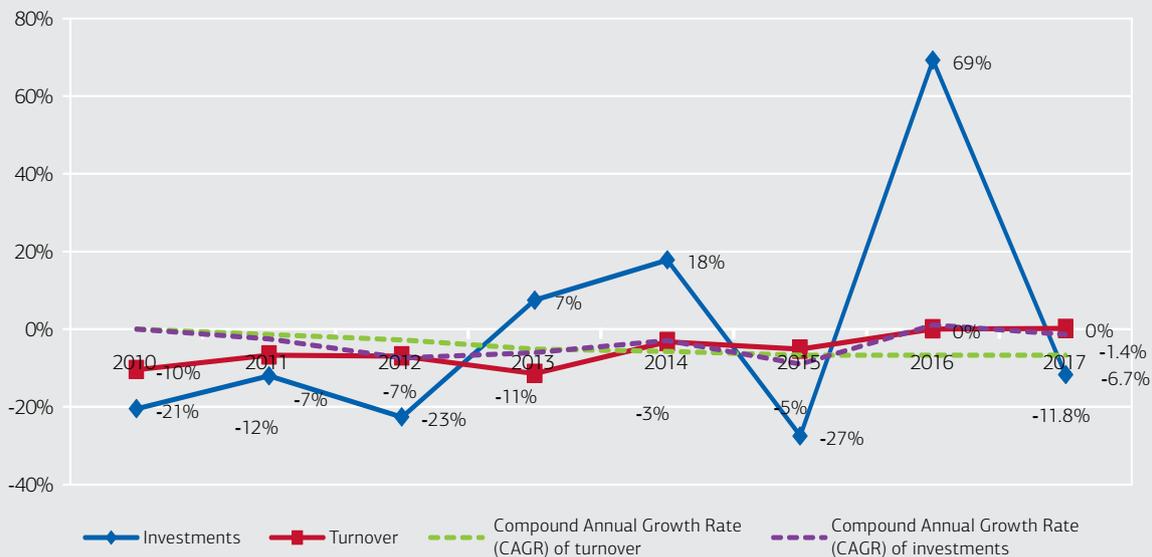
Source: EETT (based on data provided by the licensed operators)

Chart 1.13: Electronic communications operators' investment breakdown (2017)



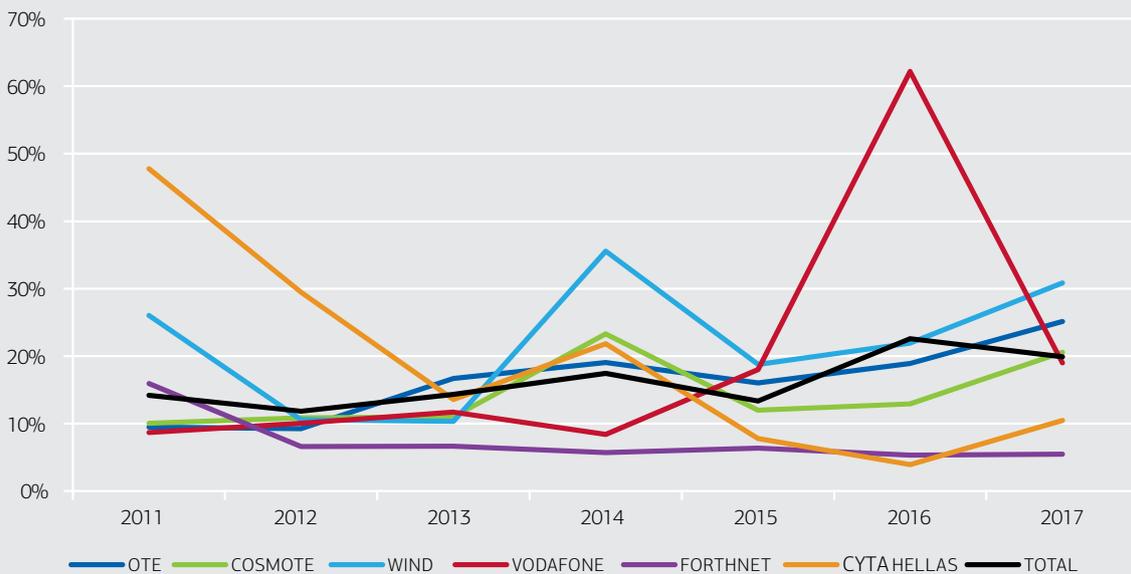
Source: EETT (based on data provided by the licensed operators)

Chart 1.14: Rate of change of investment-turnover



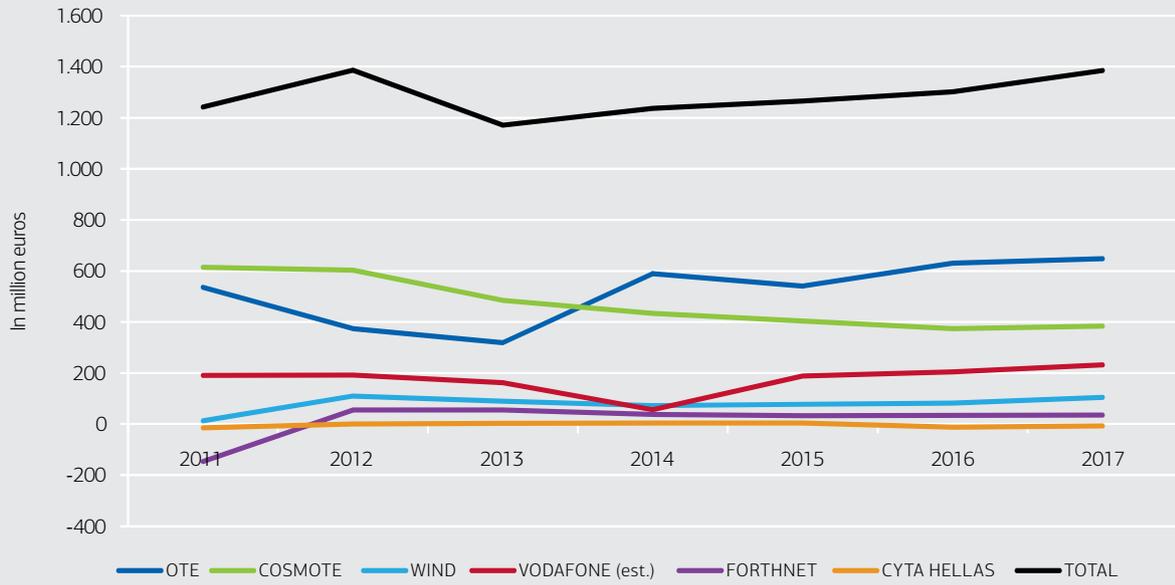
Source: EETT (based on data provided by the licensed operators)

Chart 1.15: Investments/turnover ratio



Source: EETT (based on data provided by the licensed operators)

Chart 1.16: Earnings Before Interest, Tax, Depreciation and Amortization



Source: EETT (based on data provided by the licensed operators)

## 1.2.2. Communications services provided at a fixed location<sup>7</sup>

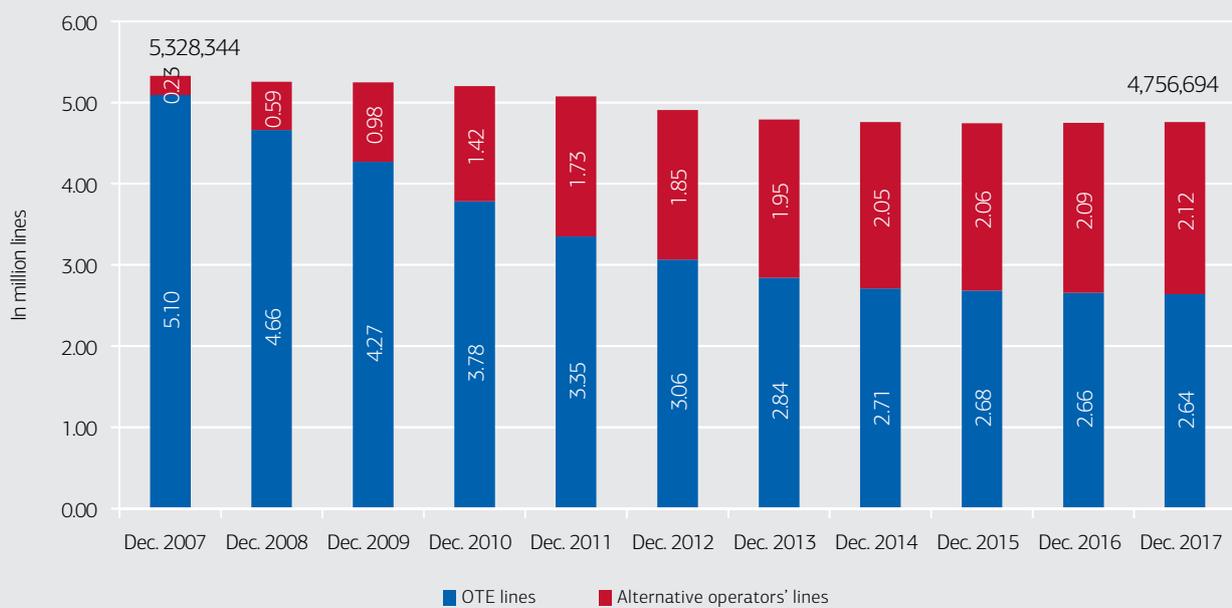
### Access and subscriptions

In December 2017, the access lines to the public telephone network at a fixed location raised to 4,756,694, i.e. a 44.2% penetration rate based on population, compared to 4,750,488 in December 2016, registering for a second year in a row a marginal increase (0.1%) compared to last year (Chart 1.17).

OTE's telephone lines were decreased by 18,792 lines, at a much slower rate (-0.7%) however compared to last year (minus 26,467 lines in 2016). Its share dropped at 55.5% at the end of 2017 compared to 56% at the end

of 2016. It's worth mentioning that 44% of OTE's lines are Managed VoIP lines, almost twice as much as that of last year's (23% in 2016) suggesting the ongoing shift of OTE's subscribers to telephony services rendered over IP vis-à-vis the traditional PSTN telephony (Chart 1.18). The lines of alternative operators increased slightly by 1.2% (24,998 lines in 2017 compared to 33,597 lines during 2016), thus gaining a 44.5% market share versus 44% at the end of 2016.

Chart 1.17: Telephone lines progress



Source: EETT (based on data provided by the licensed operators)

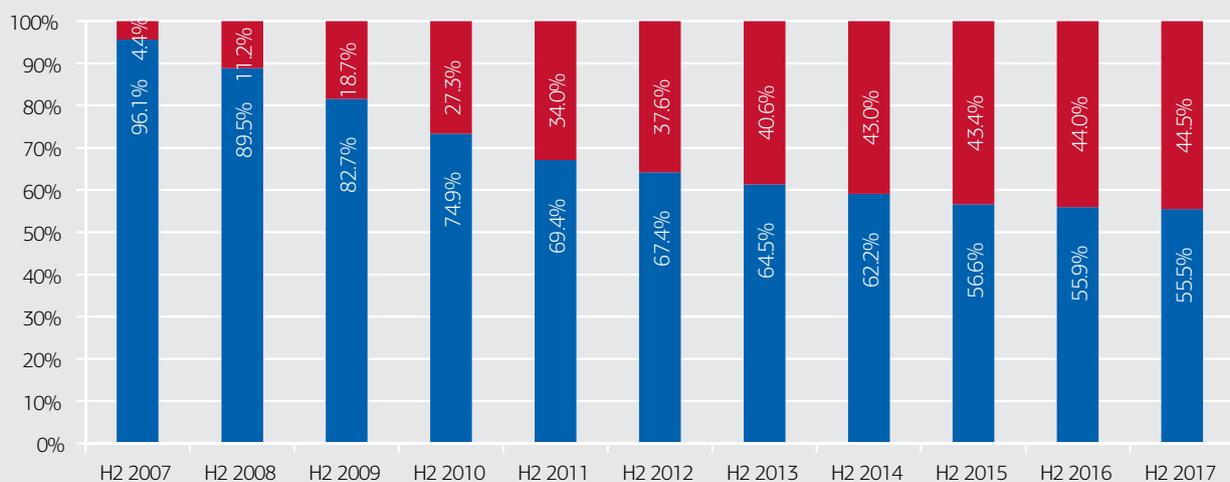
7. It shall be clarified that all the data presented refers to services provided to subscribers, therefore the pre-paid telephony services are exempted.

Table 1.2: Telephone lines progress

	OTE lines					Alternative operators' lines					Total lines
	PSTN	ISDN BRA	Managed VoIP	ISDN PRA	Total	PSTN and ISDN BRA-not incl. Wholesale Line Rental	PSTN and ISDN BRA-via Wholesale Line Rental	Managed VoIP	ISDN PRA	Total	
Dec. 2007	4,509,564	579,533	-	6,185	5,095,282	205,707	-	26,875	480	233,062	5,328,344
Dec. 2008	4,110,102	548,388	-	5,971	4,664,461	547,242	-	41,992	681	589,915	5,254,376
Dec. 2009	3,744,759	517,337	-	5,677	4,267,773	848,354	42,405	89,524	695	980,978	5,248,751
Dec. 2010	3,306,469	473,183	-	5,259	3,784,911	1,191,665	71,883	154,833	747	1,419,128	5,204,039
Dec. 2011	2,917,578	426,830	-	4,808	3,349,216	1,395,486	82,091	246,697	1,820	1,726,094	5,075,310
Dec. 2012	2,670,296	387,692	-	4,320	3,062,308	1,415,564	63,964	364,288	2,791	1,846,607	4,908,915
Dec. 2013	2,484,926	354,655	-	3,791	2,843,372	1,516,775	47,082	380,420	3,025	1,947,302	4,790,674
Dec. 2014	2,377,849	330,034	-	3,499	2,711,382	1,612,296	35,325	396,306	2,962	2,046,889	4,758,271
Dec. 2015	2,298,569	303,791	78,789	3,242	2,684,391	1,651,635	14,344	390,189	2,799	2,058,967	4,743,358
Dec. 2016	1,782,963	262,449	609,443	3,069	2,657,924	1,706,449	9,386	374,609	2,120	2,092,564	4,750,488
Dec. 2017	1,244,008	230,309	1,161,912	2,903	2,639,132	1,754,020	7,746	353,490	2,306	2,117,562	4,756,694

Source: EETT

Chart 1.18: Market shares based on the total number of access lines (at the end of the semester)



H representing: Semester

■ OTE ■ Alternative operators

Source: EETT (based on data provided by the licensed operators)

## Retail outgoing traffic

The fixed telephony traffic kept on declining during 2017, registering a 4.5% drop mainly due to the reduction in the duration of national fixed calls (minus 600 million minutes from 2016) as well as of the international calls (a 19.4% reduction compared to 2016). Total traffic amounted to 15.8 billion minutes versus 16.5 billion minutes in 2016. The increased duration of outgoing fixed to mobile calls persisted at a slower level however (2.1% in 2017 against 3.2% in 2016). In any case during the last five years the duration of the basic call types constitutes 98% of the duration of all call types (Charts 1.19 1.20 and 1.21).

As to the percentage distribution of the basic call types, 83% is national fixed calls same as in 2016, 15% is calls to mobile phones and the remaining 2% pertains to international calls. The data about the traffic evolution per call type is presented in Table 1.3.

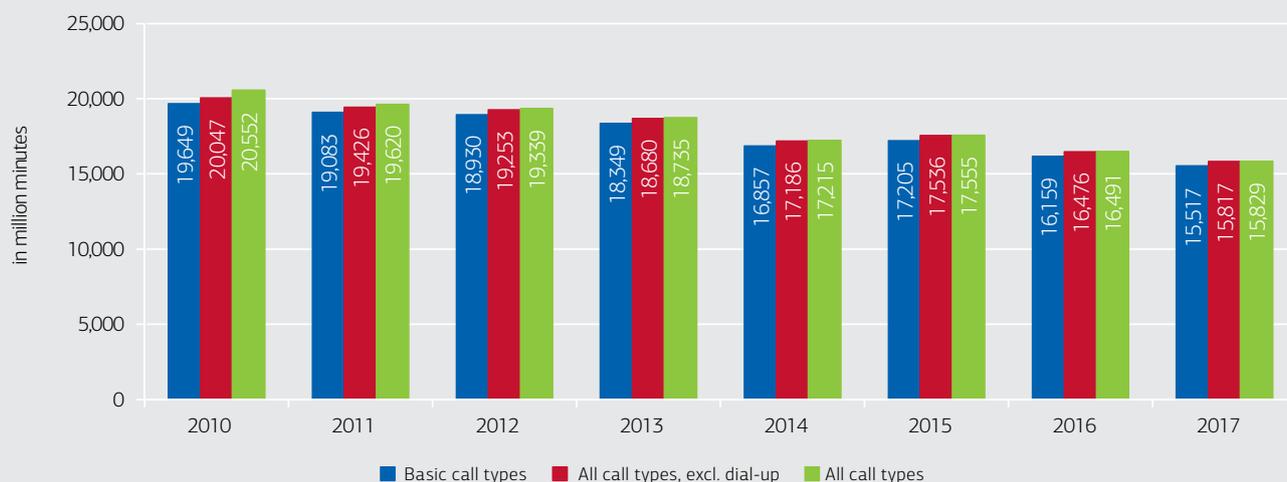
OTE's traffic share improved slightly in 2017, less than a percentage point (compared to 2016) and is now estimated at 45.7% of the total traffic and at 45.4% of the basic call types' traffic thus compensating for the last year's reduction. It is worth mentioning the fall that OTE has seen in its fixed to mobile outgoing traffic share, since over the period 2010-2017 it has lost almost 44% of it (Charts 1.22 and 1.23).

The domestic market for communications at a fixed location is characterized by high concentration, since OTE and another four operators, after the acquisition of HELLAS ON LINE in 2016, cumulatively possess 99.5% of it. These operators are: CYTA, FORTHNET, VODAFONE and WIND (Chart 1.24).

Chart 1.25 presents the distribution of total traffic over time (excl. dial-up calls) among OTE and the alternative operators. As it has already been mentioned, the fixed telephony traffic decreased by 4.5% compared to 2016. The alternative operators had the biggest fall by 5% while OTE covered its losses by registering a 2.7% decrease (compared to 7.5% in 2016).

The average duration of the basic call types was 271.85 minutes per month and per connection against 283.45 in 2016.

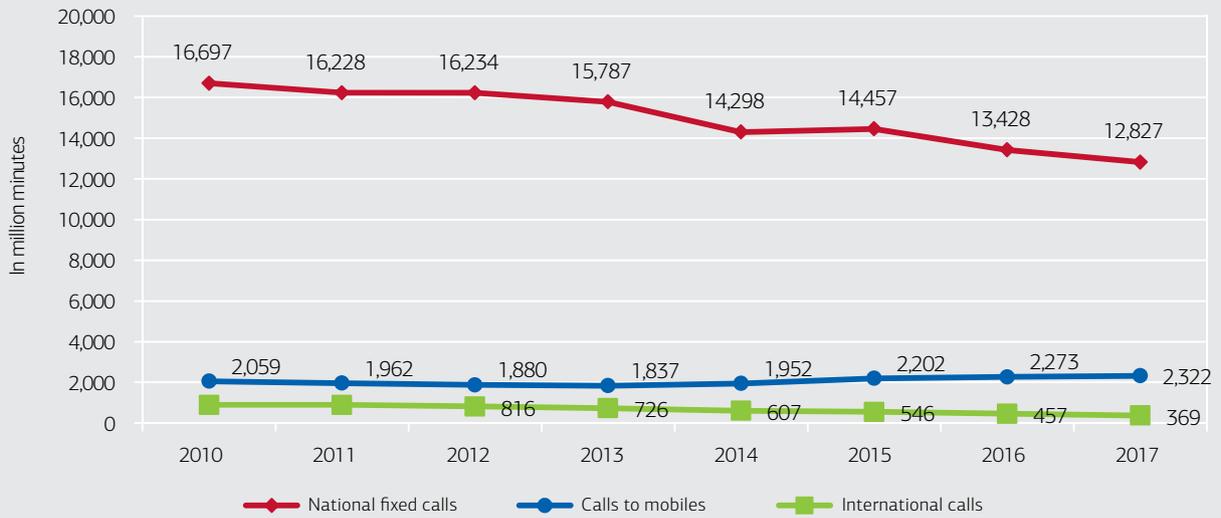
Chart 1.19: Evolution of fixed outgoing traffic



Source: EETT (based on data provided by the licensed operators)

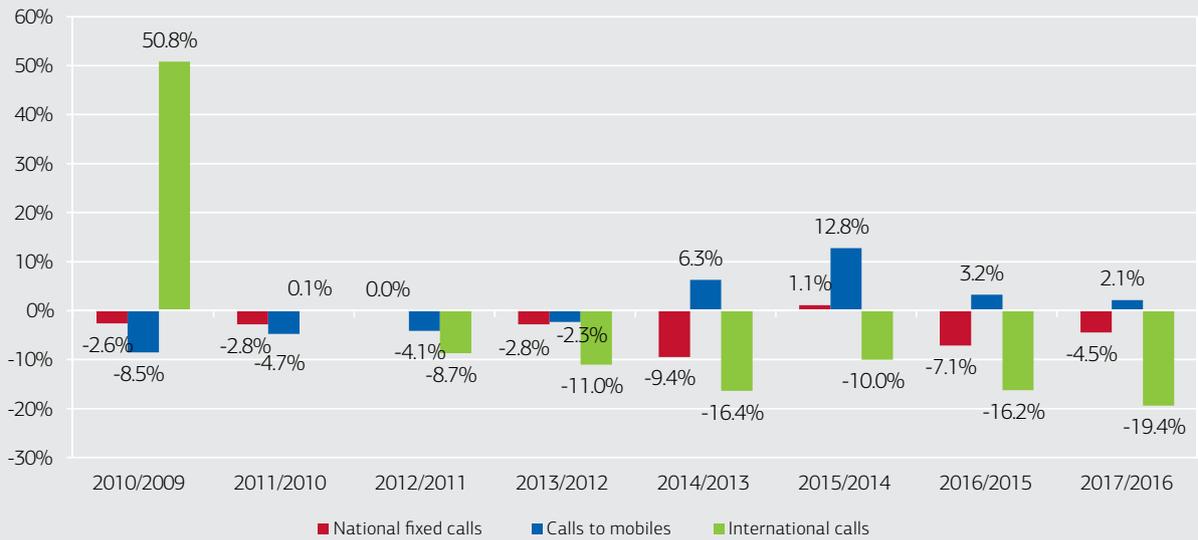
Note: The basic call types include national fixed calls (e.g. local and national calls), calls to mobiles and international calls.

Chart 1.20: Fixed outgoing traffic for the basic call types



Source: EETT (based on data provided by the licensed operators)

Chart 1.21: Annual change of fixed outgoing traffic



Source: EETT (based on data provided by the licensed operators)

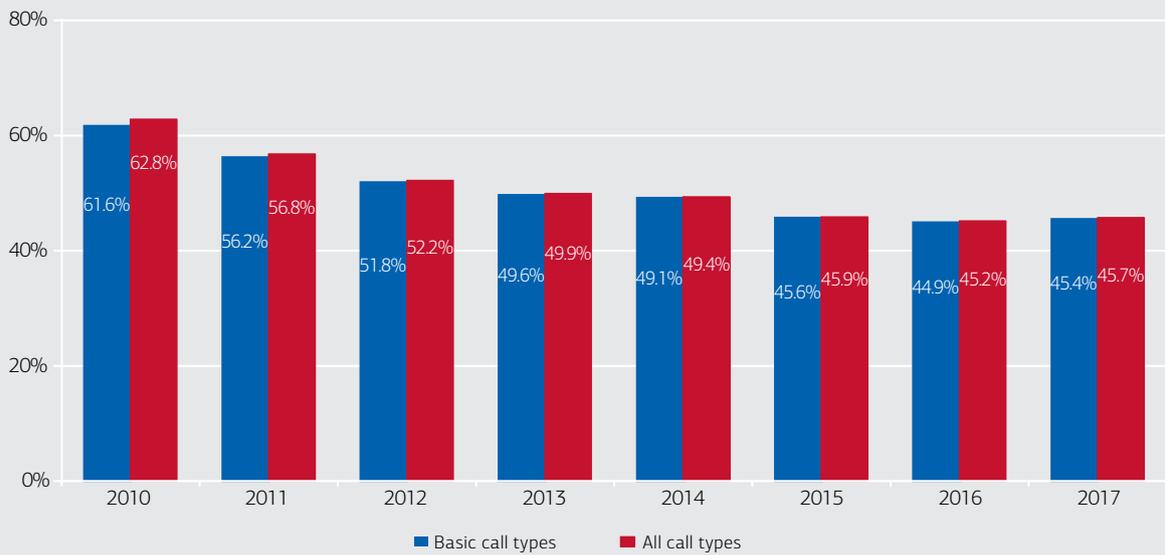
Table 1.3: Volume per call type (in million minutes)

Call types		2010	2011	2012	2013	2014	2015	2016	2017
Basic call types	National fixed calls	16,697	16,228	16,234	15,787	14,298	14,457	13,428	12,827
	Calls to mobiles	2,059	1,962	1,880	1,837	1,952	2,202	2,273	2,322
	International calls	893	894	816	726	607	546	457	369
Other call types	Dial-up calls	505	194	86	55	29	19	15	12
	Calls to personal numbers (series 70)	0.05	0.13	0.13	0.14	0.14	not available	not available	not available
	Calls to FreePhone numbers (series 800)	24	23	23	26	31			
	Calls to shared cost services (Shared cost-801)	77	52	35	33	31	58	54	51
	Calls to short code services (3-digits, 4-digits, 5-digits) See Note 1	236	225	220	219	229	238	230	221
	Calls to value added services See Note 2	61	43	45	53	37	35	34	28
Basic call types		19,649	19,083	18,930	18,349	16,857	17,205	16,159	15,517
All call types excl. dial up		20,047	19,426	19,253	18,680	17,186	17,536	16,476	15,817
All call types		20,552	19,620	19,339	18,735	17,215	17,555	16,491	15,829

Note 1: Up to 2009, calls to short code services include short codes for value added services. Since 2010 they do not include them.

Note 2: Up to 2009, calls to value added services refer only to the code 90 calls. Since 2010, they refer to all the value added services, including short codes for value added services.

Chart 1.22: OTE's annual market shares (based on the outgoing traffic)



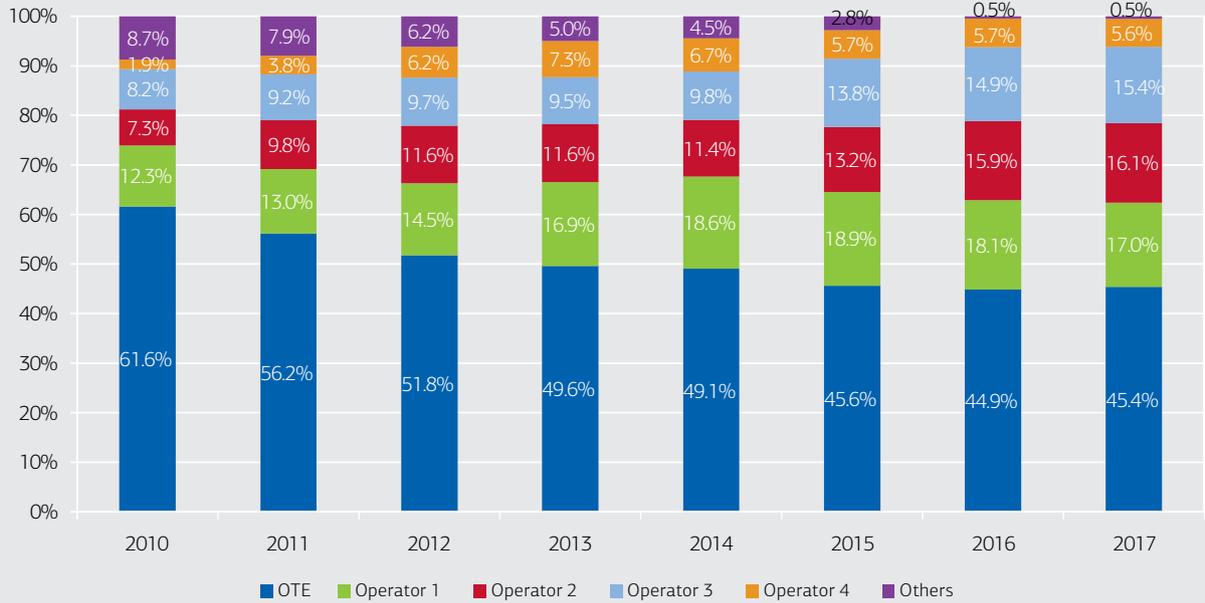
Source: EETT (based on data provided by the licensed operators)

Chart 1.23: OTE's market shares per basic call type (based on traffic)



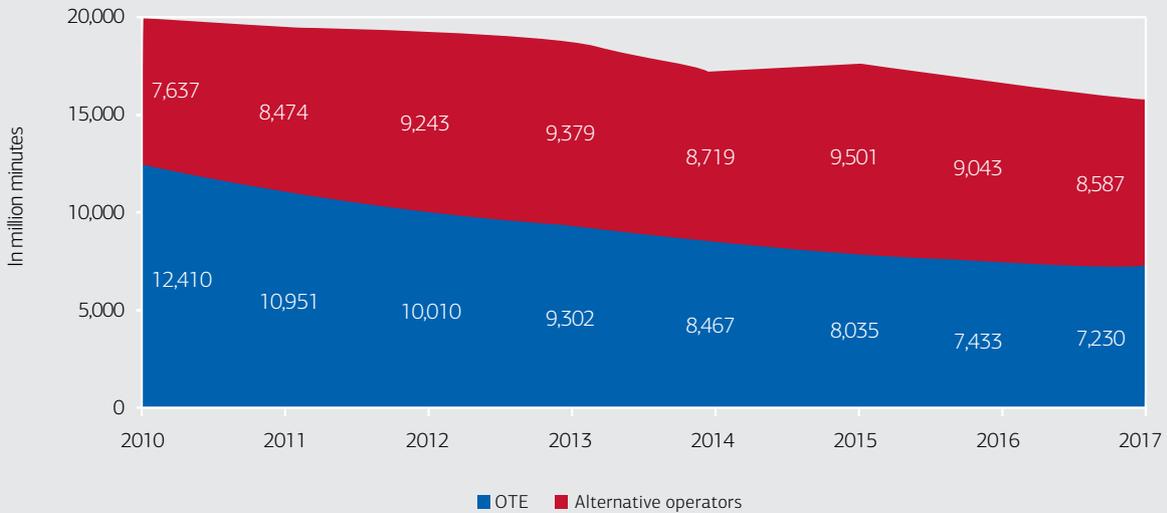
Source: EETT (based on data provided by the licensed operators)

Chart 1.24: Market shares of the basic call types (based on traffic)



Source: EETT (based on data provided by the licensed operators)

Chart 1.25: Outgoing traffic for OTE and other operators (excl. dial-up)



Source: EETT (based on data provided by the licensed operators)

### Retail revenues from telephony and internet services at a fixed location<sup>8</sup>

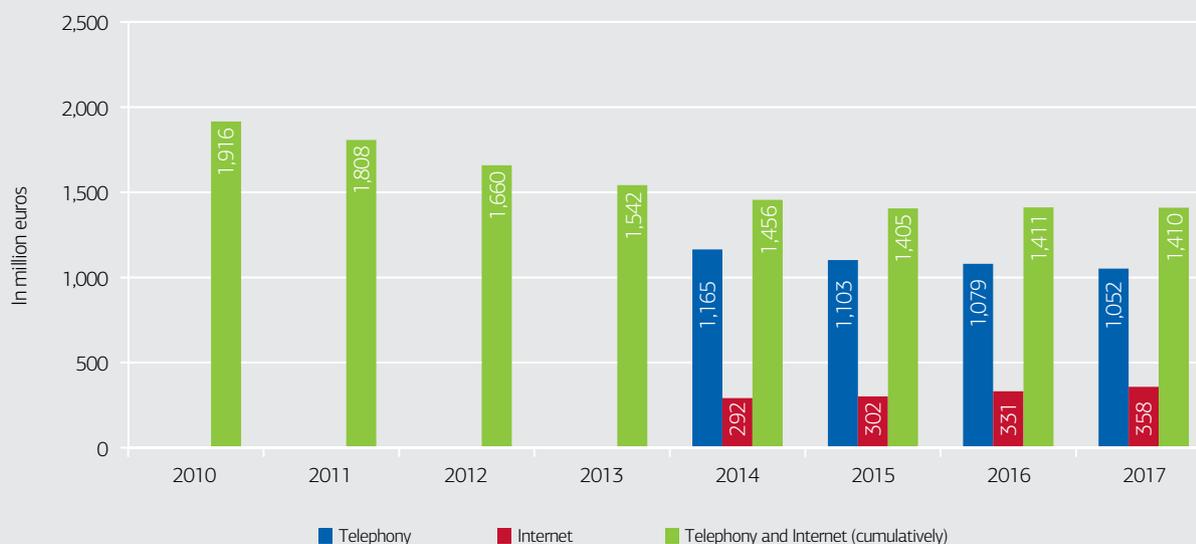
In 2017, retail revenues from providing telephony and internet services at a fixed location amounted to 1.41 billion euros, marginally decreased by 0.06% compared to 2016 (Chart 1.26). Despite the fact that the retail revenues from telephony services at a fixed location dropped by 27.4 million euros, i.e. a 2.5% fall compared to last year, the retail internet services climbed up by 8% compared to 2016 and amounted to 357.8 million euros. It should be mentioned that the presented revenues are prior to any returns to third parties and that the telephony services include revenues both from access<sup>9</sup> and as well as from all call types<sup>10</sup>.

The average monthly revenue from providing telephony and internet services at a fixed location was 24.70 euros in 2017 compared to 24.75 euros in 2016, while just from telephony services the respective revenue was 18.43 euro (against

18.94 euros in 2016). The average revenue per minute of outgoing traffic to all call types was 0.066 euros increased by 1.54% compared to 2016 (0.065 euro).

During the last six years, OTE's market share on the retail revenues from telephony and internet services at a fixed location remained relatively stable (about 61%) (Chart 1.27). As was the case for the whole market and compared to 2016, the 2.6% decrease of the retail revenues from telephony services at a fixed location was offset by the 7.1% increase of the internet revenues. Table 1.4 presents the market shares of the operators that provide telephony and internet services at a fixed location as of 2017 with WIND climbing up one position (3<sup>rd</sup>) and consequently FORTHNET dropping to 4<sup>th</sup>.

Chart 1.26: Retail revenues from telephony and Internet services at a fixed location



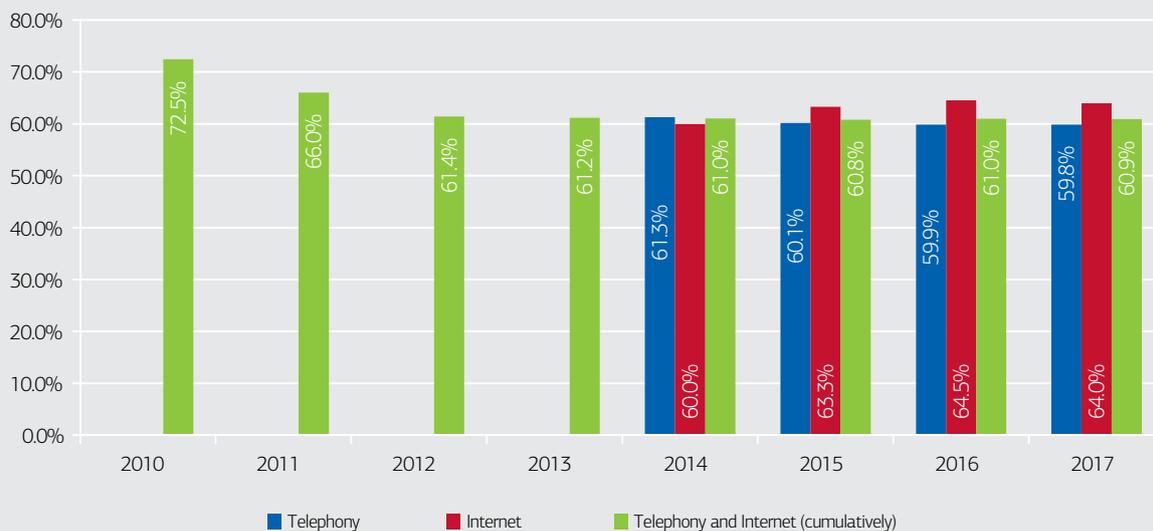
Source: EETT (based on data provided by the licensed operators)

8. It shall be clarified that all the data presented refers to services provided to subscribers; therefore the pre-paid telephony services are exempted.

9. Such as the initial connection/installation fee etc., the monthly rental for accessing telephony services and revenues from additional facilities.

10. It is noted that the presented data and more specifically the breakdown of the revenues among telephony and Internet is based on assumptions made by most of the operators.

**Chart 1.27: OTE's market shares (based on the retail revenues from telephony and Internet services at a fixed location)**



Source: EETT (based on data provided by ELSTAT)

**Table 1.4: Market shares of operators that provide telephony and Internet services at a fixed location**

Dec. 2017	
OTE	~61%
VODAFONE	10%-15%
WIND	10%-15%
FORTHNET	5%-10%
CYTA	5%-10%
Others	0%-5%

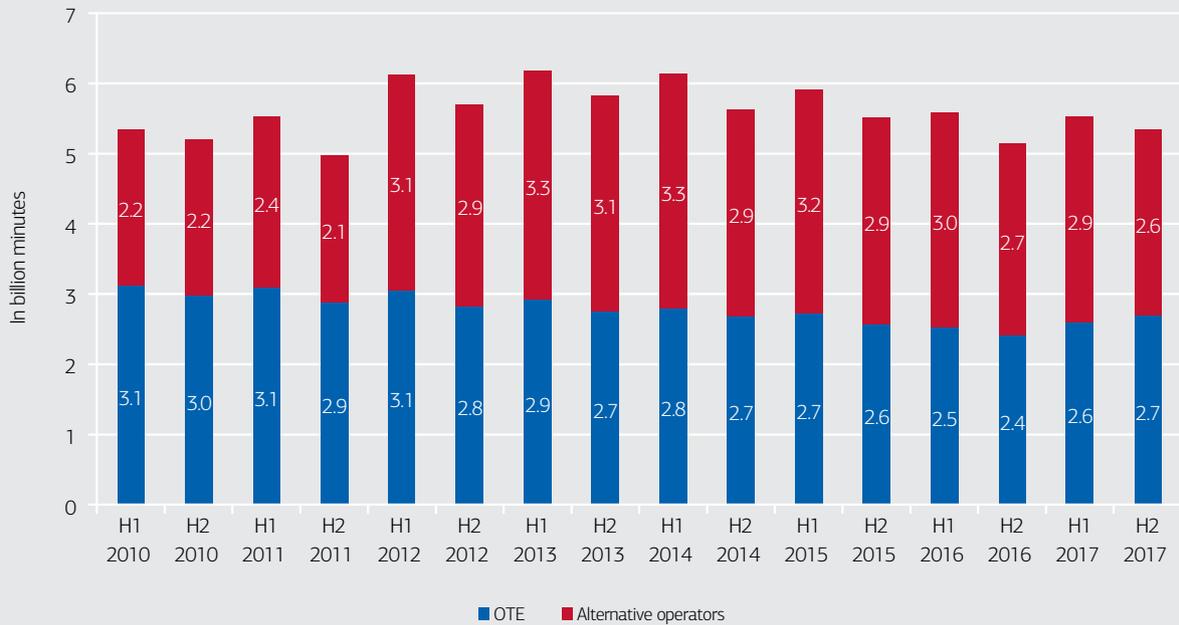
Source: EETT

### Fixed telephony interconnection

By the end of 2017, call termination (Chart 1.28) amounted to 5.34 billion minutes, registering a 3.8% increase compared to 2016 (5.15 billion minutes). During 2012-2016, call termination to the fixed telephony networks of the alternative operators is greater than the traffic terminating to OTE's

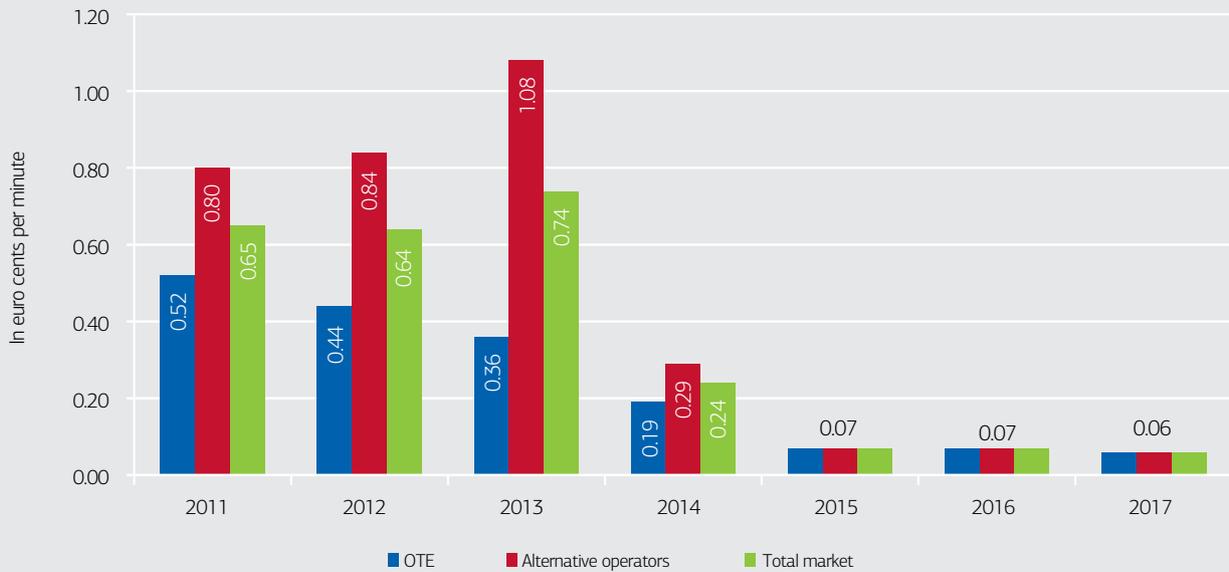
network. In 2017 however, call termination to OTE's network increased by 7% thus exceeding the respective traffic of the alternative operators and increasing its share on the total call termination. The last three years, termination fees for all fixed operators are symmetrical (Chart 1.29).

Chart 1.28: Call termination traffic to fixed telephony networks (OTE-alternative operators)



Source: EETT (based on data provided by the licensed operators)

Chart 1.29: Actual interconnection fees



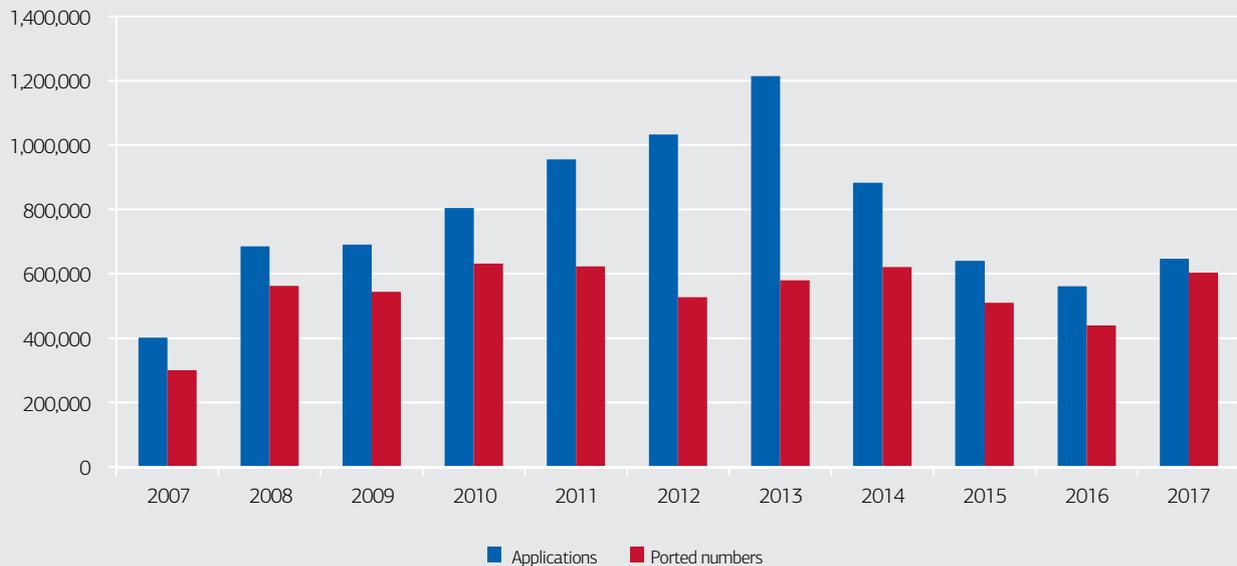
Source: EETT (based on data provided by the licensed operators)

### Number portability for fixed telephony

During 2017, 647,178 applications were submitted compared to 560,908 in 2016, registering a considerable increase by 15.4%. Respectively in 2017, 603,699 numbers were ported,

namely a 37.2% increase compared to 2016 (Chart 1.30). That indicates that approximately 93% of the initial portability applications were seen through.

Chart 1.30: Number portability for fixed telephony



Source: EETT

### 1.2.3. Mobile telephony

#### Connections

At the end of 2017, the total mobile telephony connections<sup>11</sup> amounted to 16.2 million having increased by 1.5% compared to 2016 (15.9 million) while the active mobile connections<sup>12</sup> registered an even bigger increase (3.2%) (Table 1.5 and Chart 1.31).

Both post-paid and pre-paid connections increased slightly compared to 2016. More analytically, post-paid connections rose to 4.3 million (a 1% increase against 2016) while the registered pre-paid connections amounted to 11.9 million (a 1.6% increase compared to 2016) (Table 1.6 and Chart 1.32). Residential users increased by 1.5% at 14.9 million while business users remain stable over time at about 1.25 million (Table 1.7 and Chart 1.33).

11. The term used is "connection" or "subscription" instead of "subscriber". It is not the number of subscribers as individuals or legal entities that is recorded, but the total connections/subscriptions, as one subscriber may possibly have one or more subscriptions / connections.

12. "Active connections" or "active subscriptions" are intended as connections/subscriptions that have generated retail or wholesale revenue within the last quarter.

MTOs' market shares over the total mobile connections varied enough through 2017. The market shares of COSMOTE and WIND increased to 46.3% and 22.4% respectively, compared to 45.6% and 18.7% at the end of 2016. VODAFONE's market share dropped to 30.9% from 35.3% in 2016 (Table 1.8 and Chart 1.34). Now as far as the active connections<sup>13</sup> are concerned, COSMOTE's share is in the range of [45%-

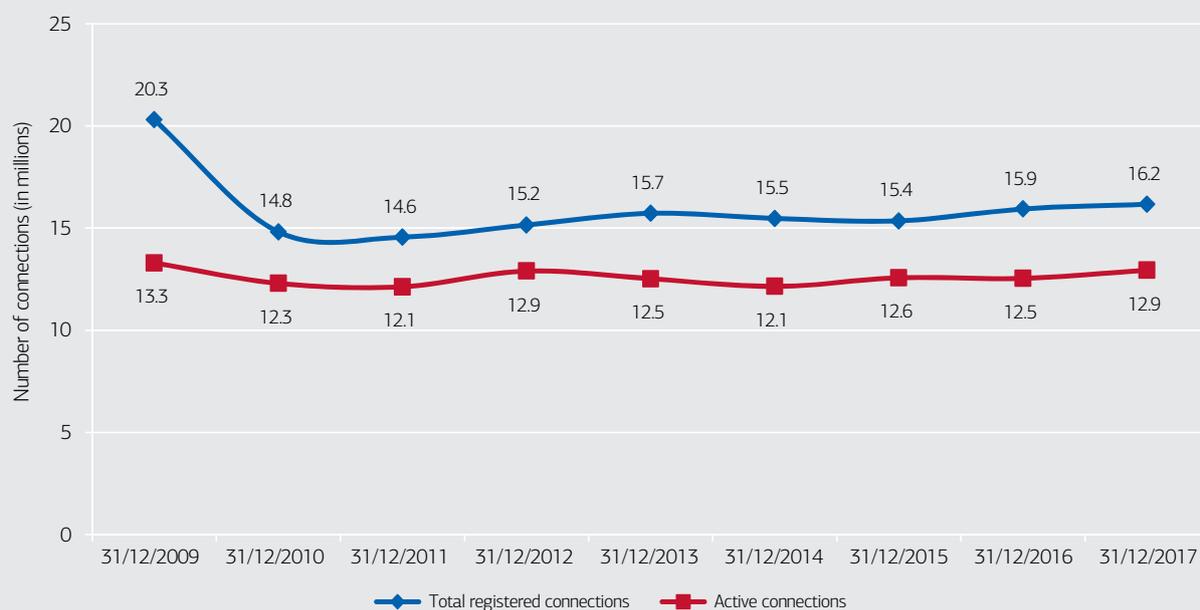
55%] followed by VODAFONE [25%-35%] (Table 1.9). The penetration rate of active mobile connections on Greece's population stood at 120% at the end of 2017 improved by 3.3% compared to 2016 (116%) while the respective rate of total mobile connections was 150% (versus 148% in 2016) (Table 1.10).

**Table 1.5: Total and active mobile telephony connections (excl. datacards)**

Connections	Dec. 2007	Dec. 2008	Dec. 2009	Dec. 2010	Dec. 2011	Dec. 2012	Dec. 2013	Dec. 2014	Dec. 2015	Dec. 2016	Dec. 2017
Registered	16,226,675	18,918,092	20,298,102	14,815,705	14,557,672	15,151,742	15,722,476	15,473,683	15,353,553	15,934,294	16,167,273
Active	12,294,912	13,799,340	13,295,093	12,292,716	12,127,985	12,897,306	12,518,645	12,144,598	12,566,650	12,538,927	12,937,106

Source: EETT (based on data provided by the MTOs)

**Chart 1.31: Connections/subscriptions of mobile telephony (2009-2017)**



Source: EETT (based on data provided by the licensed operators)

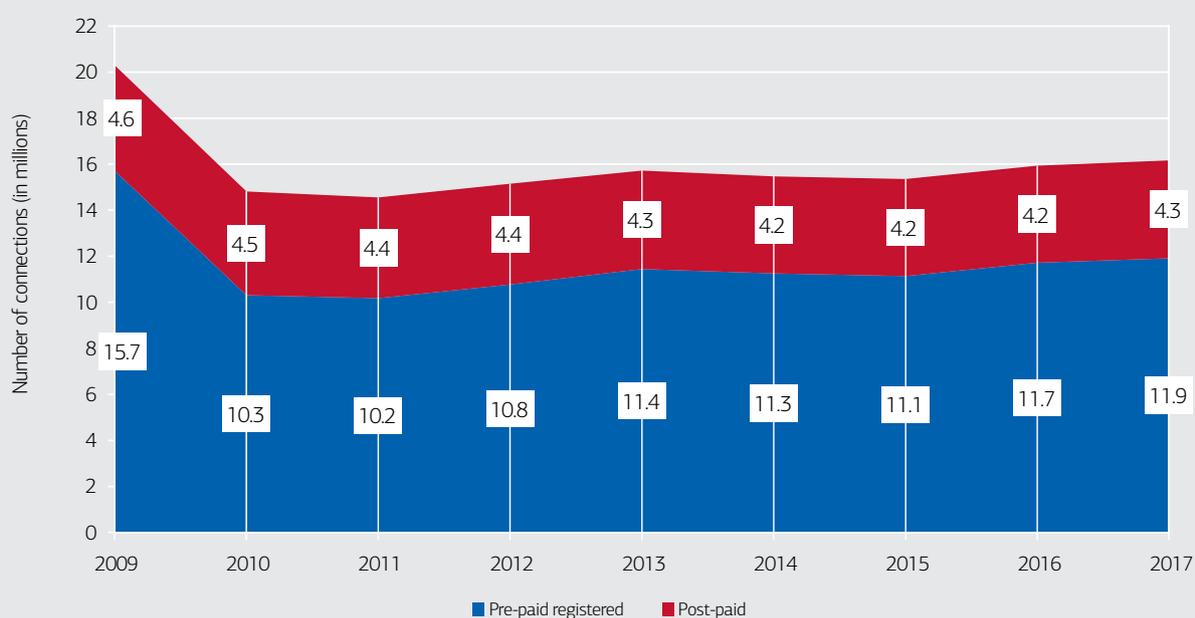
13. The number of active connections and the resulting market shares are confidential data and thus presented as ranges.

Table 1.6: Total post-paid and pre-paid connections

Connections	Dec. 2009	Dec. 2010	Dec. 2011	Dec. 2012	Dec. 2013	Dec. 2014	Dec. 2015	Dec. 2016	Dec. 2017
Post-paid	4,583,091	4,509,815	4,375,606	4,381,879	4,278,843	4,216,579	4,211,675	4,219,022	4,261,140
Pre-paid (registered)	15,715,011	10,305,890	10,182,066	10,769,863	11,443,633	11,257,104	11,141,878	11,715,272	11,906,133

Source: EETT (based on data provided by the licensed operators)

Chart 1.32: Progress of mobile telephony connections (pre-paid and post-paid)



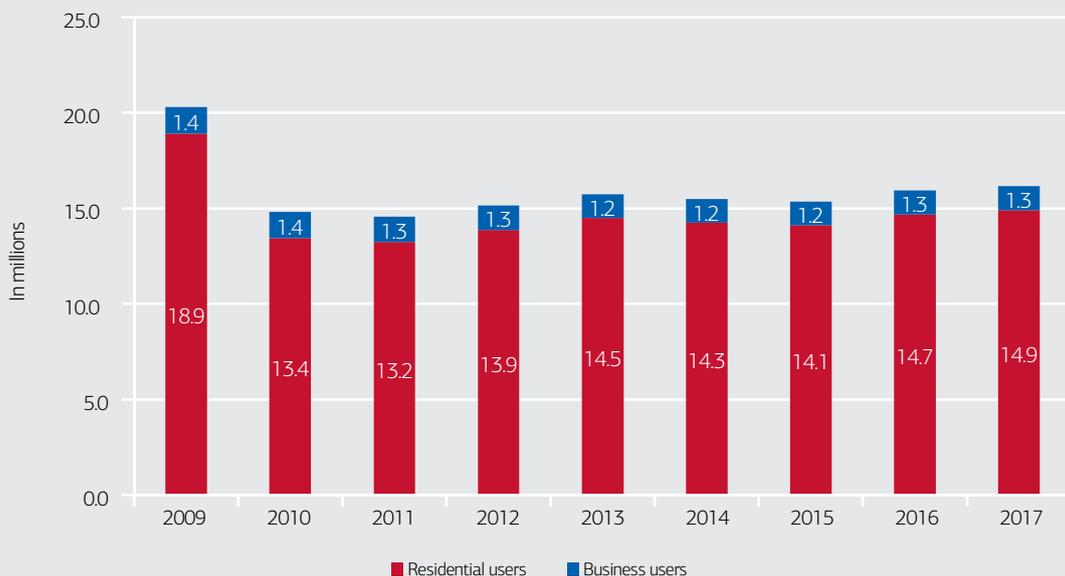
Source: EETT (based on data provided by the licensed operators)

Table 1.7: Total connections for residential and business post-paid and pre-paid users

Connections	Dec. 2009	Dec. 2010	Dec. 2011	Dec. 2012	Dec. 2013	Dec. 2014	Dec. 2015	Dec. 2016	Dec. 2017
Residential	18,906,617	13,436,394	13,233,823	13,876,910	14,497,186	14,254,880	14,118,156	14,682,583	14,902,753
Business	1,391,485	1,379,311	1,323,849	1,274,537	1,225,290	1,218,803	1,235,397	1,251,711	1,264,520

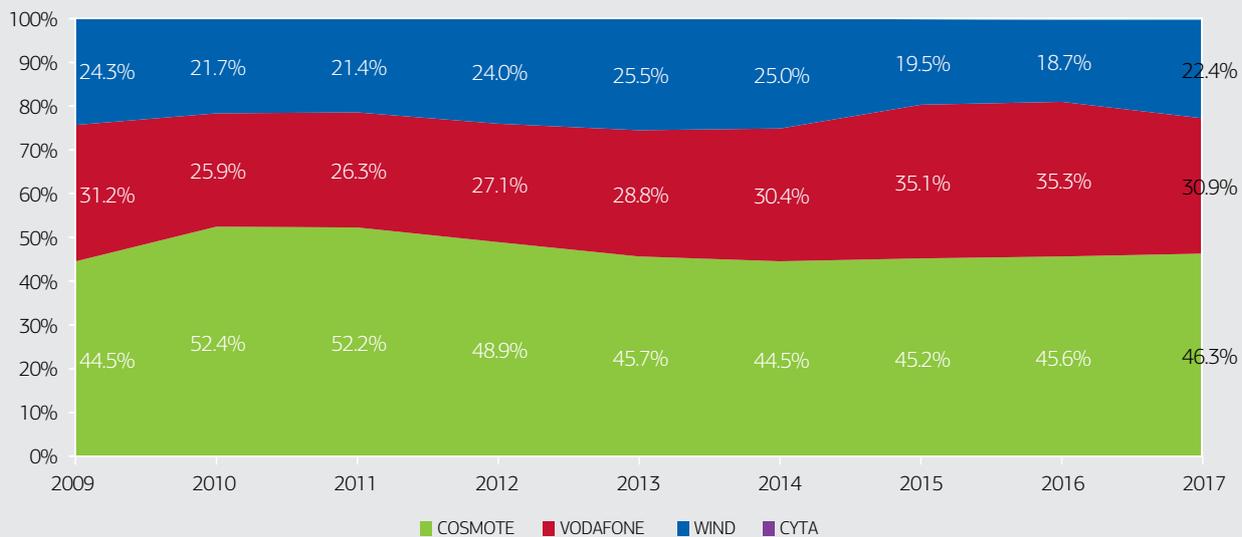
Source: EETT (based on data provided by the licensed operators)

Chart 1.33: Progress of mobile telephony connections (residential-business)



Source: EETT (based on data provided by the licensed operators)

Chart 1.34: MTOs' market shares over the number of total mobile connections (2009-2017)



Source: EETT (based on data provided by the licensed operators)

**Table 1.8: MTOs' market shares over the registered connections (2009-2017)**

	Dec. 2009	Dec. 2010	Dec. 2011	Dec. 2012	Dec. 2013	Dec. 2014	Dec. 2015	Dec. 2016	Dec. 2017
COSMOTE	44.5%	52.4%	52.2%	48.9%	45.7%	44.5%	45.2%	45.6%	46.3%
CYTA	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.2%	0.3%	0.4%
VODAFONE	31.2%	25.9%	26.3%	27.1%	28.8%	30.4%	35.1%	35.3%	30.9%
WIND	24.3%	21.7%	21.4%	24.0%	25.5%	25.0%	19.5%	18.7%	22.4%

Source: EETT (based on data provided by the licensed operators)

**Table 1.9: MTOs' market shares over the active connections (2009-2017)**

	Dec. 2009	Dec. 2010	Dec. 2011	Dec. 2012	Dec. 2013	Dec. 2014	Dec. 2015	Dec. 2016	Dec. 2017
COSMOTE	45%-55%	45%-55%	45%-55%	45%-55%	45%-55%	45%-55%	45%-55%	45%-55%	45%-55%
CYTA	-	-	-	-	-	0%-5%	0%-5%	0%-5%	0%-5%
VODAFONE	25%-35%	25%-35%	25%-35%	25%-35%	25%-35%	25%-35%	25%-35%	25%-35%	25%-35%
WIND	15%-25%	15%-25%	15%-25%	15%-25%	15%-25%	15%-25%	15%-25%	15%-25%	15%-25%

Source: EETT (based on data provided by the licensed operators)

**Table 1.10: Penetration rate of connections on the population (2009-2017)**

Penetration rate	Dec. 2009	Dec. 2010	Dec. 2011	Dec. 2012	Dec. 2013	Dec. 2014	Dec. 2015	Dec. 2016	Dec. 2017
Registered	183%	133%	131%	137%	143%	142%	141%	148%	150%
Active	120%	111%	109%	116%	114%	111%	116%	116%	120%

Source: EETT (based on data provided by the licensed operators)

## The use of mobile telephony networks

The use of mobile telephony networks was mainly characterized by the small increase of the domestic voice minutes, the considerable drop of the SMS volume and the spectacular increase of data services.

### Voice calls

- In 2017, the volume of voice calls amounted to 26.7 billion minutes, increased by 2% compared to 2016 (26.2 billion minutes) (Chart 1.35).
- The biggest part of this volume was the on-net mobile traffic that represented 59% of the total voice call volume compared to 62% in 2016, thus having dropped from 16.3 to 15.8 billion minutes.
- The off-net mobile traffic moved upwards registering an 11.9% increase compared to 2016 (from 7 to 7.9 billion minutes). Similarly, mobile calls to fixed numbers climbed up by 6.3% (from 2.3 to 2.4 billion minutes).
- International calls were also increased by 7.3% (Chart 1.37). Chart 1.38 demonstrates the volume of voice calls per user category. Pre-paid users are steadily at the top with 47.2% of total calls, followed by post-paid residential users with 37.1% and post-paid business users with 15.7%. Based on the actual traffic, the average monthly call duration for a residential post-paid user was 244 minutes to mobiles (versus 246 minutes in 2016) and 27 minutes to fixed numbers; for a business user was 286 minutes to mobiles (versus 277 minutes in 2016) and 90 minutes to fixed numbers (against 86 minutes in 2016) and finally a pre-paid user talked 109 minutes on average per month to mobiles (112 minutes in 2016) and 8 minutes to fixed numbers.

### Short Text Messages (SMS)

- The total number of SMS registered –yet again - a 20.6% decrease (2.4 compared to 3 billion in 2016) (Chart 1.39).
- The majority of SMS in 2017 were on-net (56.8% compared to 63.2% in 2016), while the number of the off-net SMS exhibits a continuous growth.
- SMS from pre-paid users recorded the biggest drop by 33% amounting to 0.9 billion in 2017 compared to 1.4 billion in 2016 (Chart 1.40).
- A residential post-paid user sent 31 SMS on average per month (versus 36 to 2016), followed by a business user with 23 SMS and lastly a pre-paid user with 9 SMS (against 14 in 2016).

### Multimedia Message Services (MMS)

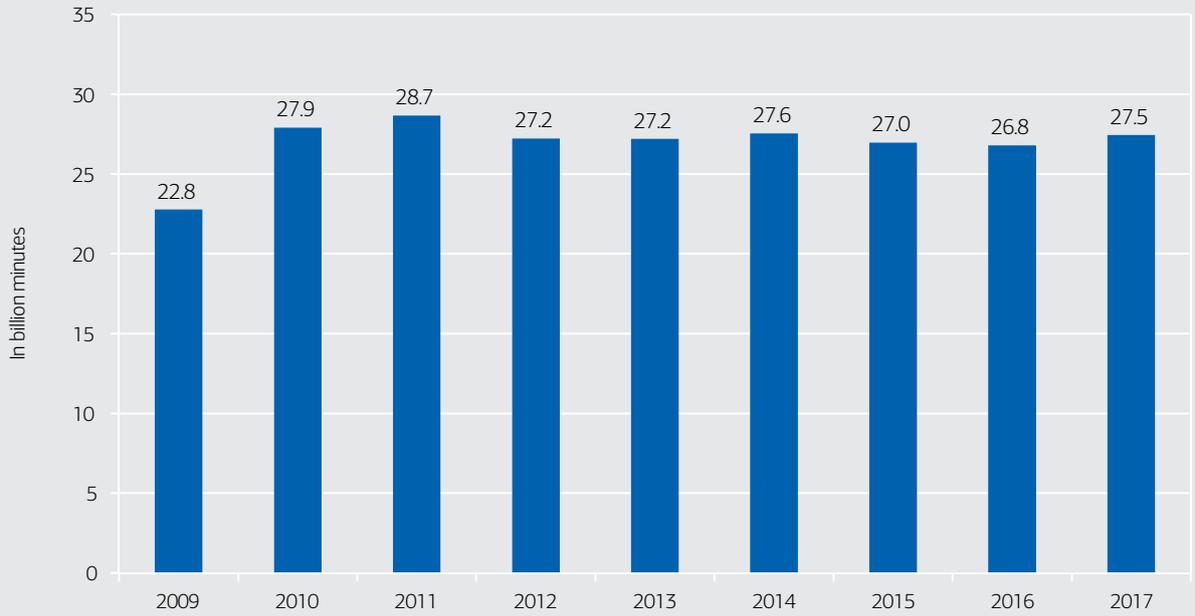
- The number of MMS dropped by 17.3% reaching 11.1 million at the end of 2017 compared to 13.5 million in 2016 (Chart 1.41).

## Data services<sup>14</sup>

- In 2017, data services via mobile telephony networks increased impressively by 108% reaching 98 billion (Chart 1.42).
- The majority of data was transferred via mobile phones (88%) while the remaining 12% was transferred via other portable devices using datacards.
- During 2017, all users almost doubled their use of data. A residential post-paid subscriber used 899 MB on average per month (versus 491 in 2016), followed by a business user with 630 MB (against 393 MB in 2016) and lastly a pre-paid user with 538 MB (against 238 MB in 2016).

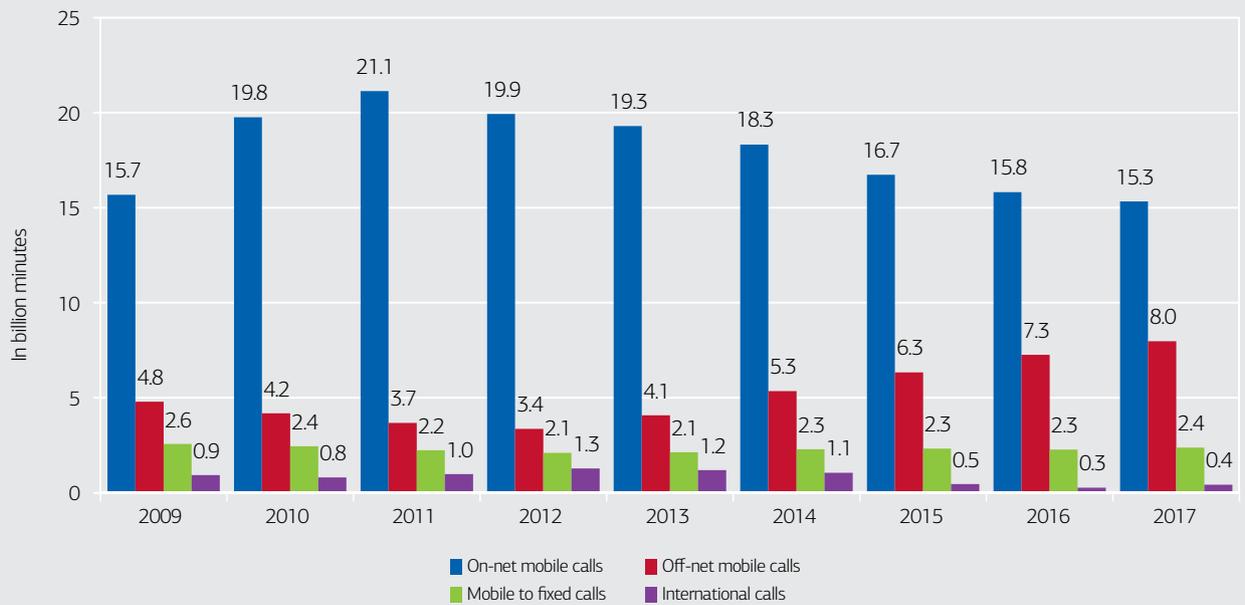
14. It should be mentioned that up till 2012 reporting data use either via a mobile phone or datacards separately was not feasible.

Chart 1.35: Voice calls originating from mobile



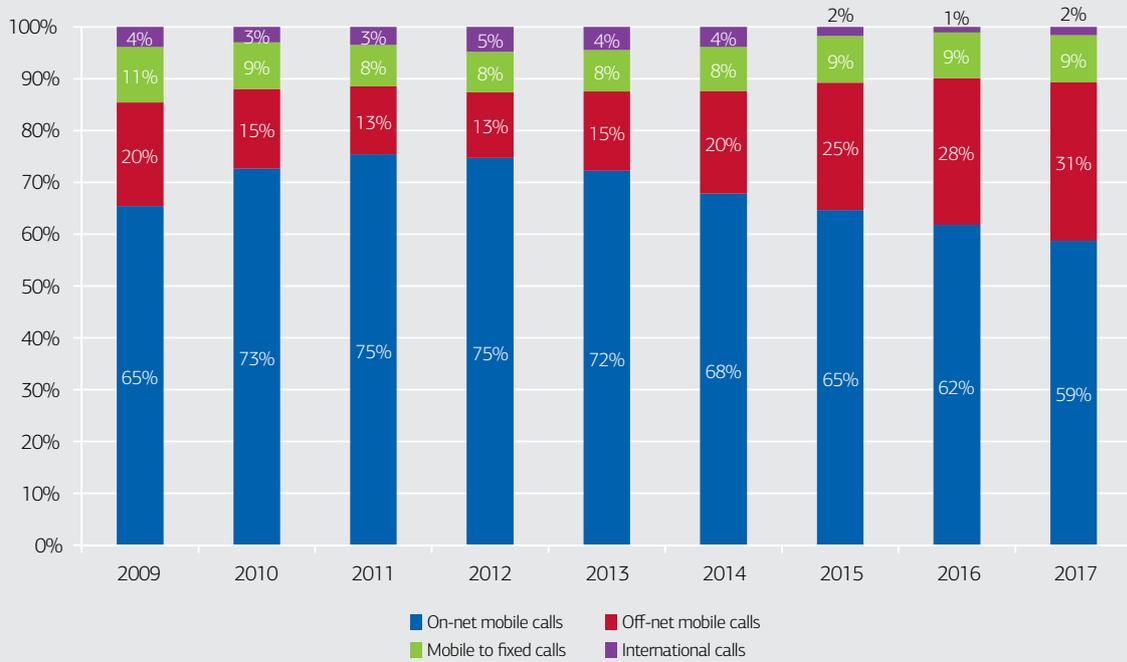
Source: EETT (based on data provided by the licensed operators)

Chart 1.36: Voice calls per category



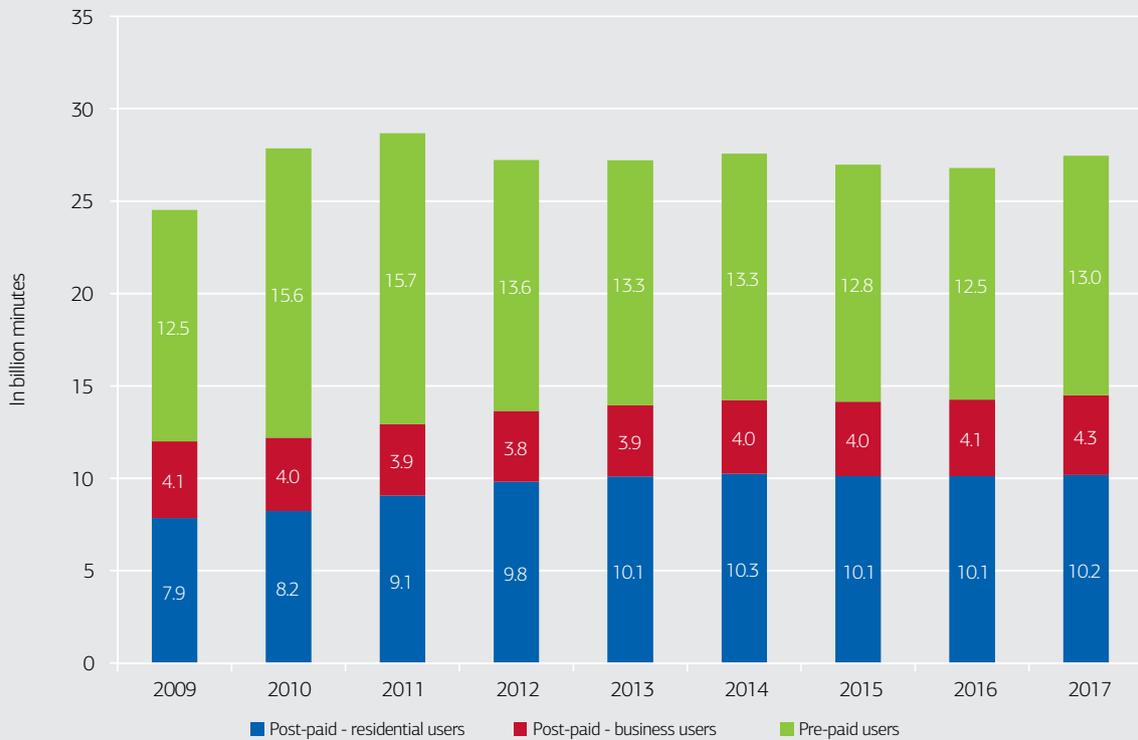
Source: EETT (based on data provided by the licensed operators)

Chart 1.37: Voice calls per category (% of the total)



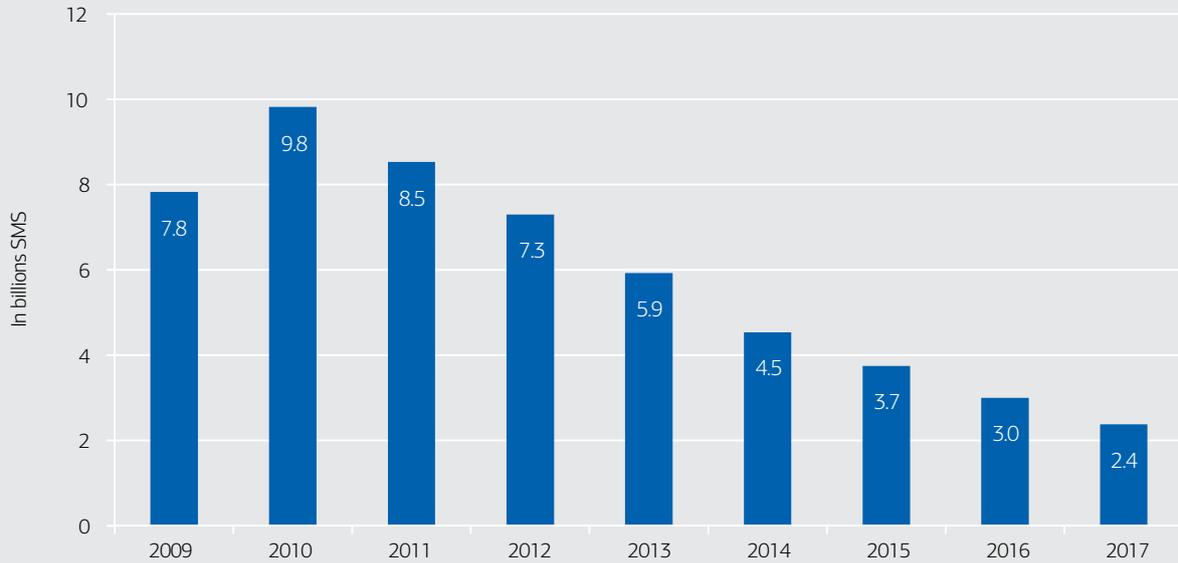
Source: EETT (based on data provided by the licensed operators)

Chart 1.38: Voice calls per user category



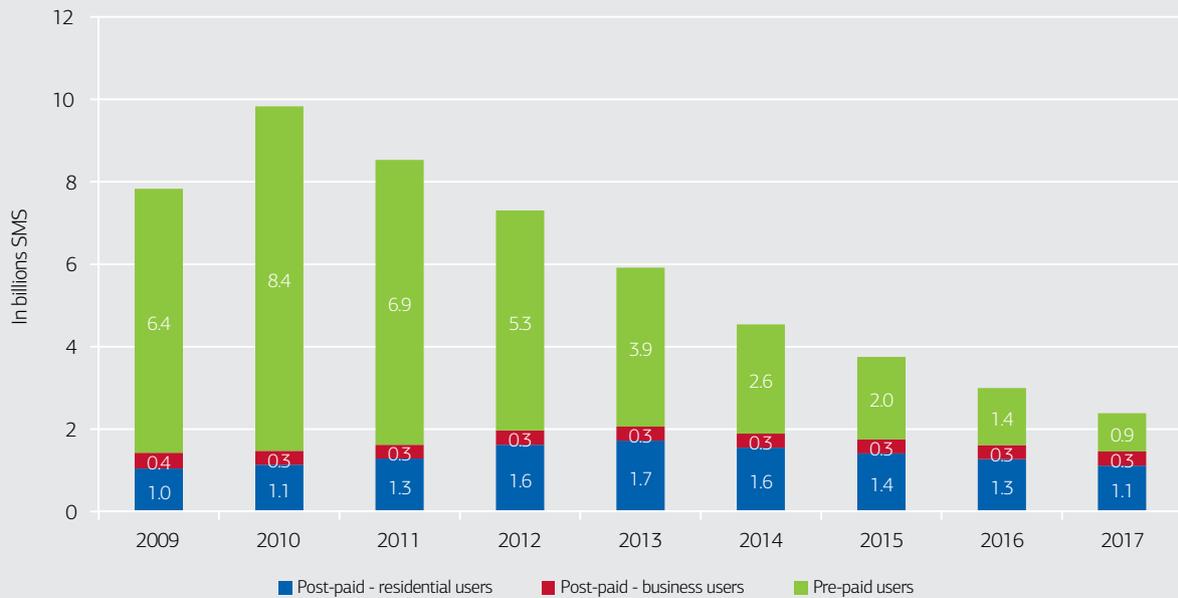
Source: EETT (based on data provided by the licensed operators)

Chart 1.39: Total number of SMS (2009-2017)



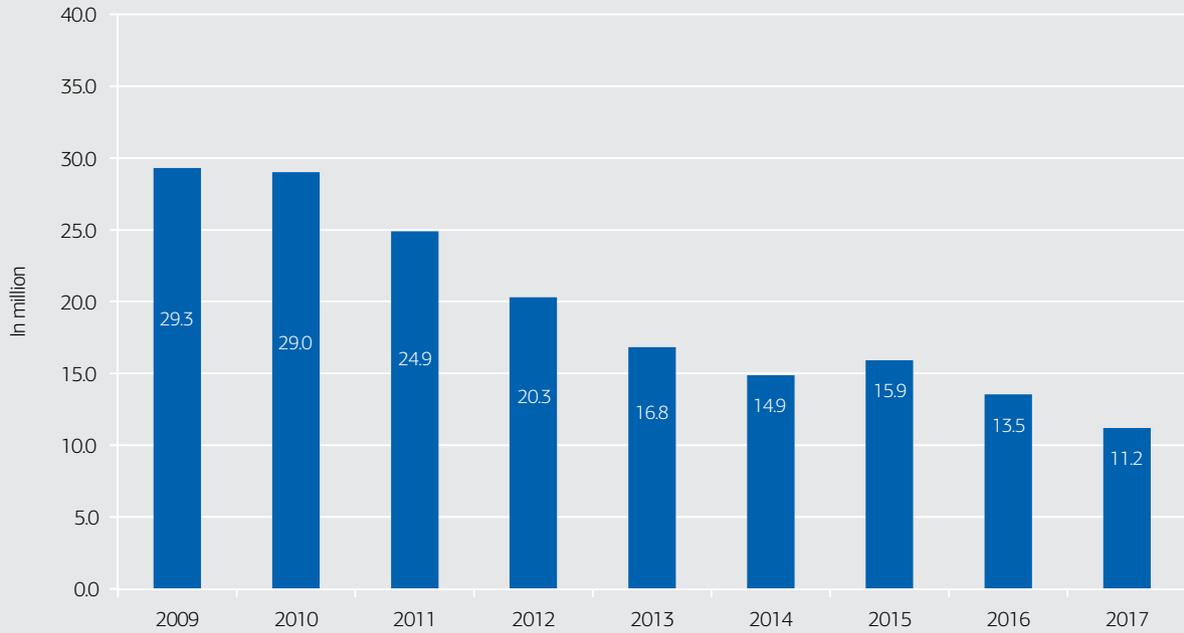
Source: EETT (based on data provided by the licensed operators)

Chart 1.40: SMS per user category



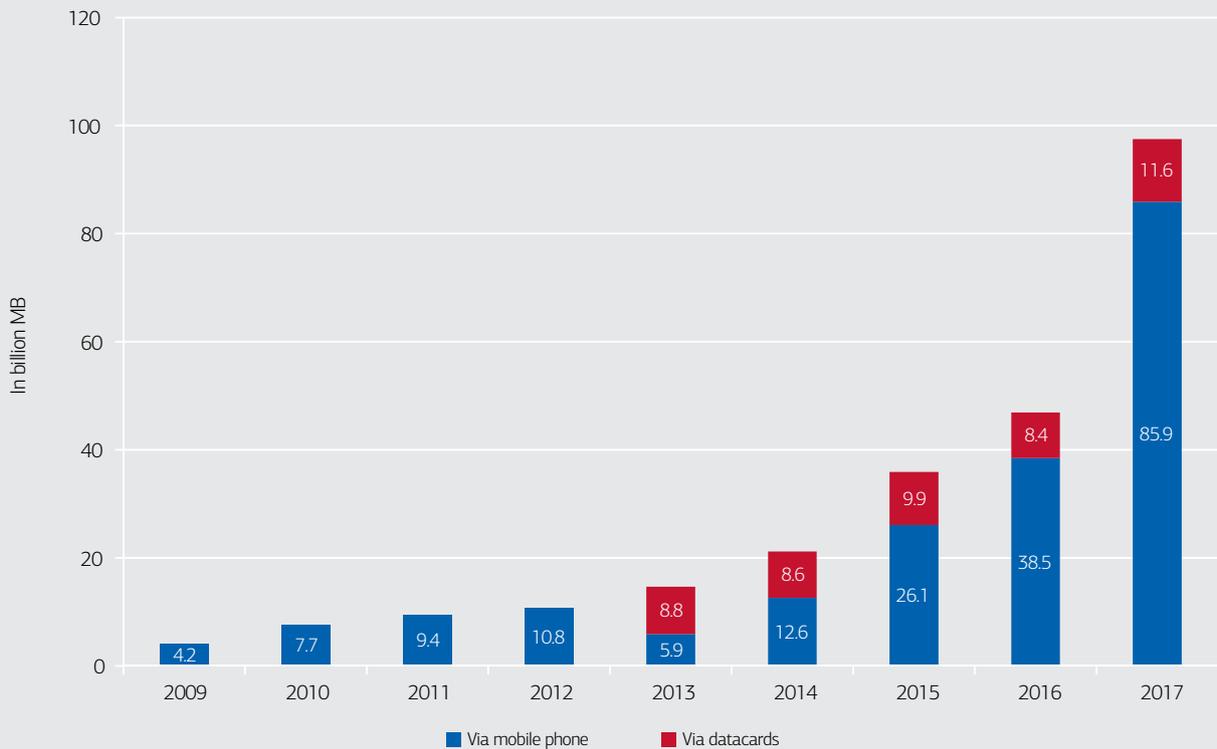
Source: EETT (based on data provided by the licensed operators)

Chart 1.41: Total number of MMS



Source: EETT (based on data provided by the licensed operators)

Chart 1.42: Total number (MB) of data services via mobile phone and datacards



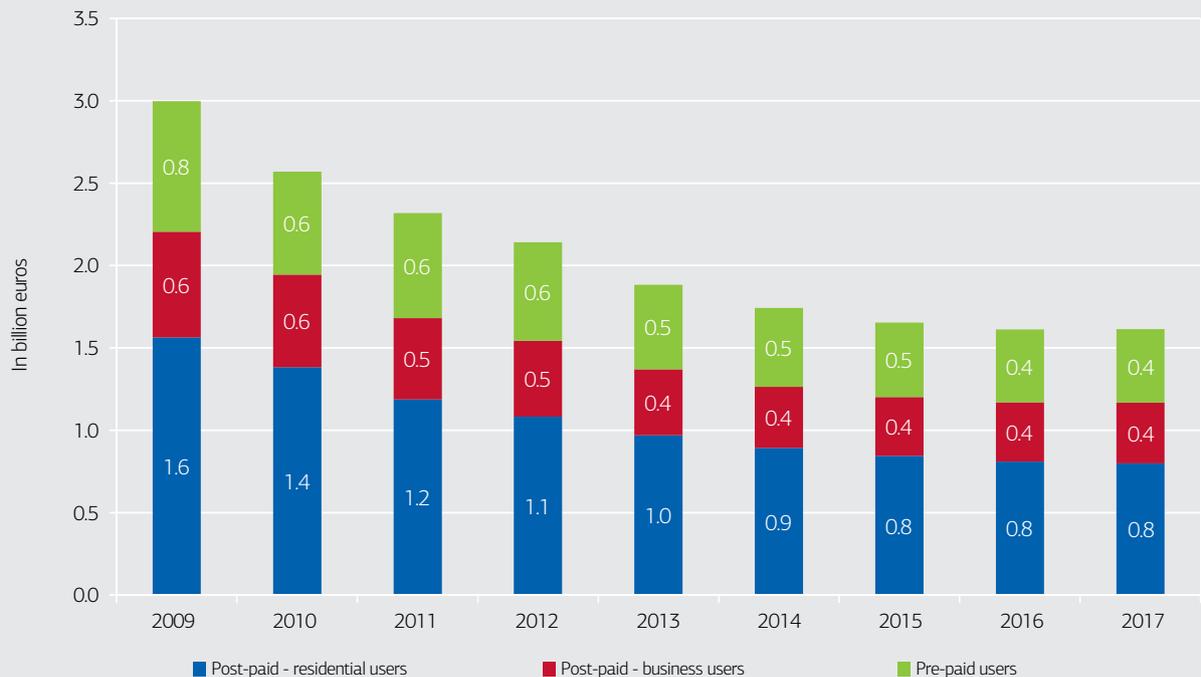
Source: EETT (based on data provided by the licensed operators)

### Mobile telephony retail revenues

In 2017, mobile telephony retail revenues<sup>15</sup> (post-paid and pre-paid) increased marginally by 0.1% amounting to 1.6 billion euros (Chart 1.43). Tables 1.11-1.13 present market shares based on the MTOs' retail revenues<sup>16</sup> aggregately and per user category (post-paid and pre-paid). The revenues from post-paid residential users dropped by 1.3%,

whereas the revenues from business and pre-paid users increased by 2.4% and 0.8% respectively. The majority of the mobile telephony retail revenues (70.8%) stemmed from voice calls (Chart 1.44). The average annual revenue per post-paid and pre-paid user was 278 euros (drop by 0.6%) and 53 euros (drop by 1%) respectively (Chart 1.45).

Chart 1.43: Retail revenues from mobile telephony users



Source: EETT (based on data provided by the licensed operators)

15. Revenues from the sale of handsets, wholesale or other services are not included.

16. Retail revenues and the resulting market shares are confidential data and thus presented as ranges.

**Table 1.11: MTOs' shares over the retail revenues (2009-2017)**

	Dec. 2009	Dec. 2010	Dec. 2011	Dec. 2012	Dec. 2013	Dec. 2014	Dec. 2015	Dec. 2016	Dec. 2017
COSMOTE	45%-55%	45%-55%	45%-55%	45%-55%	45%-55%	45%-55%	45%-55%	45%-55%	45%-55%
CYTA	-	-	-	-	-	0%-5%	0%-5%	0%-5%	0%-5%
VODAFONE	25%-35%	25%-35%	25%-35%	25%-35%	25%-35%	25%-35%	25%-35%	25%-35%	25%-35%
WIND	15%-25%	15%-25%	15%-25%	15%-25%	15%-25%	15%-25%	15%-25%	15%-25%	15%-25%

Source: EETT (based on data provided by the licensed operators)

**Table 1.12: MTOs' shares over the post-paid retail revenues (2009-2017)**

	Dec. 2009	Dec. 2010	Dec. 2011	Dec. 2012	Dec. 2013	Dec. 2014	Dec. 2015	Dec. 2016	Dec. 2017
COSMOTE	35%-45%	45%-55%	45%-55%	45%-55%	45%-55%	45%-55%	45%-55%	45%-55%	45%-55%
CYTA	-	-	-	-	-	0%-5%	0%-5%	0%-5%	0%-5%
VODAFONE	25%-35%	25%-35%	25%-35%	25%-35%	25%-35%	25%-35%	25%-35%	25%-35%	25%-35%
WIND	15%-25%	15%-25%	15%-25%	15%-25%	15%-25%	15%-25%	15%-25%	15%-25%	15%-25%

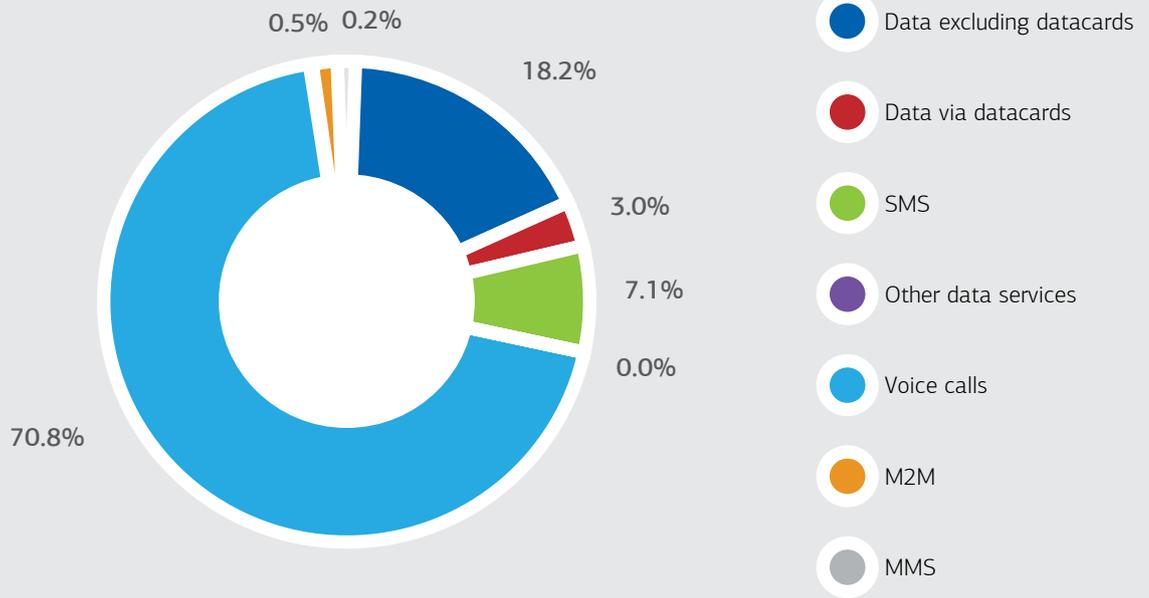
Source: EETT (based on data provided by the licensed operators)

**Table 1.13: MTOs' shares over the pre-paid retail revenues (2009-2017)**

	Dec. 2009	Dec. 2010	Dec. 2011	Dec. 2012	Dec. 2013	Dec. 2014	Dec. 2015	Dec. 2016	Dec. 2017
COSMOTE	45%-55%	55%-65%	55%-65%	55%-65%	55%-65%	55%-65%	55%-65%	55%-65%	45%-55%
CYTA	-	-	-	-	-	0%-5%	0%-5%	0%-5%	0%-5%
VODAFONE	25%-35%	15%-25%	15%-25%	15%-25%	15%-25%	15%-25%	25%-35%	25%-35%	25%-35%
WIND	25%-35%	15%-25%	15%-25%	15%-25%	15%-25%	15%-25%	15%-25%	15%-25%	15%-25%

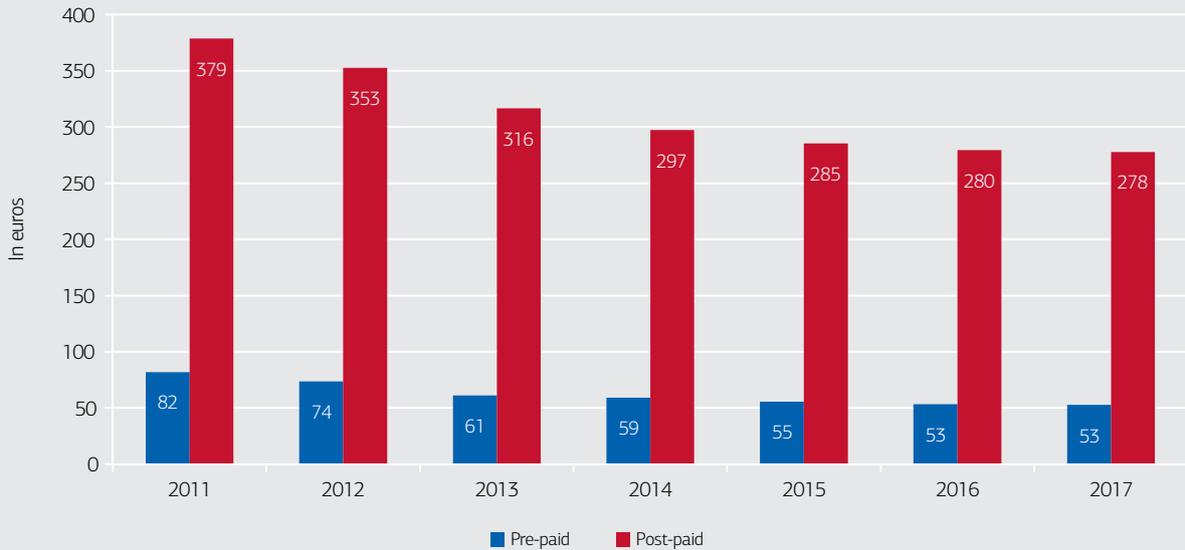
Source: EETT (based on data provided by the licensed operators)

Chart 1.44: Retail revenue from mobile telephony services (2017)



Source: EETT (based on data provided by the licensed operators)

Chart 1.45: Average annual revenue per mobile telephony connection



Source: EETT (based on data provided by the licensed operators)

### Mobile telephony interconnection

The interconnection traffic for MTOs in 2017 increased, as shown in Chart 1.46, which presents the national and international interconnection traffic (incoming and outgoing) for the three MTOs and one Mobile Virtual Network Operator (MVNO). Compared to 2016, the overall increase was 9%, namely a total annual rise of approximately 1.8 billion minutes. Both national outgoing and international incoming traffic were significantly increased by 10% and 8% respectively.

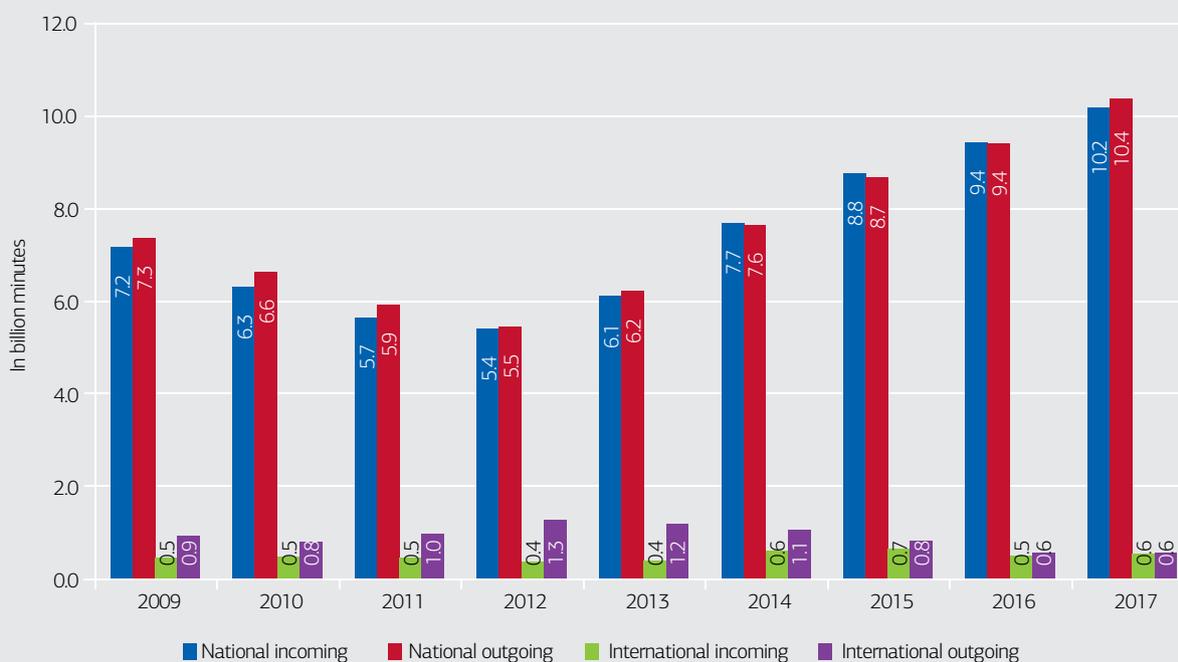
Chart 1.47 demonstrates the on-net traffic for the three MTOs and the MVNO, which in 2017 amounted to 15.3 billion minutes, having dropped again by 4% compared to 2016 (about 644 million minutes), thus accounting for 41% of the total interconnection traffic (that includes both incoming and outgoing traffic).

At the same time, the national traffic terminating to mobile networks has been more or less relatively stable over the last five years. In 2017, in particular, national calls to mobile

phones increased marginally by 0.4%, amounting to 25,495 million minutes compared to 25,383 million minutes in 2016, since, as it has been already mentioned, the 4% drop in on-net traffic was partially offset by the 11% increase mainly of the off-net mobile incoming traffic (Chart 1.48).

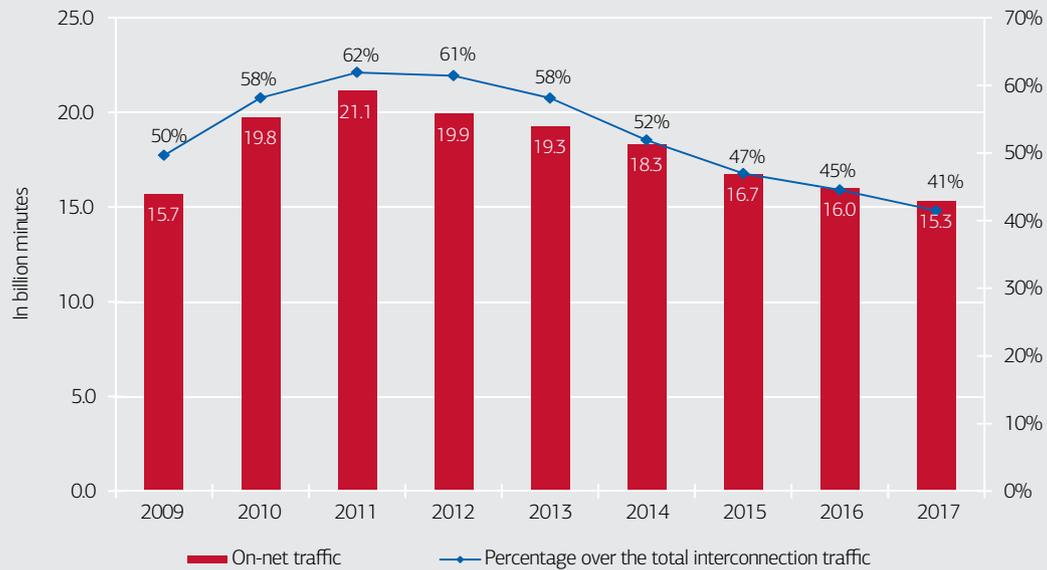
In 2017, the revenues from the national incoming traffic to mobile networks increased by 4% compared to last year, reaching 105.9 against 102.3 million euros in 2016, due to the aforementioned increase of the off-net mobile incoming traffic (Chart 1.49). The gradual reduction of the termination fees and the reinforcement of the on-net traffic had resulted in a 73% cumulative drop compared to 2010. During the last years, this trend, however, seems to be reversible taking into account on the one hand the upward trend of both the off-net mobile incoming traffic and its respective revenues and the volume drop of the on-net traffic on the other. At the same time and as of 1<sup>st</sup> January 2018, the termination fees to mobile telephony networks stand at 0.958 eurocents per traffic minute (Chart 1.50).

Chart 1.46: MTOs' interconnection traffic



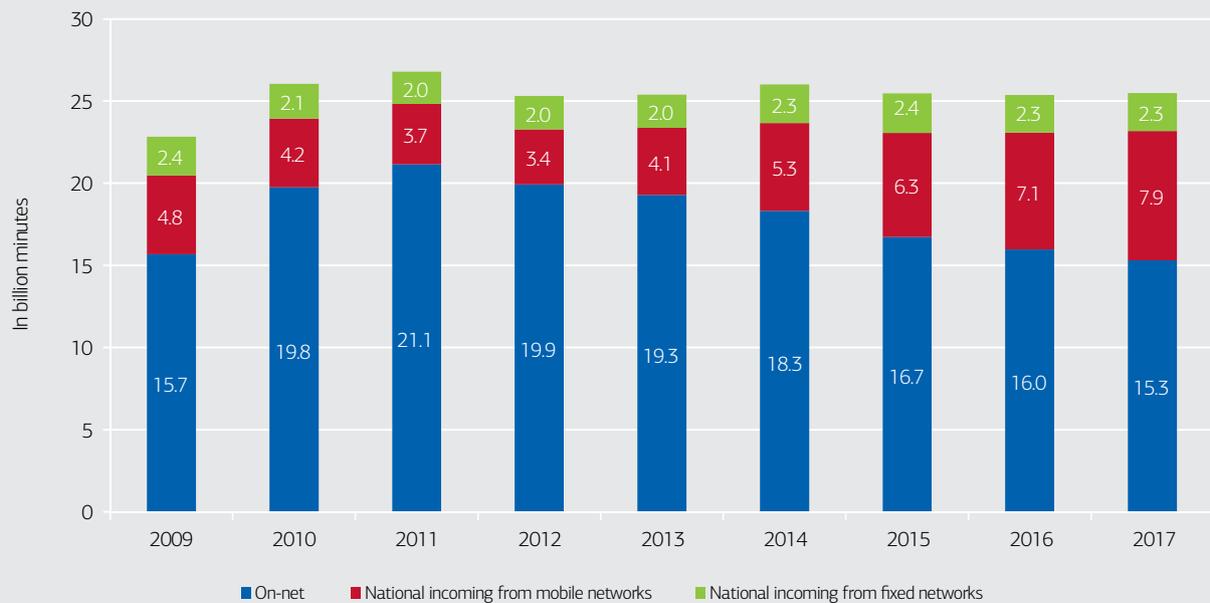
Source: EETT (on data provided by the MTOs)

Chart 1.47: MTOs' on-net traffic



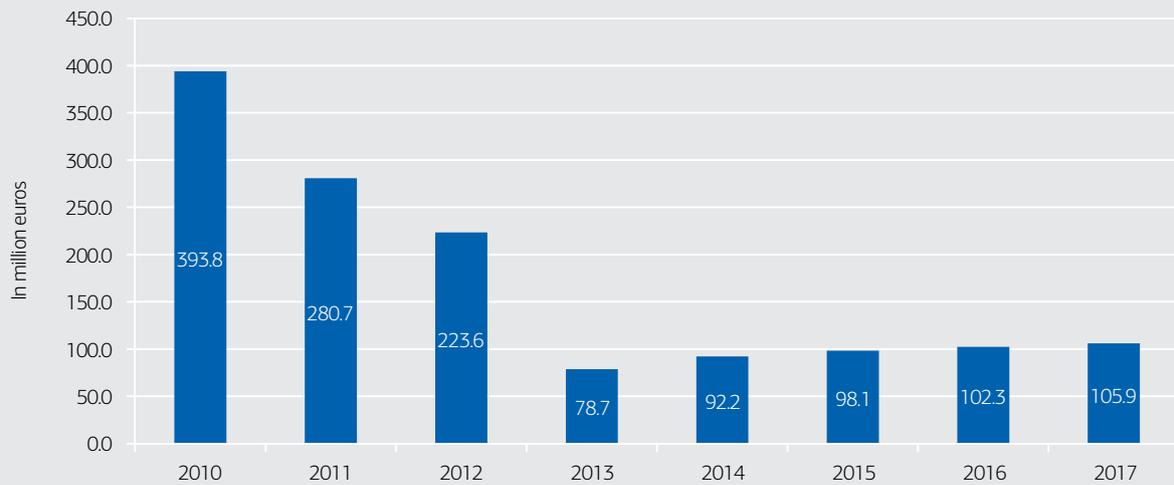
Source: EETT (on data provided by the MTOs)

Chart 1.48: Voice calls terminating to mobile phones in Greece



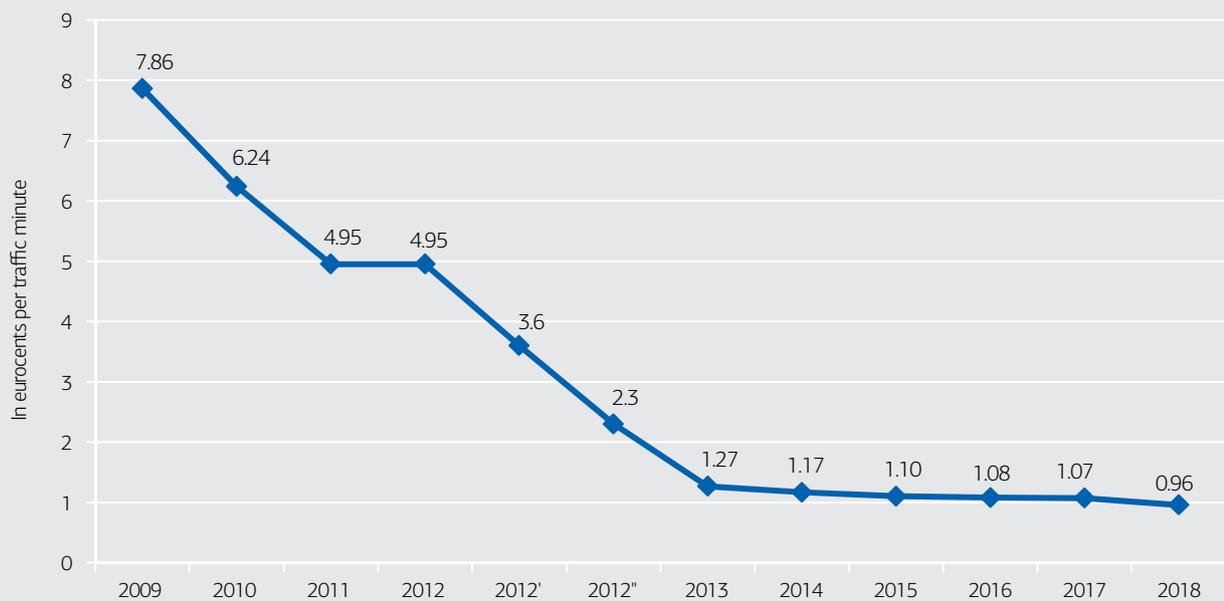
Source: EETT (on data provided by the MTOs)

Chart 1.49: Revenues from fixed and mobile voice calls termination to mobiles in Greece



Source: EETT (on data provided by the MTOs)

Chart 1.50: Mobile call termination fees reduction



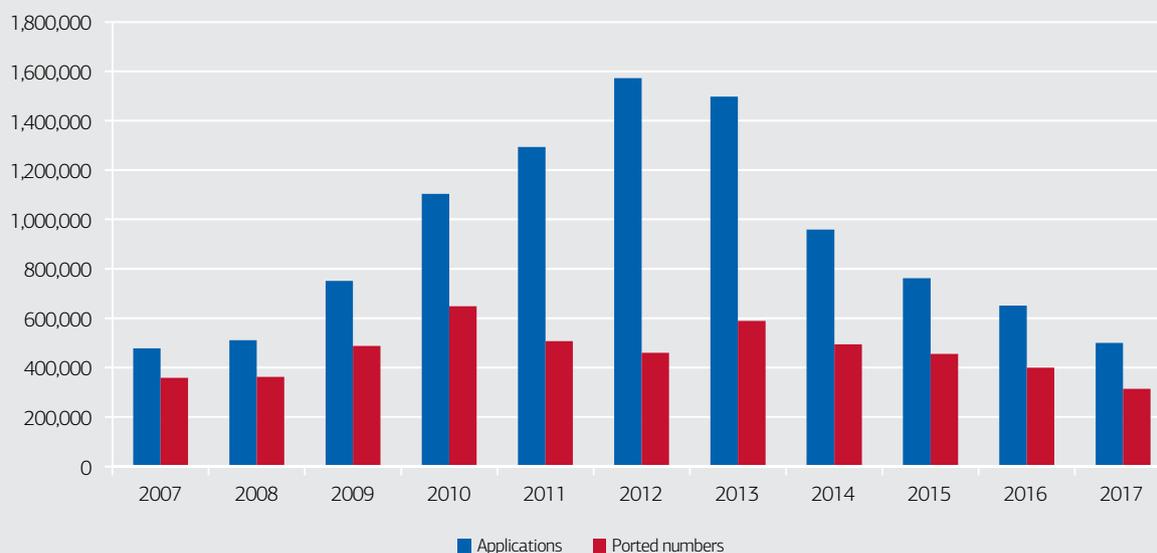
Source: EETT

### Number portability in mobile telephony

During 2017, 500,668 applications for porting mobile numbers were submitted compared to 650,652 in 2016, registering a 23.1% decrease compared to last year. For

the same period, 314,845 numbers were ported, namely a 21.2% drop compared to 2016 (Chart 1.51). That indicates that approximately 63% of the initial portability applications were seen through.

Chart 1.51: Number portability for mobile telephony



Source: EETT

#### 1.2.4. Comparison between fixed and mobile telephony

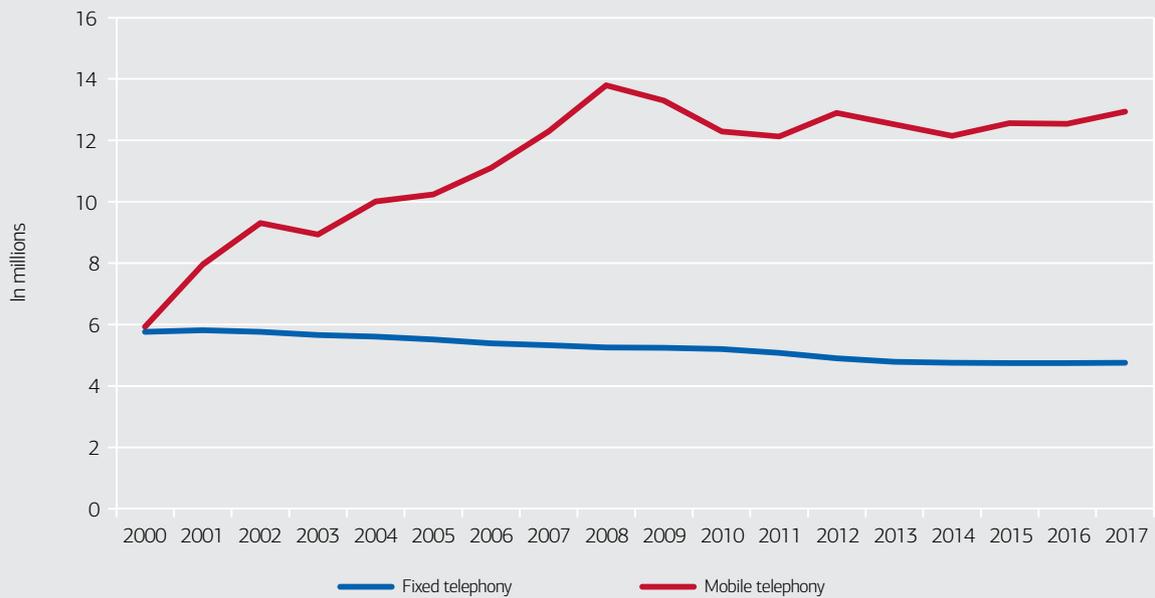
Fixed telephony connections amounted to 4.8 million in 2017 registering a marginal increase (0.2%) whilst active mobile connections/subscriptions increased by 3.2% reaching 12.9 million. Fixed telephony connections correspond to slightly more than 1/3 of the respective ones in mobile telephony (Chart 1.52).

Chart 1.53 shows the progress of the fixed and mobile retail revenues for the period 2011-2017. After six declining years, mobile telephony retail revenues increased marginally by 0.1% compared to 2016 reaching 1.6 billion euros whereas fixed telephony retail revenues amounted to 1.4 billion euros having decreased by 0.1%. It should be mentioned that the mobile telephony revenues refer only to voice and

data (SMS, MMS, Data) (excluding revenues from handsets and other services), while the fixed telephony revenues are presented aggregately for the period 2011-2013 and as of 2014 pertain to voice and internet retail revenues.

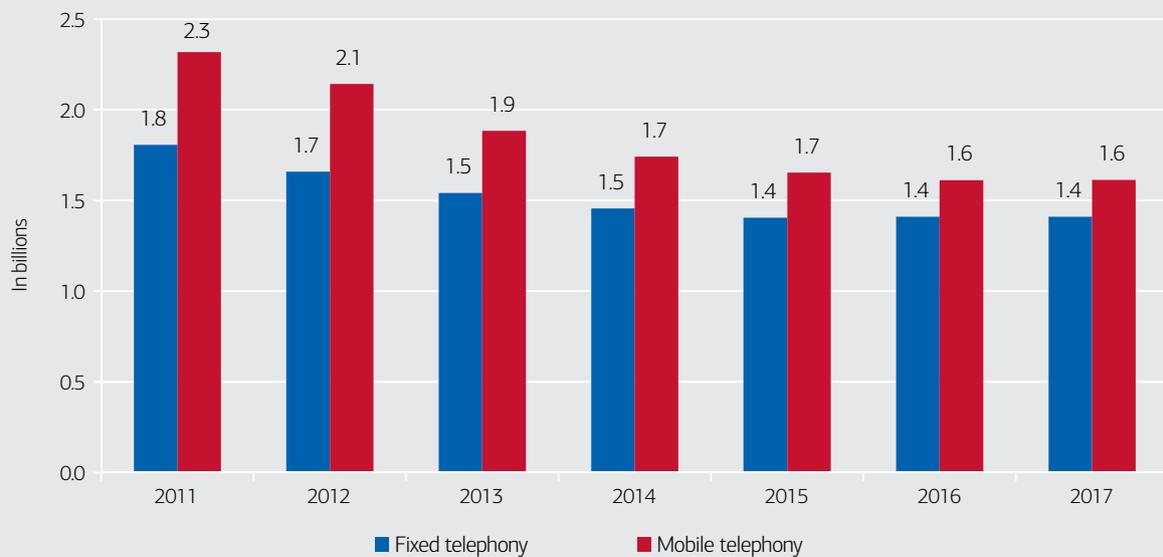
Mobile telephony calls rose by 2% compared to 2016 and currently account for 63% of the total traffic against 62% in 2016. On the contrary, fixed telephony calls kept on declining with an additional 4% drop and amounted to 15.5 billion minutes in 2017 versus 16.2 billion minutes in 2016 due to the considerable reduction of national outgoing calls to fixed numbers by 600 million minutes. The progress of traffic volumes from fixed and mobile phones along with the respective market shares are presented in Charts 1.54 και 1.55, taking into account the national fixed calls, calls to mobiles, as well as international calls.

Chart 1.52: Connections/subscriptions of fixed and mobile telephony



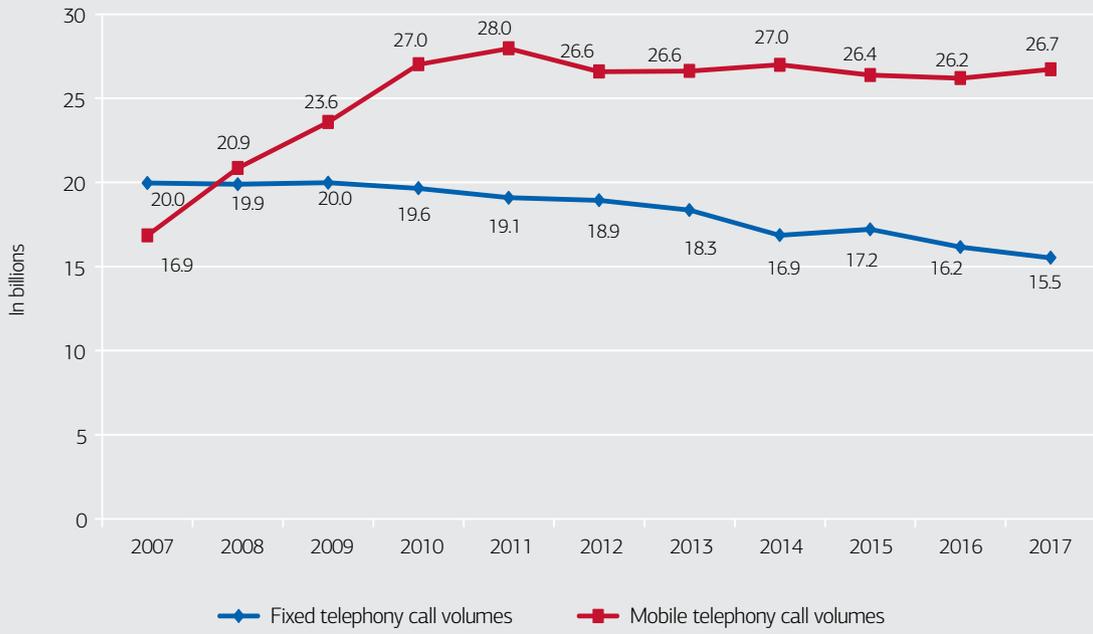
Source: EETT (based on data provided by the licensed operators)

Chart 1.53: Revenues from fixed and mobile telephony



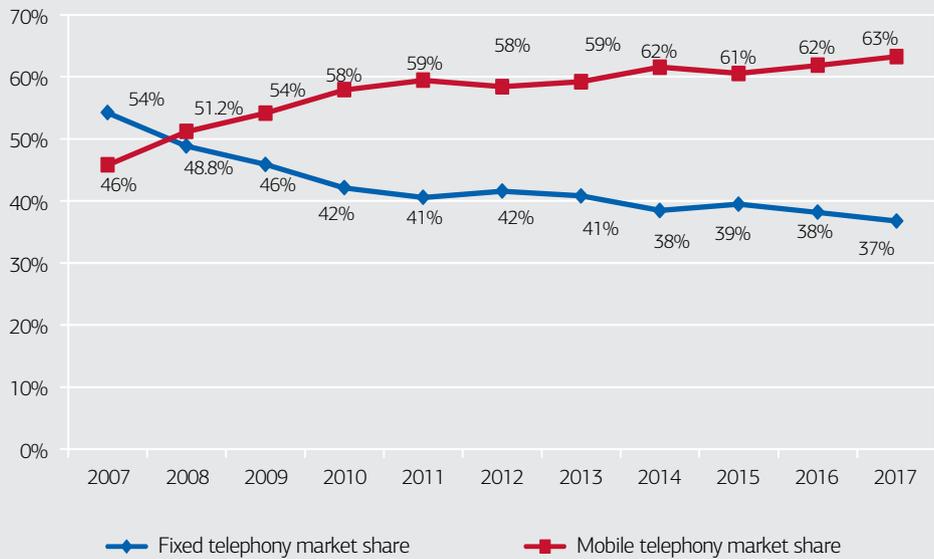
Source: EETT (based on data provided by the licensed operators)

Chart 1.54: Call volumes from fixed and mobile phones



Source: EETT (based on data provided by the licensed operators)

Chart 1.55: Fixed and mobile telephony market shares



Source: EETT (based on data provided by the licensed operators)

## 1.2.5. Broadband

### Fixed broadband

By the end of 2017, broadband connections reached 3,795,410 compared to 3,616,705 at the end of 2016, registering an annual increase of 4.9% (Chart 1.56), which is lower than that of last year's (5.2%).

LLU continued to increase during 2017 (Chart 1.57), reaching 2,116,007 at the end of the year compared to 2,085,248 at the end of 2016 (increase by 1.5% against 1.9% in 2016)<sup>17</sup>. This increase is entirely attributed to the full LLU lines which amounted to 2,107,510 by the end of the year versus 2,081,058 at the end 2016 (a 1.3% increase), as opposed to the shared LLU lines, whose number continued to drop (3,296 lines at the end of the year against 4,190 at the end 2016). Furthermore, full access sub-loops lines<sup>18</sup> reached 5,201, with their biggest part (about 4/5 of the total) being available for rolling out broadband infrastructure in rural areas and the remaining is supplied to operators for developing next generation access networks (NGA).

Nowadays, most of the operators' broadband lines, excluding OTE, are LLU lines. VDSL lines at the end of 2017 reached 460,652, compared to 273,165 in December 2016 (annual increase of 68.6%), making up 12.1% of total broadband lines. Their penetration in the population remained low (4.3% against 2.5% at the end of 2016) (Chart 1.58).

The individual shares of broadband lines per technology were as follows:

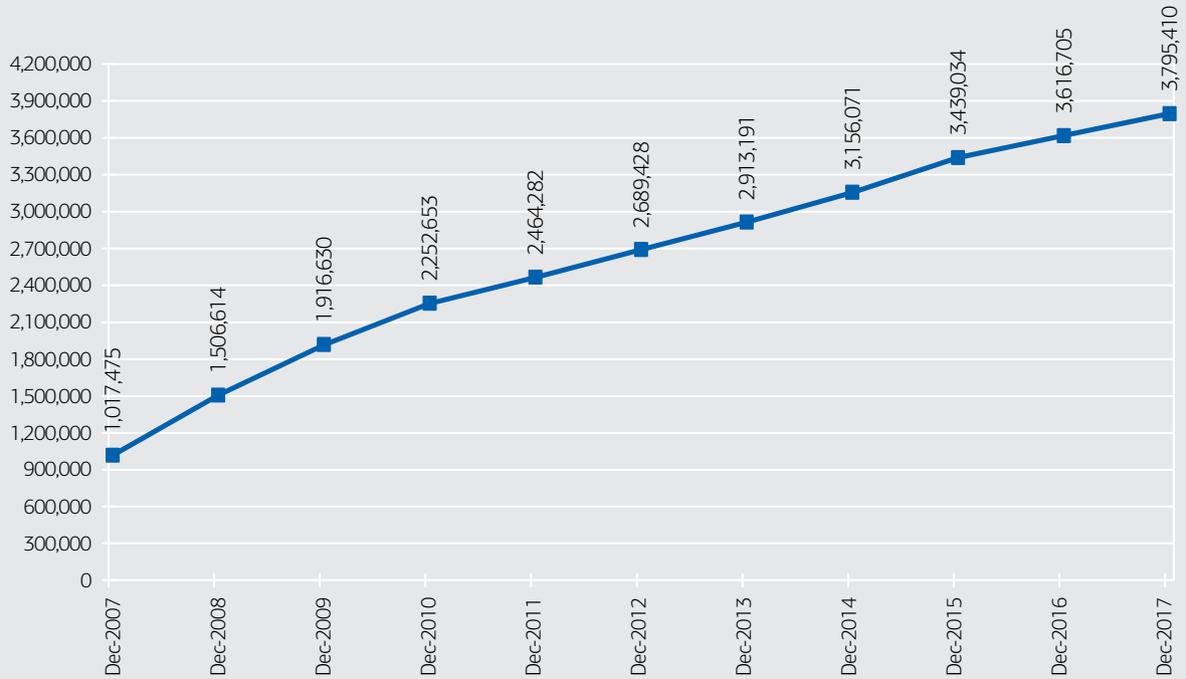
- The xDSL access lines' share via LLU reached 51.38% at the end of 2017 compared to 53.36% in 2016 (Chart 1.59).
- The share of OTE's xDSL retail lines on the total broadband lines increased to 46.01% (1,746,102 lines) compared to 44.96% at the end of 2016 (1,626,006 lines). From the total number of OTE's xDSL lines, 350,091 were VDSL lines.
- The ADSL lines, that the alternative operators are getting from OTE for rendering broadband access services, increased to 86,124 lines (2.27% on the total broadband lines) compared to 48,407 in December 2016, due to the increase of wholesale broadband lines via VDSL lines (75,626 against 37,995 in December 2016).
- The lines of other technologies remained at very low levels with a percentage estimated at 0.34%.
- The vast majority of the total broadband lines (over 92%) corresponds to nominal speeds above 10Mbps and a 12.3% corresponds to speeds above 30Mbps (versus 7.6% at the end of 2016) (Charts 1.61 and 1.62).

- The average nominal speed of ADSL lines(both retail, which are sold by OTE to its retail customers, and wholesale, which are supplied by OTE to operators in order to provide broadband access to their retail customers) reached 25Mbps (compared to approximately 22Mbps in December 2016), as a result of the increase of VDSL lines volume(Chart 1.63).
- The internet traffic of the fixed broadband access users during 2017 reached an average of 0.70 TB per subscriber (versus 0.46 TB per subscriber in 2016).
- As far as the fixed broadband access providers' shares are concerned, COSMOTE is ahead [45%-55%] followed by VODAFONE [15%-25%] (Table 1.14).

17. The access lines via LLU are a superset of broadband lines via LLU, since they also include telephony only lines.

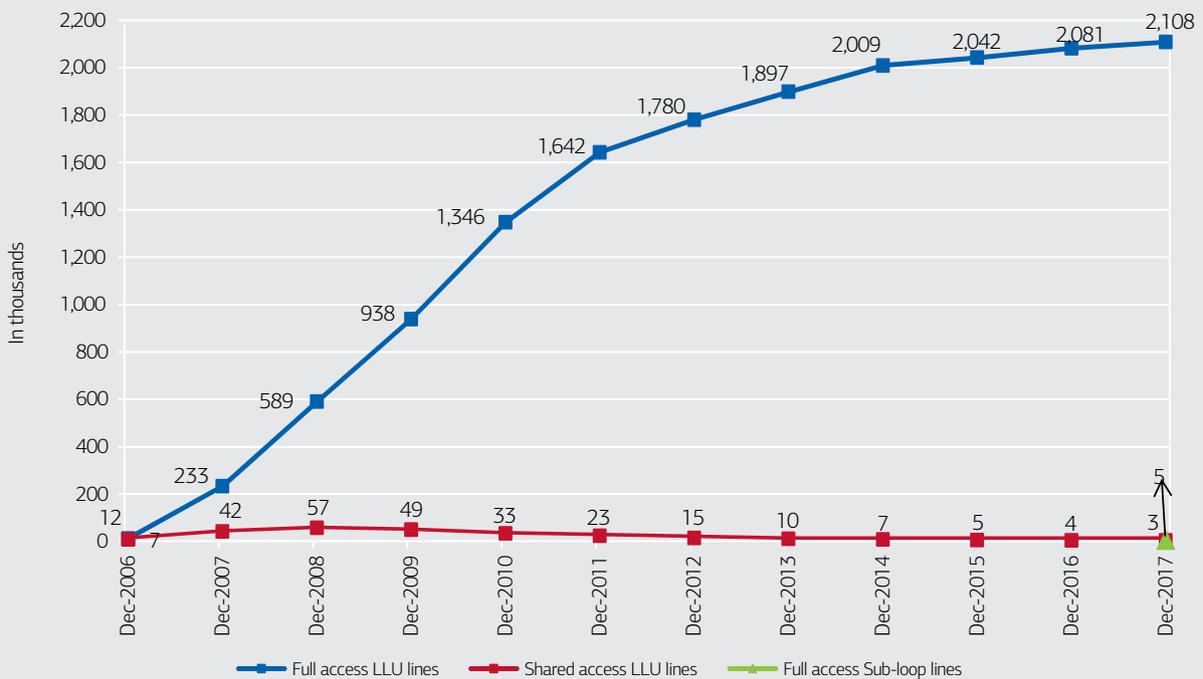
18. Local Sub-loop: the section of local loop that connects the termination point of OTE's network at the subscriber's premises to the Local Distribution Frame (LDF or Optical Network Unit-ONU).

Chart 1.56: Progress of broadband lines



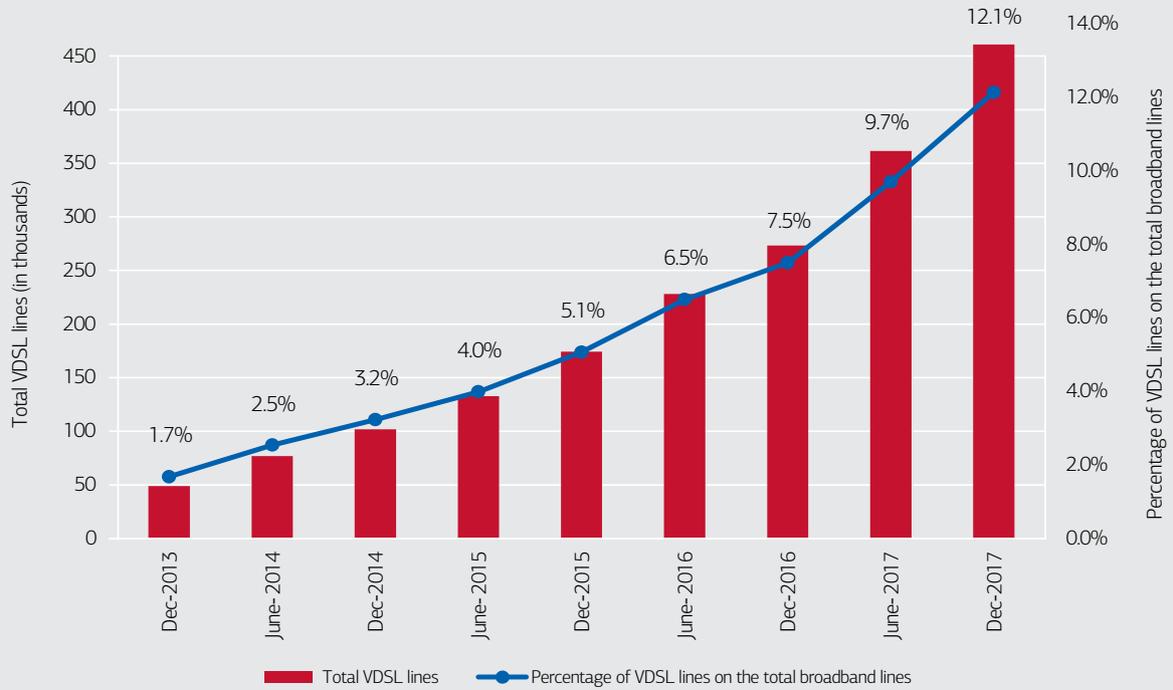
Source: EETT (based on data provided by the licensed operators)

Chart 1.57: Progress of LLU lines



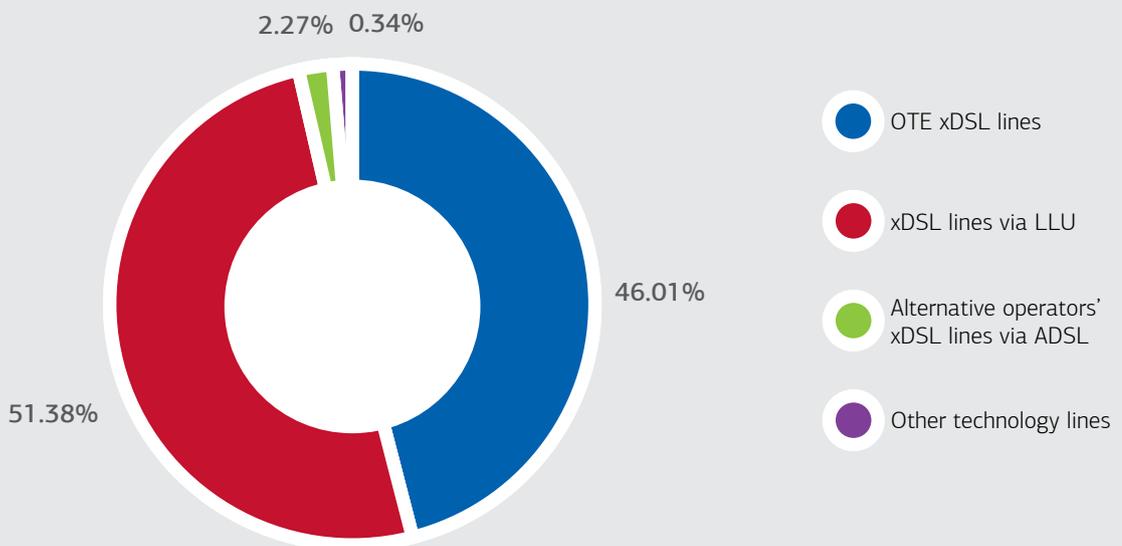
Source: EETT (based on data provided by the licensed operators)

Chart 1.58: Progress of VDSL lines



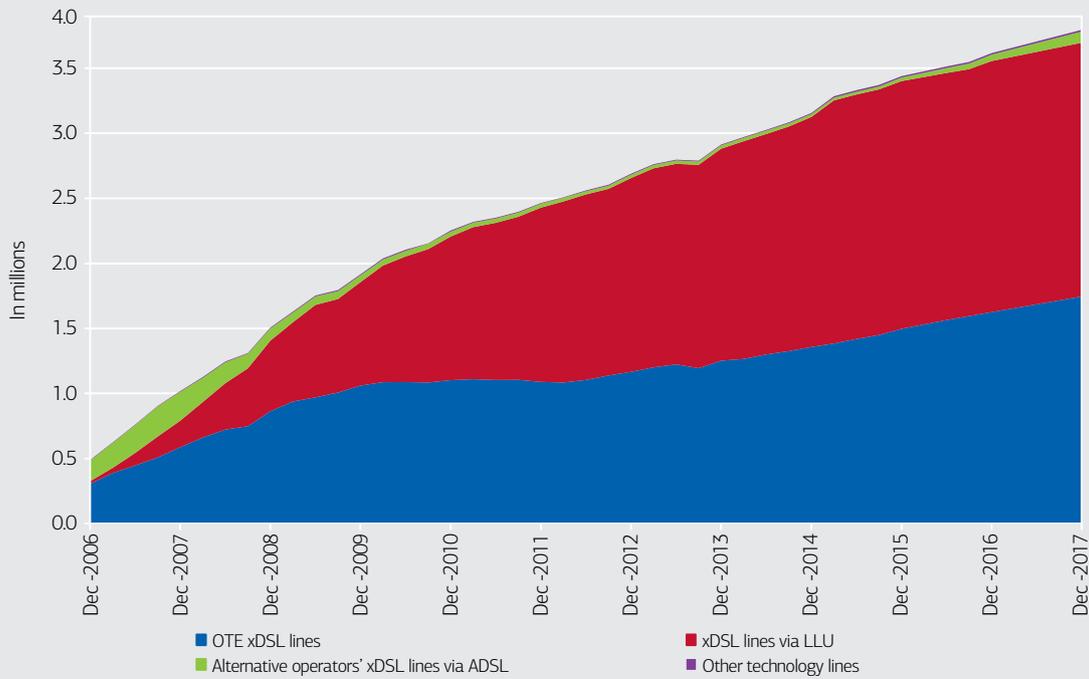
Source: EETT (based on data provided by the licensed operators)

Chart 1.59: Breakdown of broadband lines per technology (December 2017)



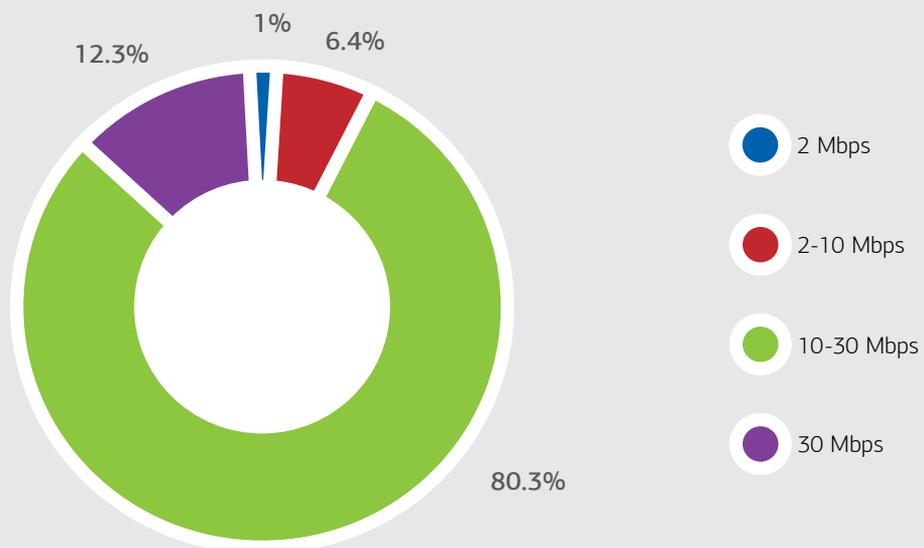
Source: EETT (based on data provided by the licensed operators)

Chart 1.60: Progress of broadband lines per technology



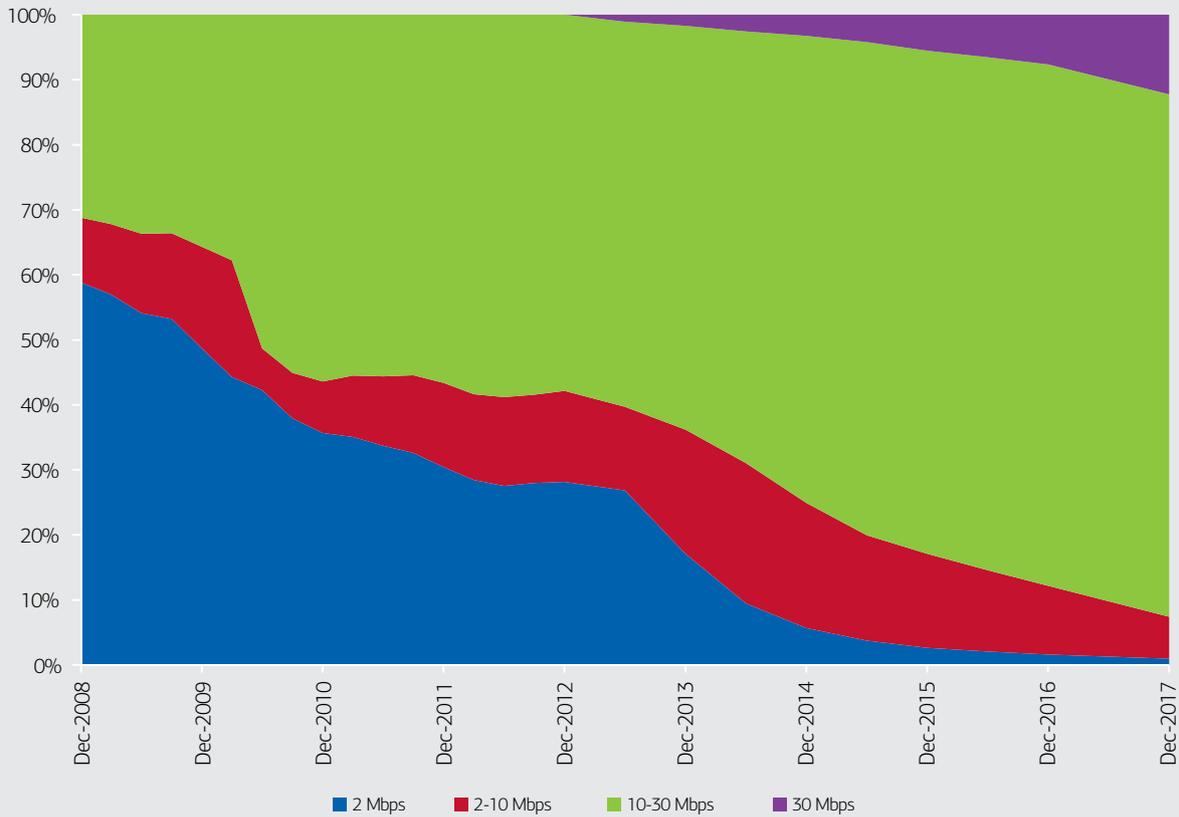
Source: EETT (based on data provided by the licensed operators)

Chart 1.61: Breakdown of nominal broadband lines speed (December 2017)



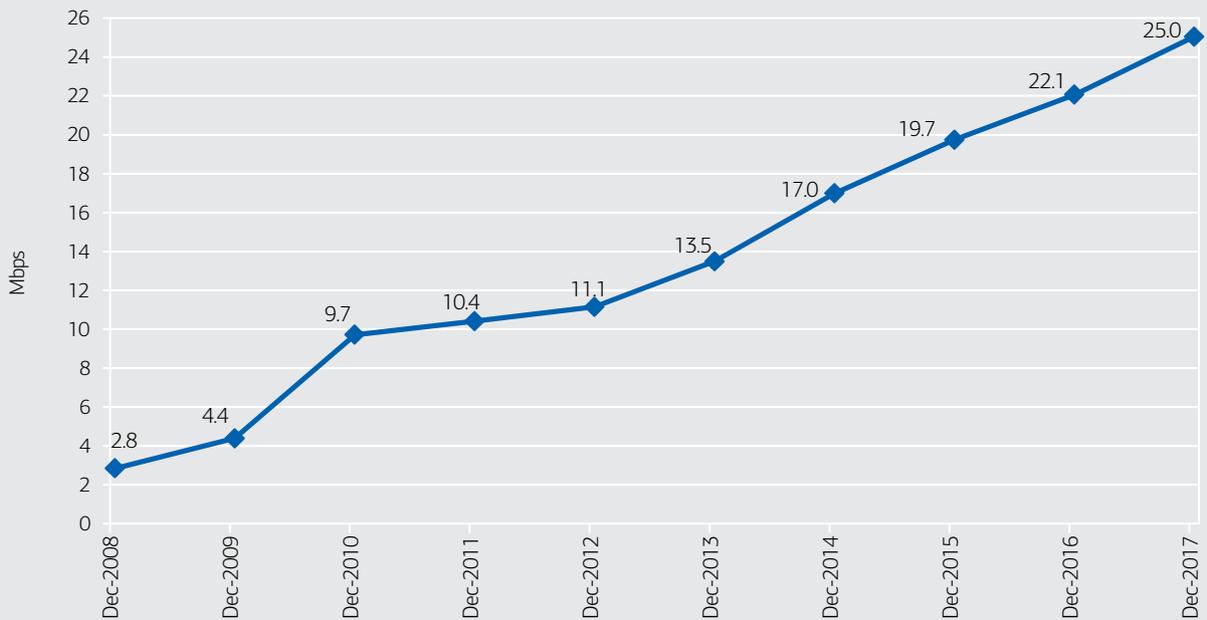
Source: EETT (based on data provided by the licensed operators)

Chart 1.62: Progress of broadband lines speed



Source: EETT (based on data provided by the licensed operators)

Chart 1.63: Progress of the average access speed of retail and wholesale ADSL lines



Source: EETT (based on data provided by the licensed operators)

Table 1.14: Shares of fixed broadband access operators

	Dec. 2017
COSMOTE	45%-55%
VODAFONE	15%-25%
WIND	15%-25%
FORTHNET	10%-15%
CYTA	5%-10%

Source: EETT (based on data provided by the licensed operators)

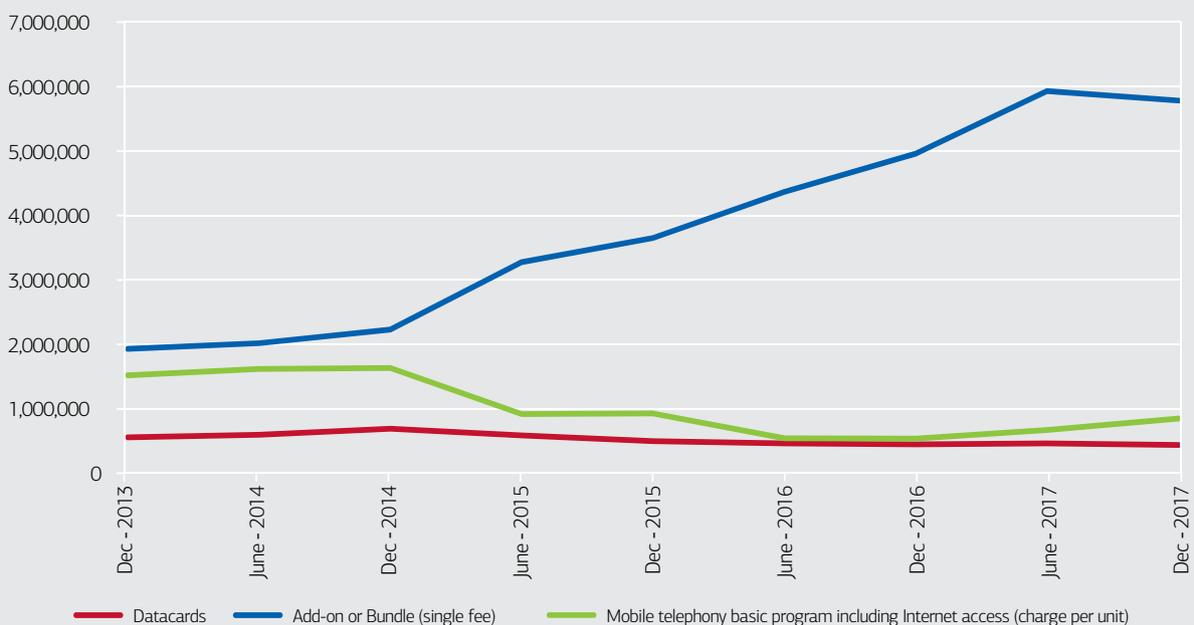
### Mobile broadband

The total active mobile subscribers that used internet data services were 7,074,933 at the end of 2017 compared to 5,947,815 at the end of 2016 (Chart 1.64), marking a 19% annual increase. The majority of those subscribers (6,634,172 compared to 5,499,702 at the end of 2016) either got an add-on package (5,784,042 versus 4,958,572 in 2016) or used internet data services via mobile bundled programs that include, among others, internet access at a single fee (850,130 against 541,130 in 2016). Lastly, 440,761 subscribers access the Internet via datacards.

The progress of the internet traffic via 3G and 4G networks is presented in Chart 1.65. For the first time, most of the traffic was carried through 4G networks (56.7% in December 2017 against 32.6% in December 2016),

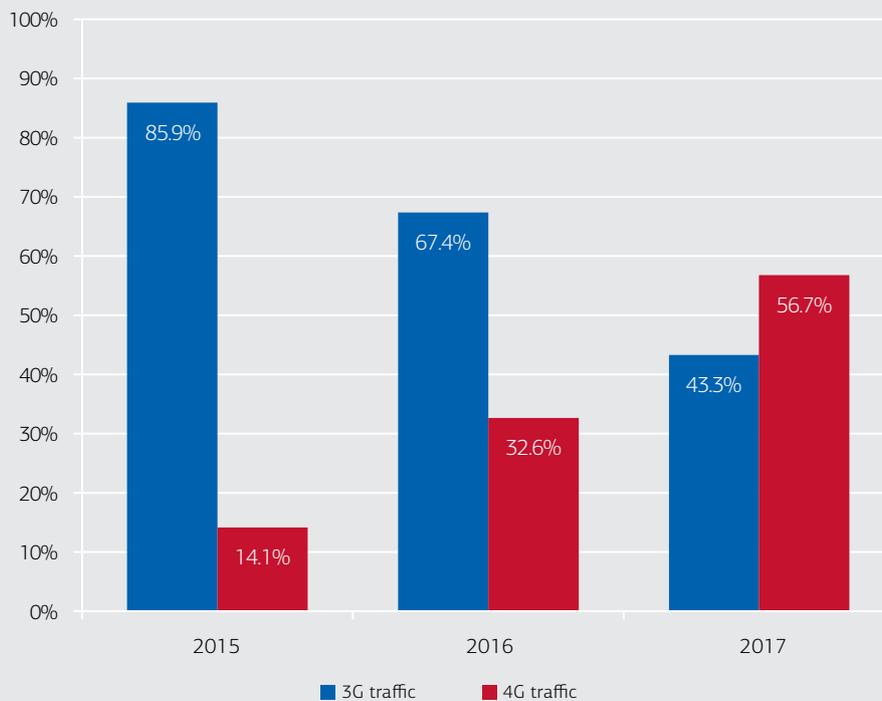
whereas the 3G traffic share keeps diminishing (43.3% in December 2017 versus 67.4% in December 2016). The average traffic per user is estimated at 10.98GB for the 3G subscribers (against 9.33GB in 2016) and 19.57GB for the 4G subscribers (compared to 7.41GB in 2016). As far as the operators' shares on active 3G and 4G subscribers (post-paid and pre-paid) at the end of the year are concerned, COSMOTE leads the way with VODAFONE following (Table 1.15). The highest population coverage percentages for the new generation networks of MTOs are presented in Chart 1.66. During 2017, the 4G population coverage expanded further by five percentage points (98% at the end of 2017 compared to 93% at the end of 2016). The respective 3G population coverage was almost 100%.

Chart 1.64: Progress of mobile telephony subscribers making use of Internet



Source: EETT (based on data provided by the licensed operators)

Chart 1.65: Progress of 3G and 4G networks Internet traffic



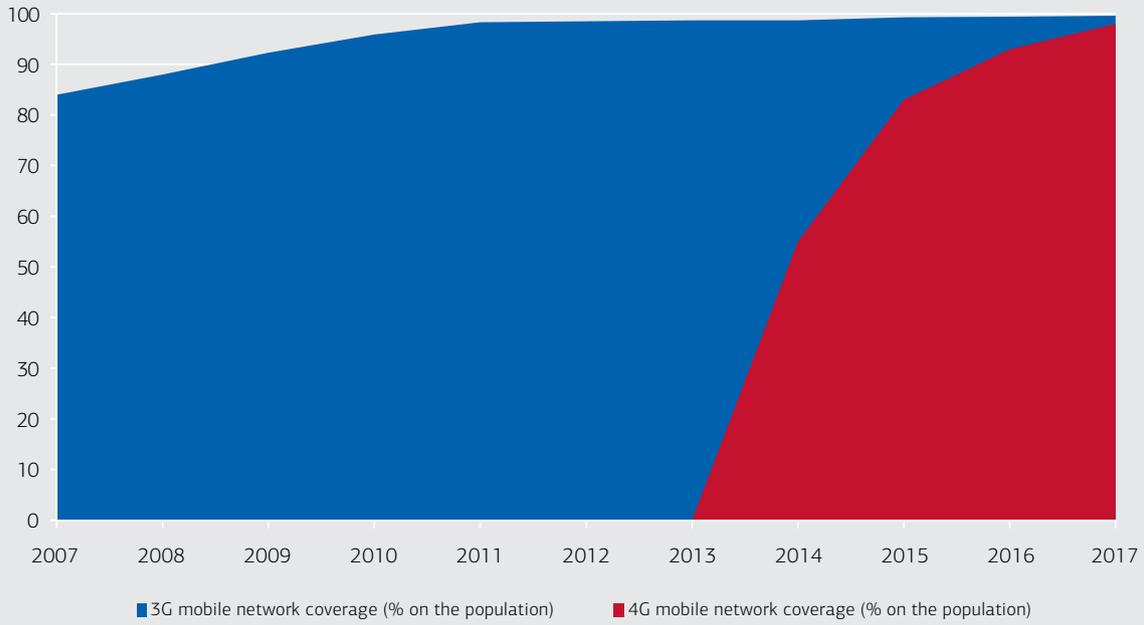
Source: EETT (based on data provided by the licensed operators)

Table 1.15: Shares of the active 3G and 4G subscribers (post-paid and pre-paid)

	2017	
	3G	4G
COSMOTE	55%-65%	55%-65%
VODAFONE	25%-35%	25%-35%
WIND	5%-15%	10%-20%

Source: EETT (based on data provided by the licensed operators)

**Chart 1.66: Mobile network population coverage**



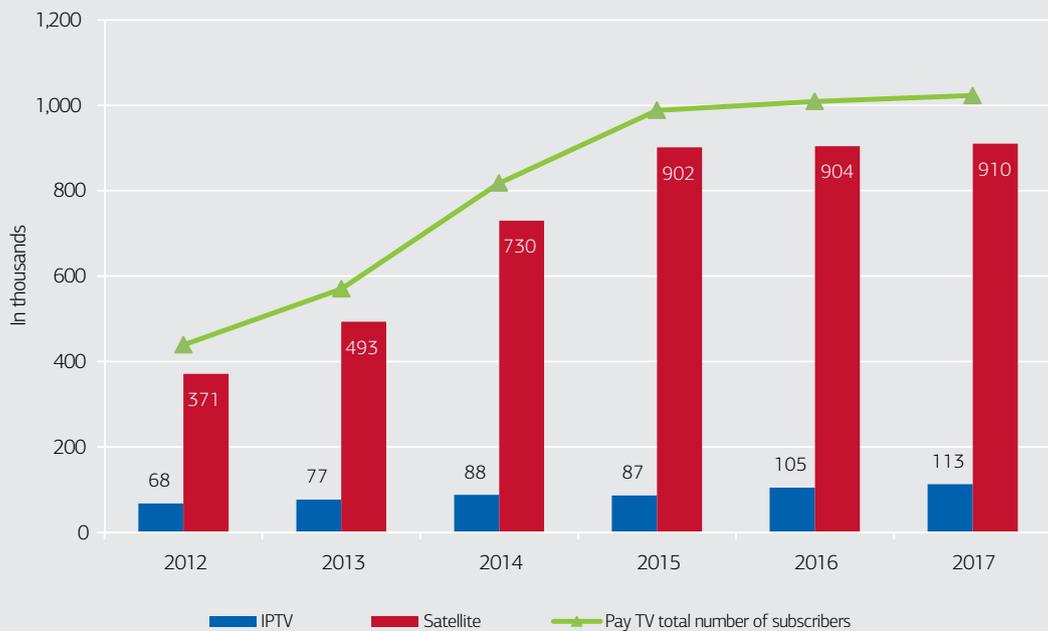
Source: EETT (based on data provided by the licensed operators)

**1.2.6. Pay TV**

with the respective market shares shown in Table 1.16.

Pay TV users (IPTV and satellite) increased by 1.3% compared to 2016 amounting to 1.02 million (Chart 1.67)

**Chart 1.67: Progress of pay TV users**



Source: EETT (based on data provided by the licensed operators)

**Table 1.16: Shares of pay TV operators on subscribers**

	2015	2016	2017
FORTHNET/NOVA	45%-55%	35%-45%	35%-45%
OTE	45%-55%	45%-55%	45%-55%
VODAFONE	-	5%-10%	5%-10%
CYTA	0%-5%	0%-5%	0%-5%
HOL	0%-5%	-	-

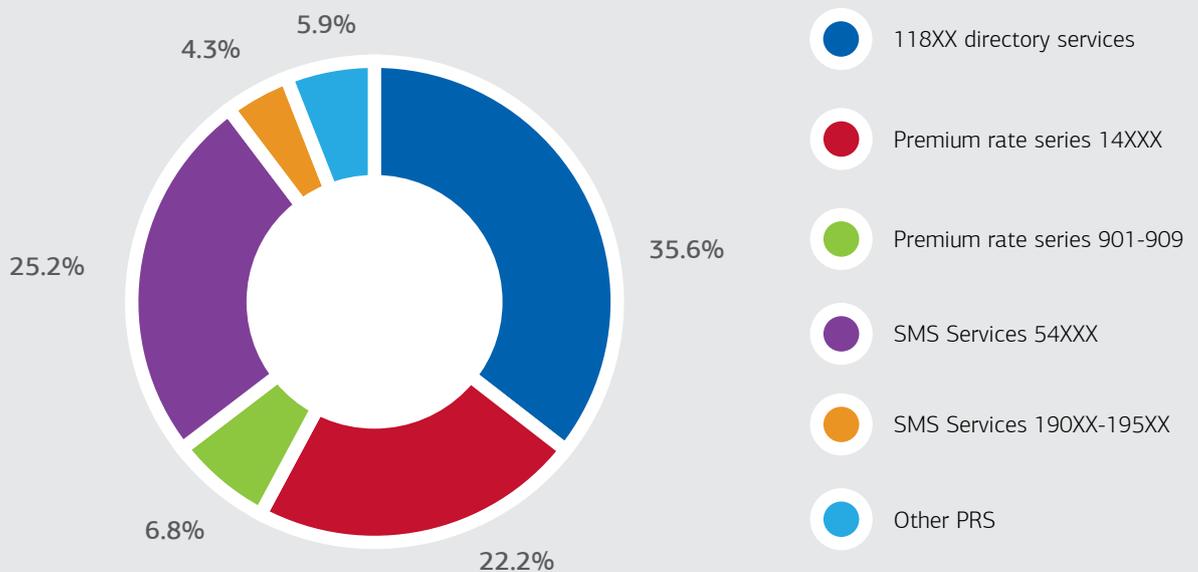
Source: EETT (based on data provided by the licensed operators)

**1.2.7. Premium Rate Services (PRS) and directory services**

The figures have been based on data from 25 active operators out of a total of 60 licensed companies. The total invoiced traffic was 50.6 million minutes versus 62.1 million minutes in 2016 and 57.7 million calls and/or messages (89.7 million at the end of 2016), generating revenues amounting to 103.1 million euros, thus reduced by 14.3% compared to 2016. Revenues from 118XX directory

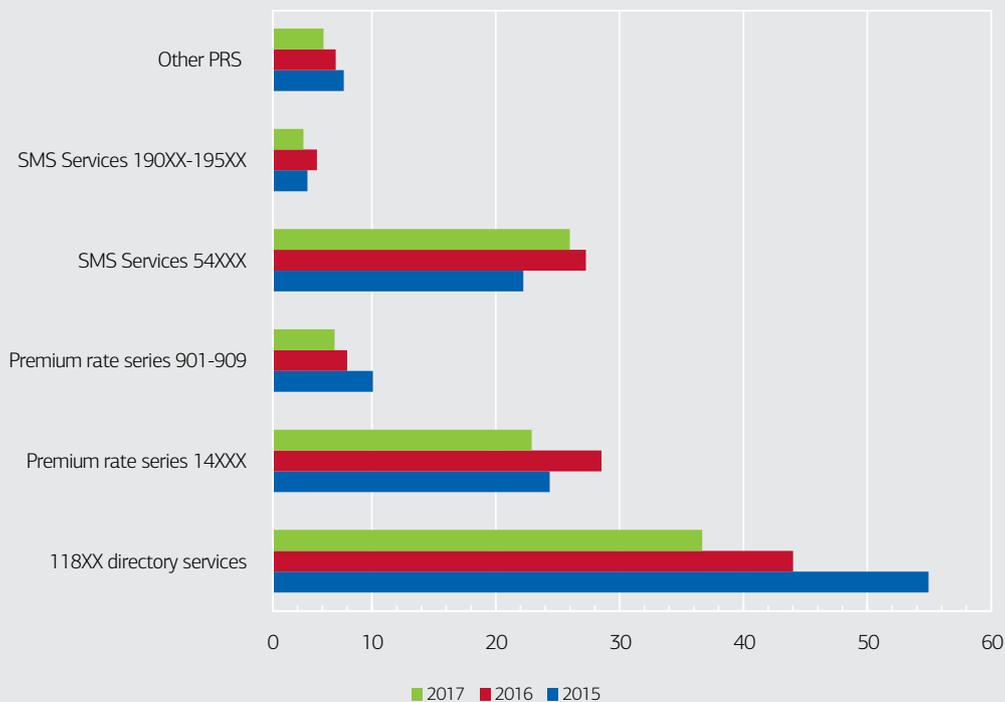
services reached 37 million euros corresponding to 35.6% of the total market having lost though about 33% compared to 2015. Revenues from SMS services (SMS 54XXX and 19XXX-195XX) came second in line with 30.4 million euros, representing 29.5% of the total market value, followed by revenues from premium rate services (14XXX and 901-909) with 29% and an estimated absolute value of 29.9 million euros (Charts 1.68 and 1.69).

**Chart 1.68: PRS and directory services shares based on revenues**



Source: EETT (based on data provided by the licensed operators)

Chart 1.69: Progress of PRS and directory services total revenues



Source: EETT (based on data provided by the licensed operators)

### 1.2.8. Price Observatory's comparison of retail prices (Pricescope)

Based on data entered by the telecommunications operators during 2017 in the Price Observatory (Pricescope)<sup>19</sup>, the companies CYTA, FORTHNET, OTE-COSMOTE, VODAFONE, WIND offered almost 1,300 products/packages in the domestic market<sup>20</sup> (Chart 1.70), with approximately 90,000 possible and dynamically produced combinations (henceforth product solutions) of basic products, add-ons and offers. More specifically and with regard to the individual operators:

- COSMOTE still seems to have marginally more products available than the other operators (Chart 1.71).
- COSMOTE and WIND are based mainly on the add-on programs (53% and 56% respectively), whilst VODAFONE lays emphasis mostly on its basic programs (63%) (Chart 1.72).

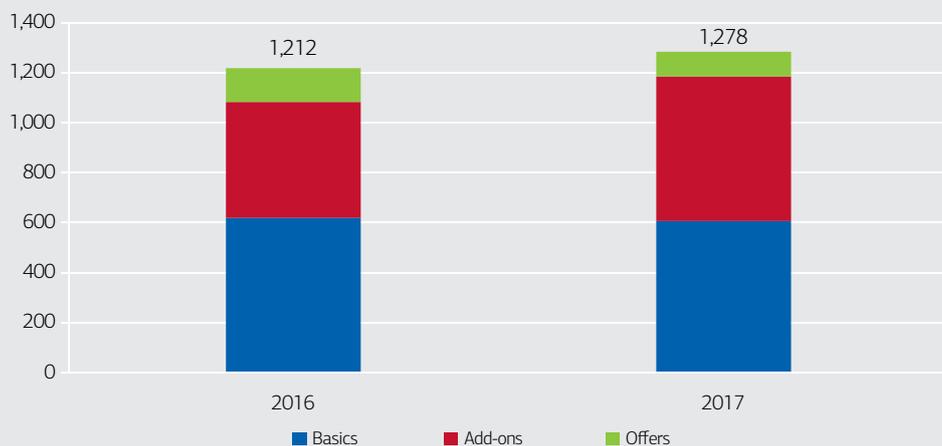
- One out of ten products is marketed as an offer, while more than four out of ten products are characterized as an add-on, demonstrating the need for multiple product solutions, that can be bundled, differentiated and customized.
- Most of the products are in the mobile market. Approximately 52% are mobile voice products, while another 10% refer to mobile broadband products. Thus, around 38% of the products have fixed services following an upward trend compared to 2016 (32%) (Chart 1.74 and 1.75).
- Just 3% of the mobile pre-paid voice products are categorized by the operators as basic, whereas the analogy between basic and add-ons programs of the post-paid mobile market seems to be higher than that of the fixed telephony market's (Charts 1.76 to 1.78), thus reversing the 2016 pattern (Chart 1.79).

19. The information of this section derives from data entered by the operators OTE-COSMOTE, VODAFONE, WIND, CYTA, FORTHNET in the data repository of Pricescope.

20. Setting aside commercially available products, there are also additional products registered that, even though are not commercially active, customers favor them and still use them. In addition, product differentiation does not solely depend on a different brand name but also on other specific features, such as the binding duration attached to a telecommunications service contract.

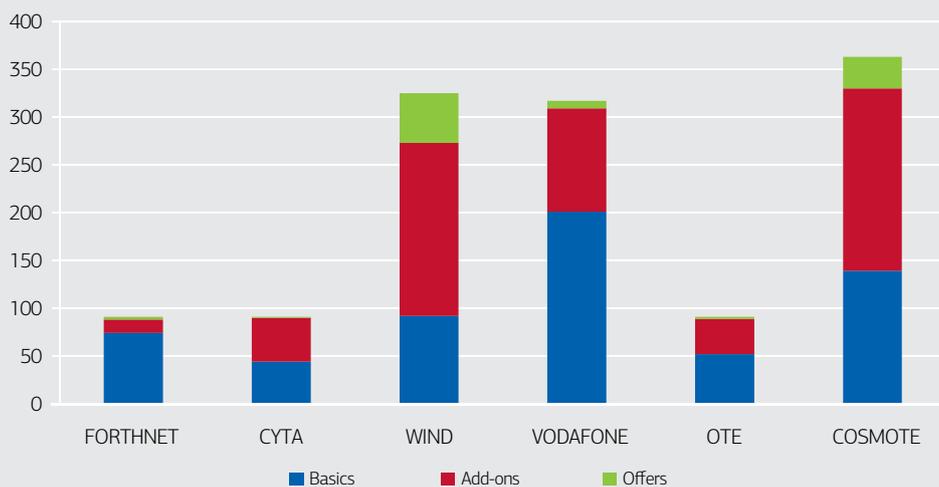
- Approximately six out of ten products are exclusively addressed to residential customers. Conversely, just one out of four products is business-oriented, whereas there is also a range of products which are seemingly addressed to both groups (Chart 1.80).
- The pre-paid mobile products are mainly addressed to residential customers; the post-paid mobile market seems to offer, in absolute values, more business products/programs whereas proportionally most of business products/programs are found in the post-paid mobile broadband access section (Chart 1.81).
- COSMOTE and WIND programs are primarily (>70%) addressed to residential customers, while VODAFONE's programs are almost equally balanced among residential and business customers (Chart 1.82).
- Most of the post-paid mobile programs (51%) consist of a monthly rental up to 60 euros (40 euros in 2016) with an average price<sup>21</sup> of 41 euros (26 euros in 2016), a median price<sup>22</sup> of 44 euros (26 euros in 2016) and a call allowance up to 550 minutes (against 360 minutes in 2016). All prices for 2017 include the tax levied on all mobile subscribers (Chart 1.83).

**Chart 1.70: Volume of available products domestically compared to last year**



Source: EETT

**Chart 1.71: Commercially available products per operator**

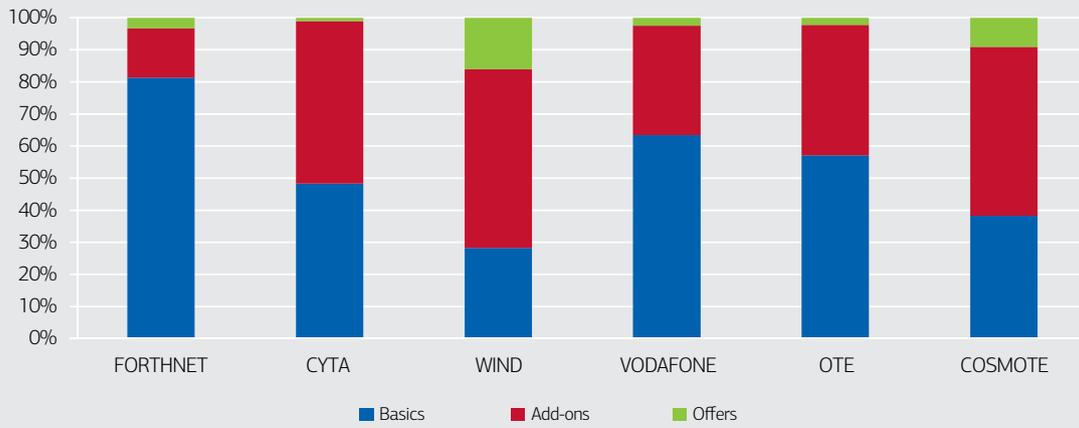


Source: EETT

21. The average price (or arithmetic average) is the sum of the values of a group of numbers divided by their volume.

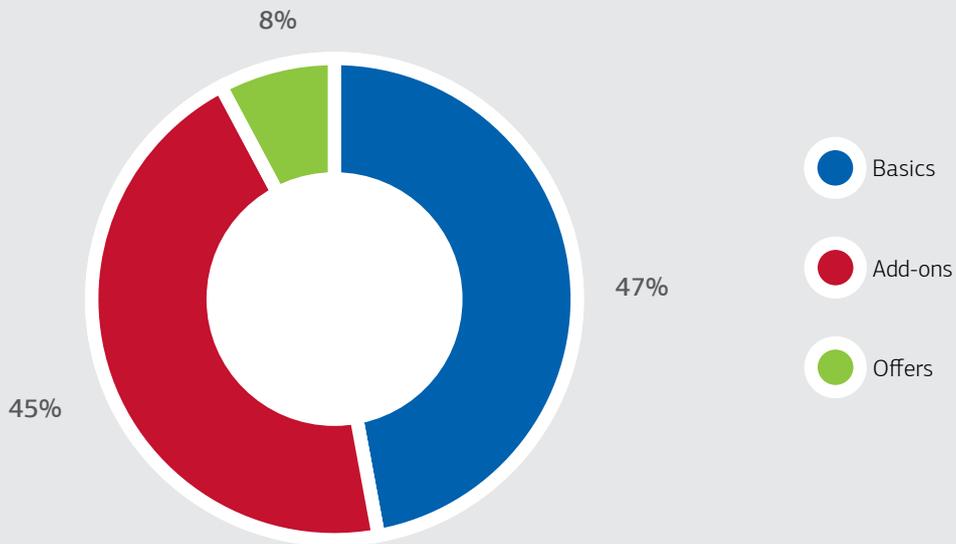
22. Median is the average of a group of numbers sorted by size. It is the number right in the middle, so that 50% of the sorted numbers are above the median and the other 50% below the median.

Chart 1.72: Commercially available products per operator (%)



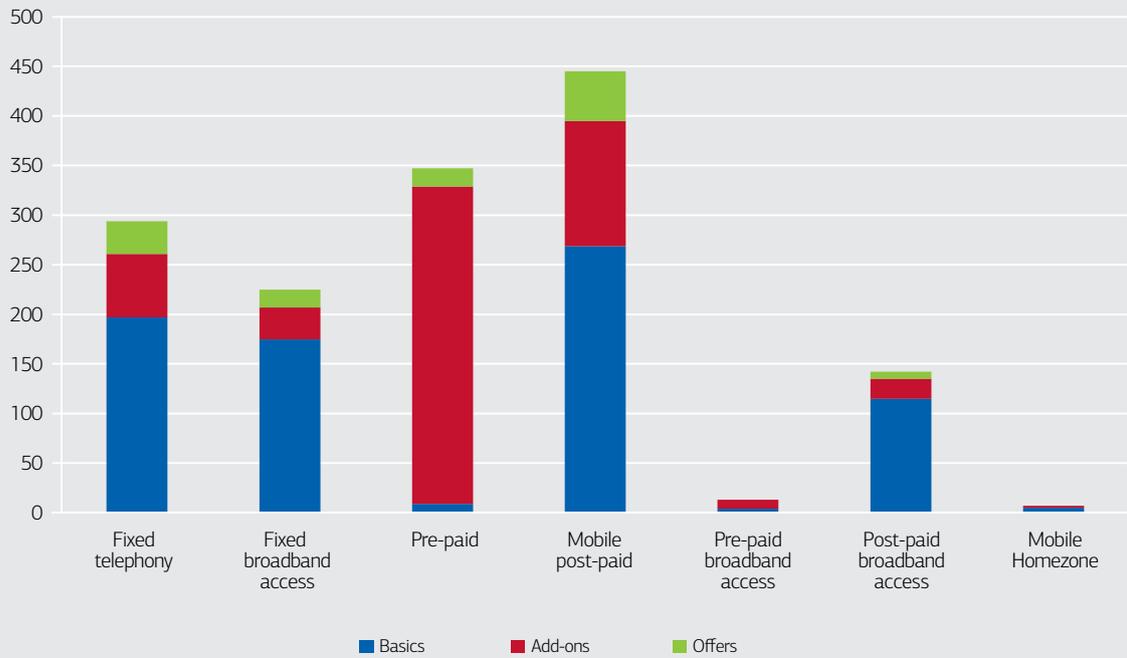
Source: EETT

Chart 1.73: Product type breakdown in the market



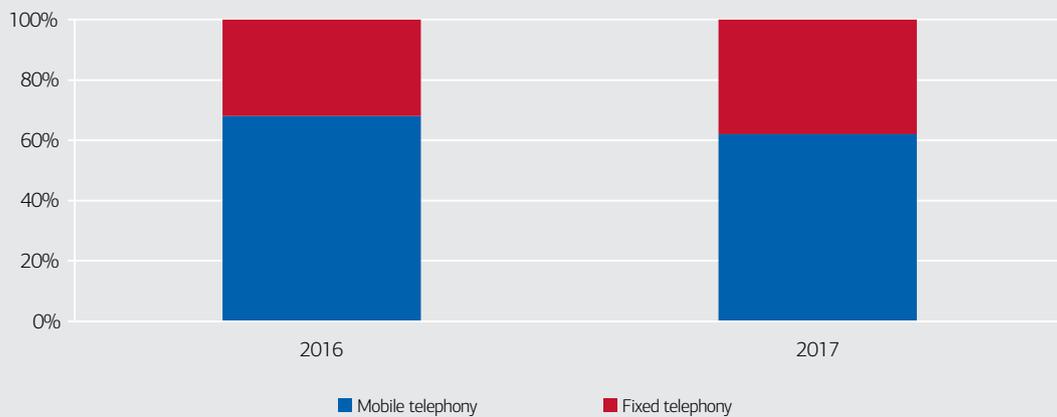
Source: EETT

Chart 1.74: Number of products per service



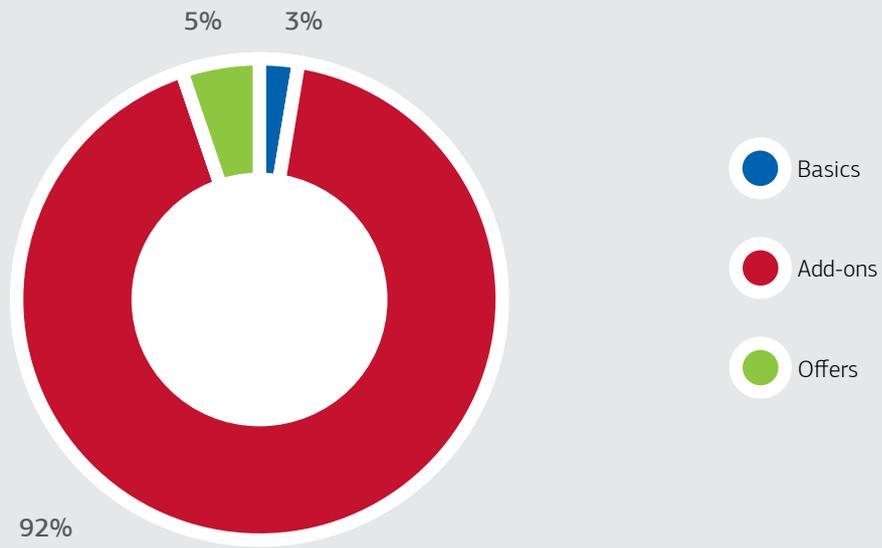
Source: EETT

Chart 1.75: Fixed versus mobile products



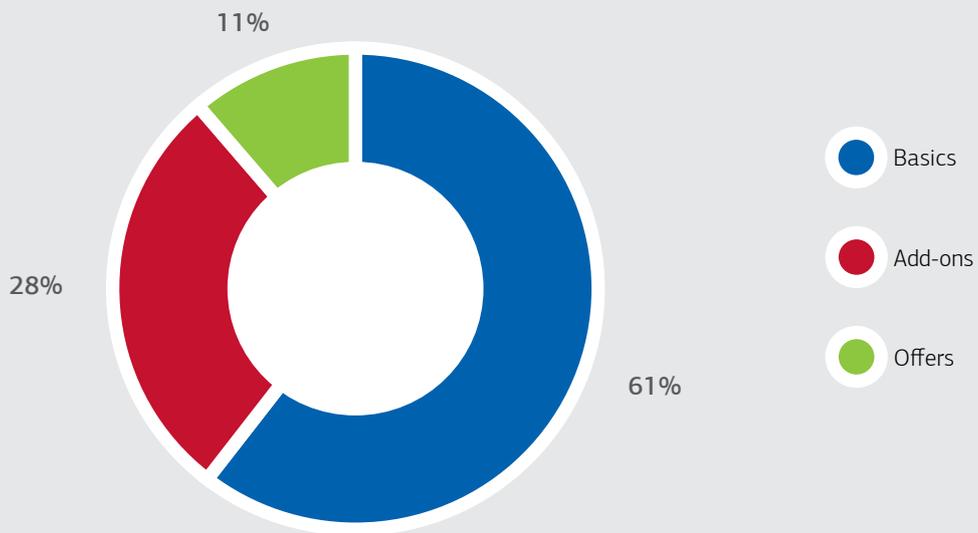
Source: EETT

Chart 1.76: Basics to add-ons ratio in pre-paid telephony



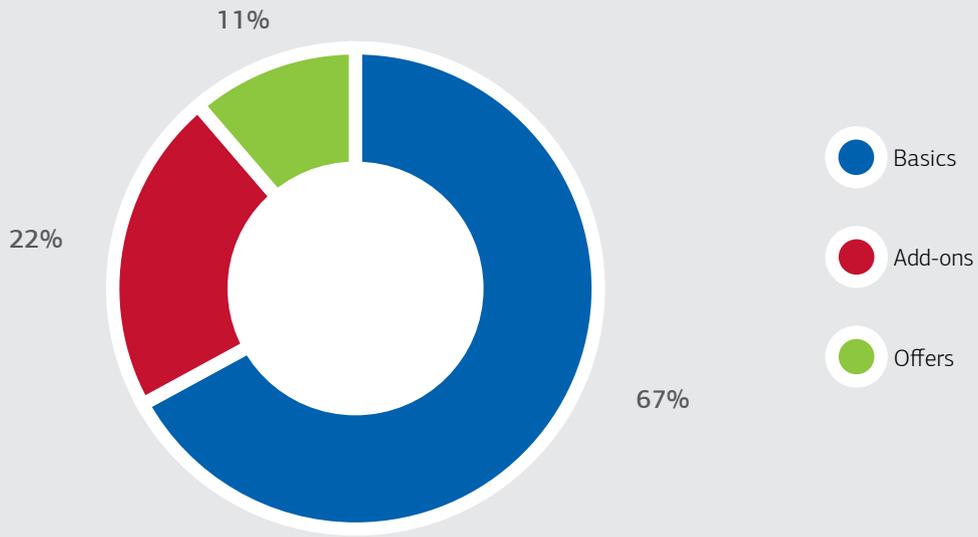
Source: EETT

Chart 1.77: Basics to add-ons ratio in mobile post-paid telephony



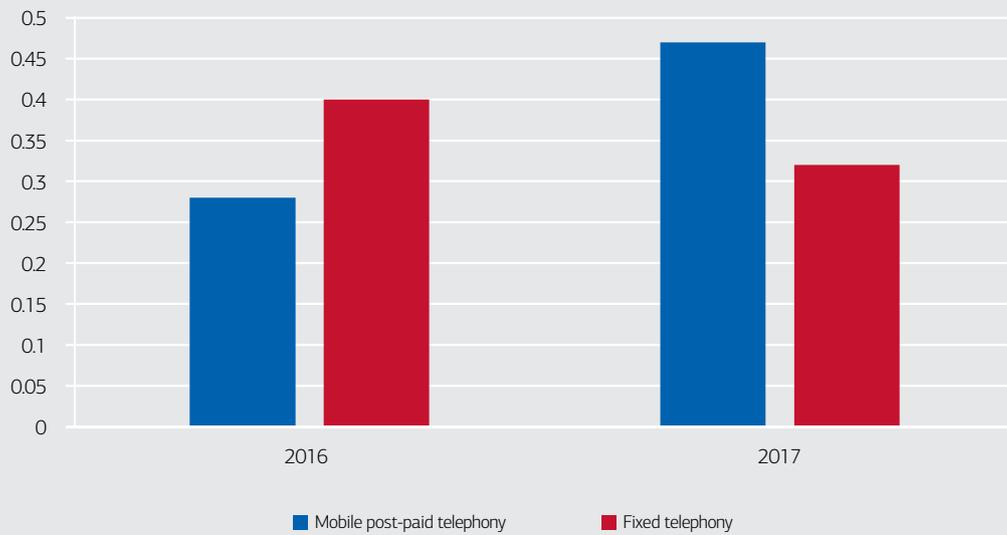
Source: EETT

Chart 1.78: Basics to add-ons ratio in fixed telephony products



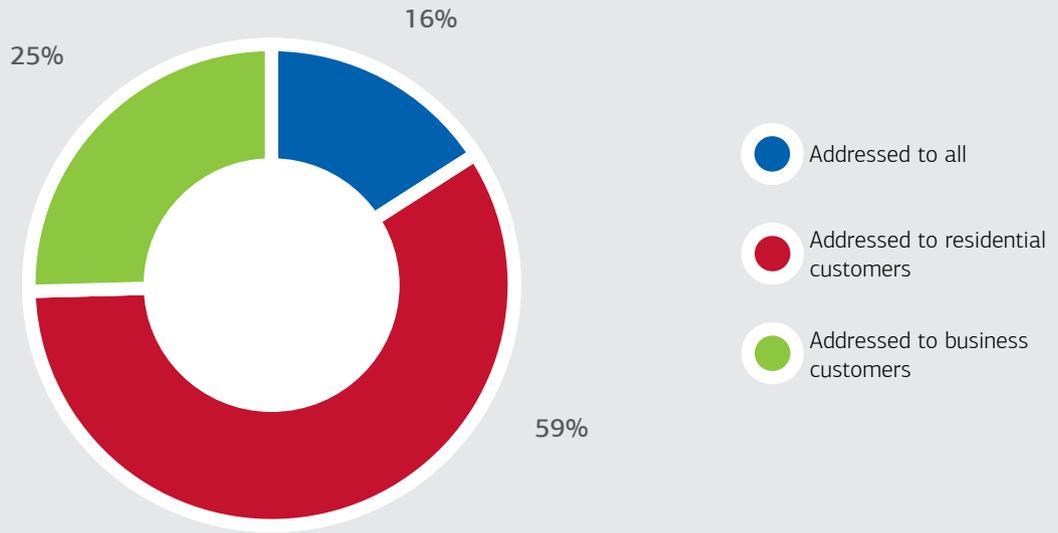
Source: EETT

Chart 1.79: Basics to add-ons ratio in mobile post-paid and fixed telephony



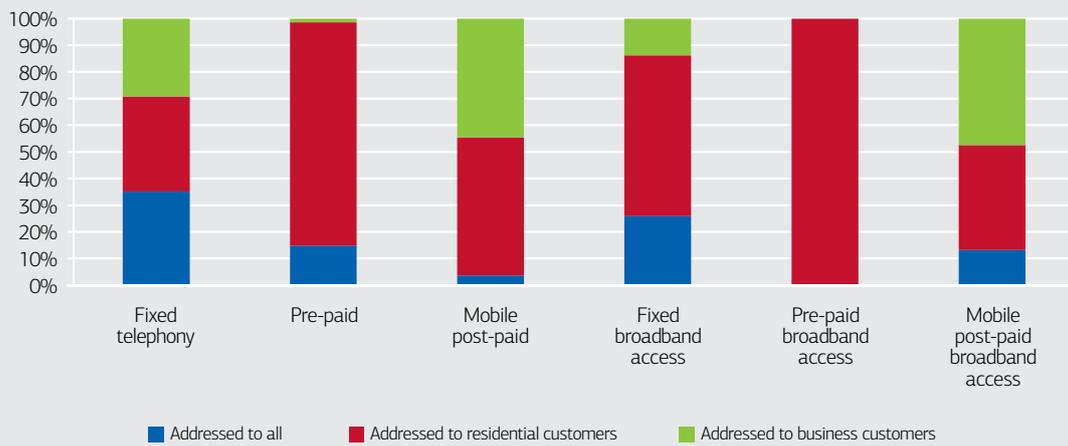
Source: EETT

Chart 1.80: Target-markets of telecommunications products



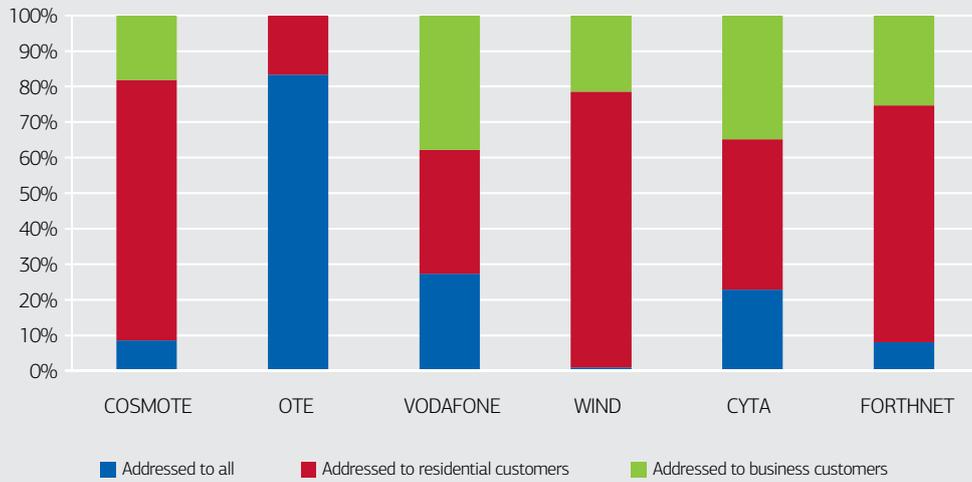
Source: EETT

Chart 1.81: Product breakdown per service in the target-markets



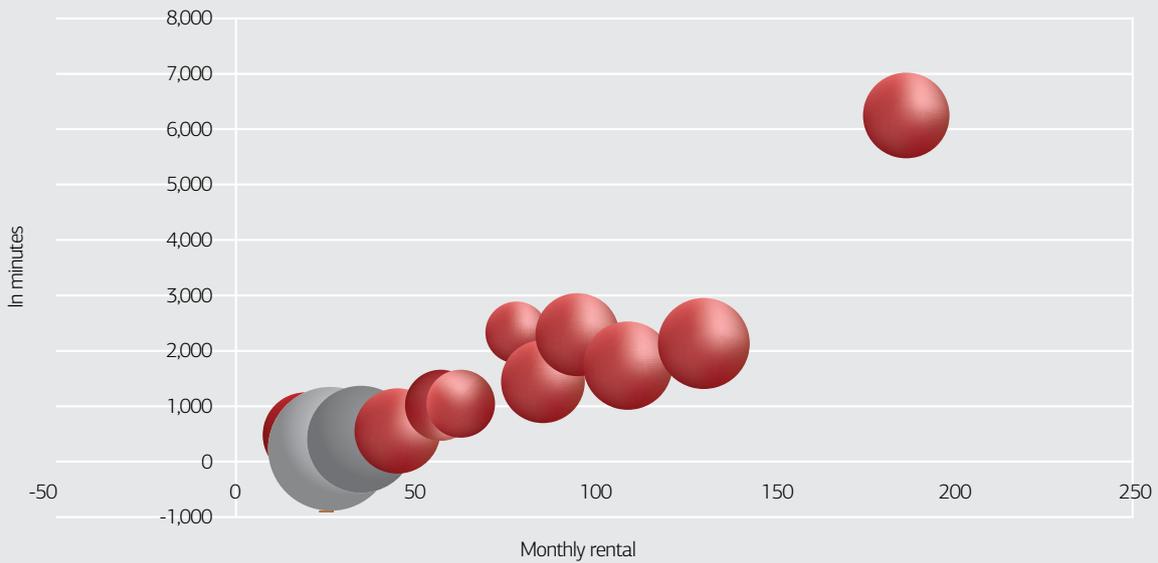
Source: EETT

Chart 1.82: Product breakdown per operator in the target-markets



Source: EETT

Chart 1.83: Product concentration in the mobile post-paid market



Source: EETT

### 1.2.9. Comparison of greek and european market indicators<sup>23</sup>

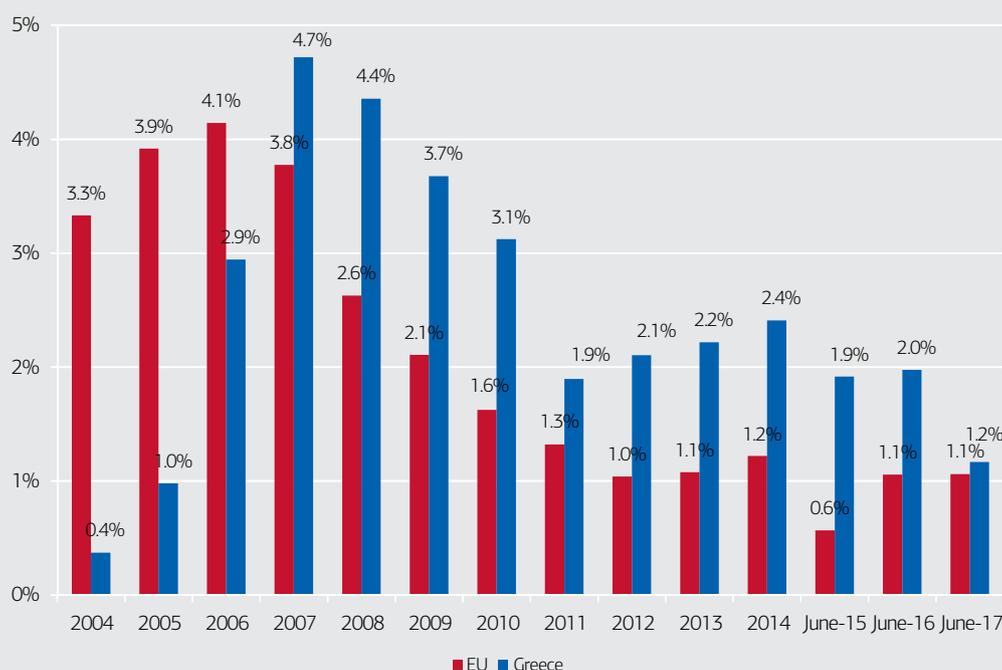
#### Fixed broadband

Broadband connections penetration in Europe progressed at a steady rate. In June 2017, the penetration of the fixed broadband, i.e. the number of broadband connections per 100 residents, reached 33.7% compared to 32.7% in June 2016. The respective rates for Greece were 33.9% and 32.8%, thus ranking it in the 10<sup>th</sup> position among EU member states, a place that it held last year as well. Greece was still marginally above the European average exhibiting a slightly higher growth rate of broadband penetration than the European average, i.e. 1.2% against 1.1% respectively, thus having achieved the convergence goal with Europe in

terms of penetration rate irrespective of speed or technology (Charts 1.84-1.87). It shall be mentioned that by the end of 2017, broadband penetration rate stood at 35.2% in the population (versus 33.3% at the end of 2016).

Also, the demand for ultra-fast broadband lines continued to increase, and as a result, broadband connections at speeds over 30Mbps accounted approximately for 44.4% of total connections in June 2017, with Greece holding the last position with 9.95% versus 7.1% in June 2016 (Chart 1.88). It shall be mentioned that by the end of 2017, the respective figure was 12.1% (see also section 1.2.5.), thus presenting an important convergence challenge with the EU in terms of fixed broadband penetration.

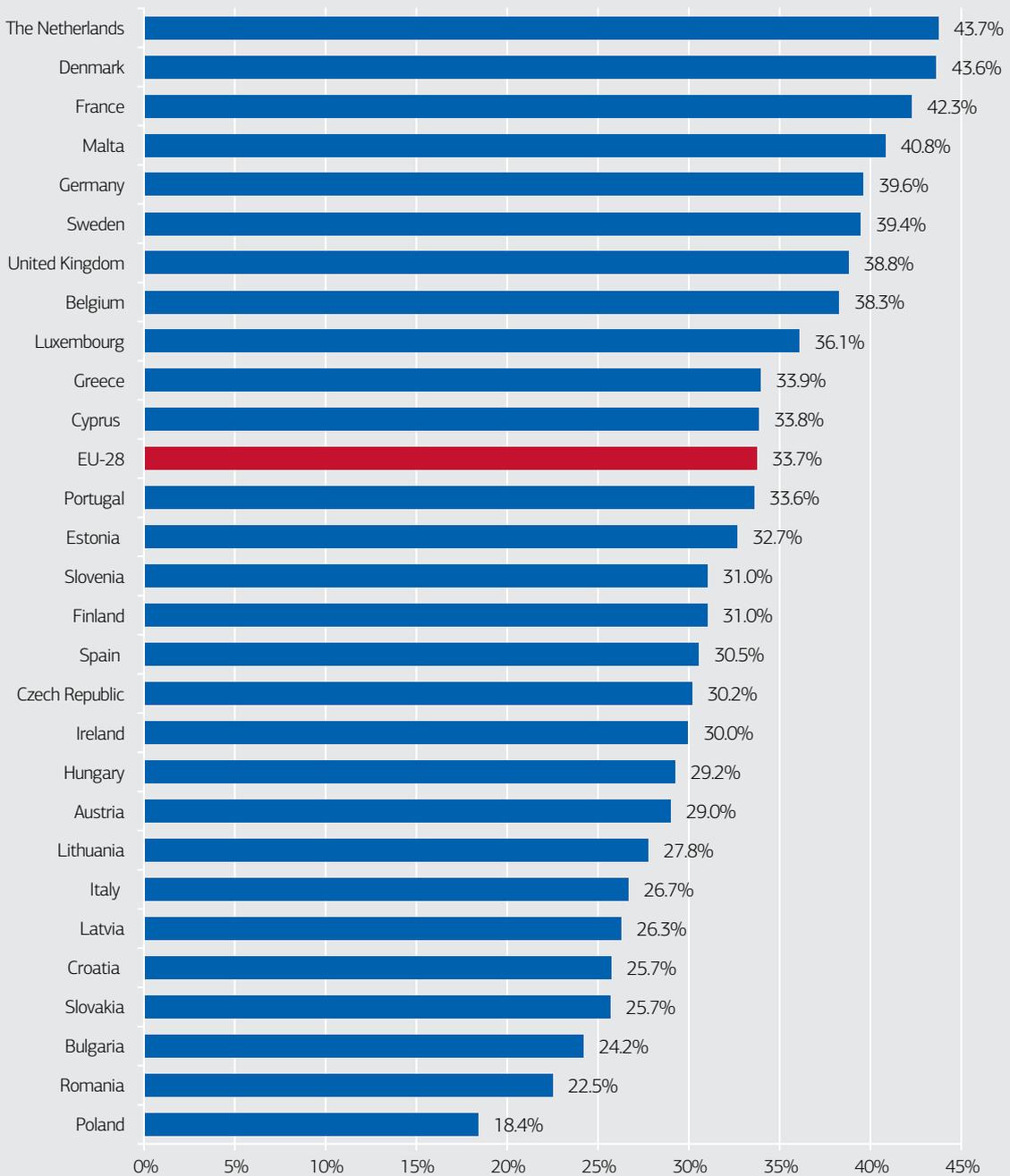
Chart 1.84: Broadband penetration increase in Greece and the EU



Source: EETT (based on Digital Economy & Society Index data)

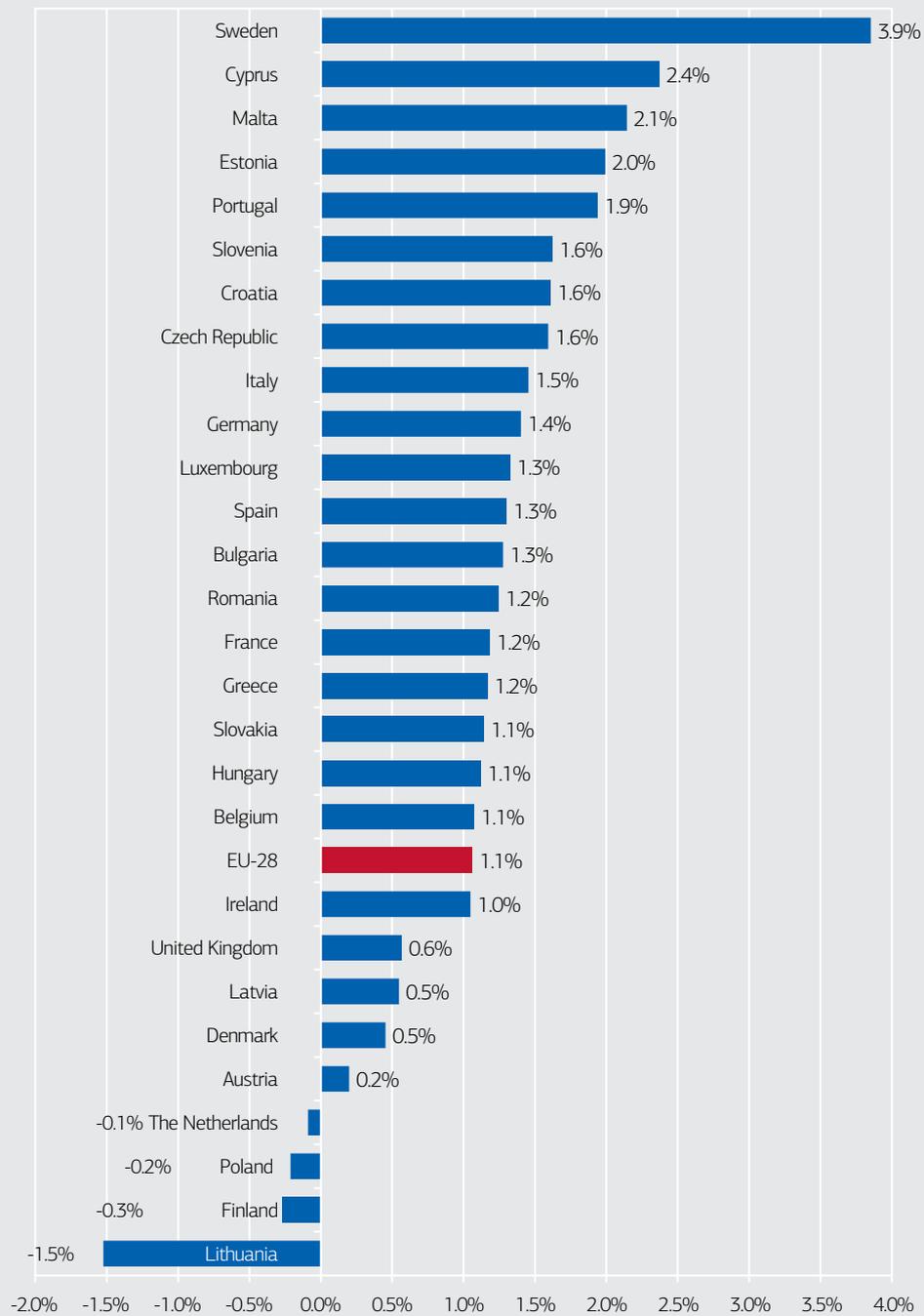
23. The data presented for Greece lagged at least a semester compared to aforementioned data.

Chart 1.85: Broadband penetration in Greece and the EU (June 2017)



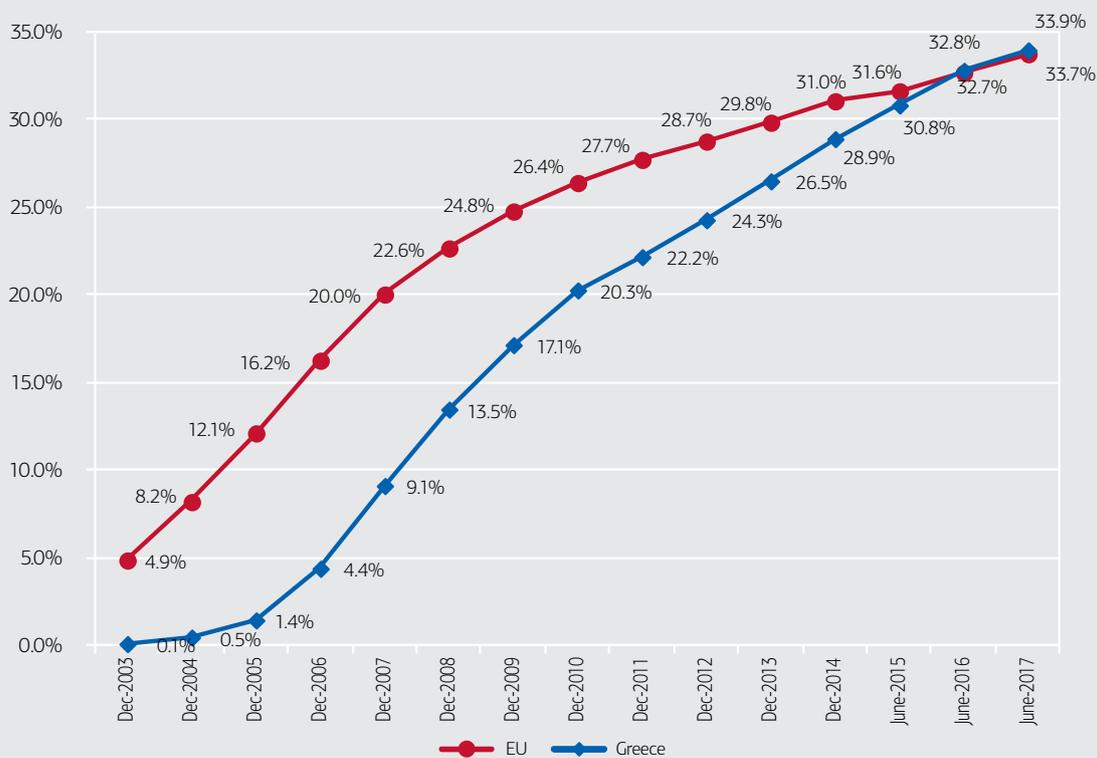
Source: EETT (based on Digital Economy &amp; Society Index data)

Chart 1.86: Broadband penetration change in the EU (June 2017)



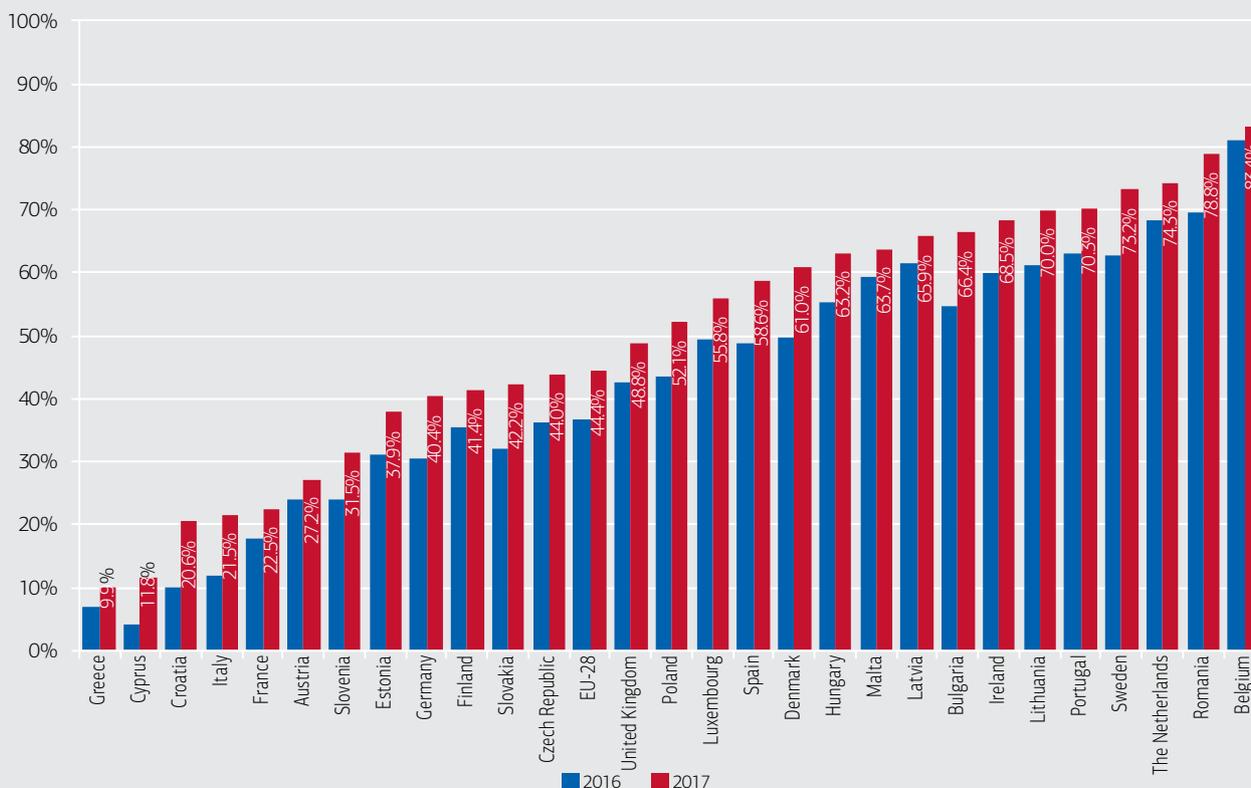
Source: EETT (based on Digital Economy &amp; Society Index data)

Chart 1.87: Broadband penetration progress in Greece and the EU



Source: EETT (based on Digital Economy &amp; Society Index data)

Chart 1.88: Percentage of lines at speed &gt;30 Mbps in the EU (June 2017)



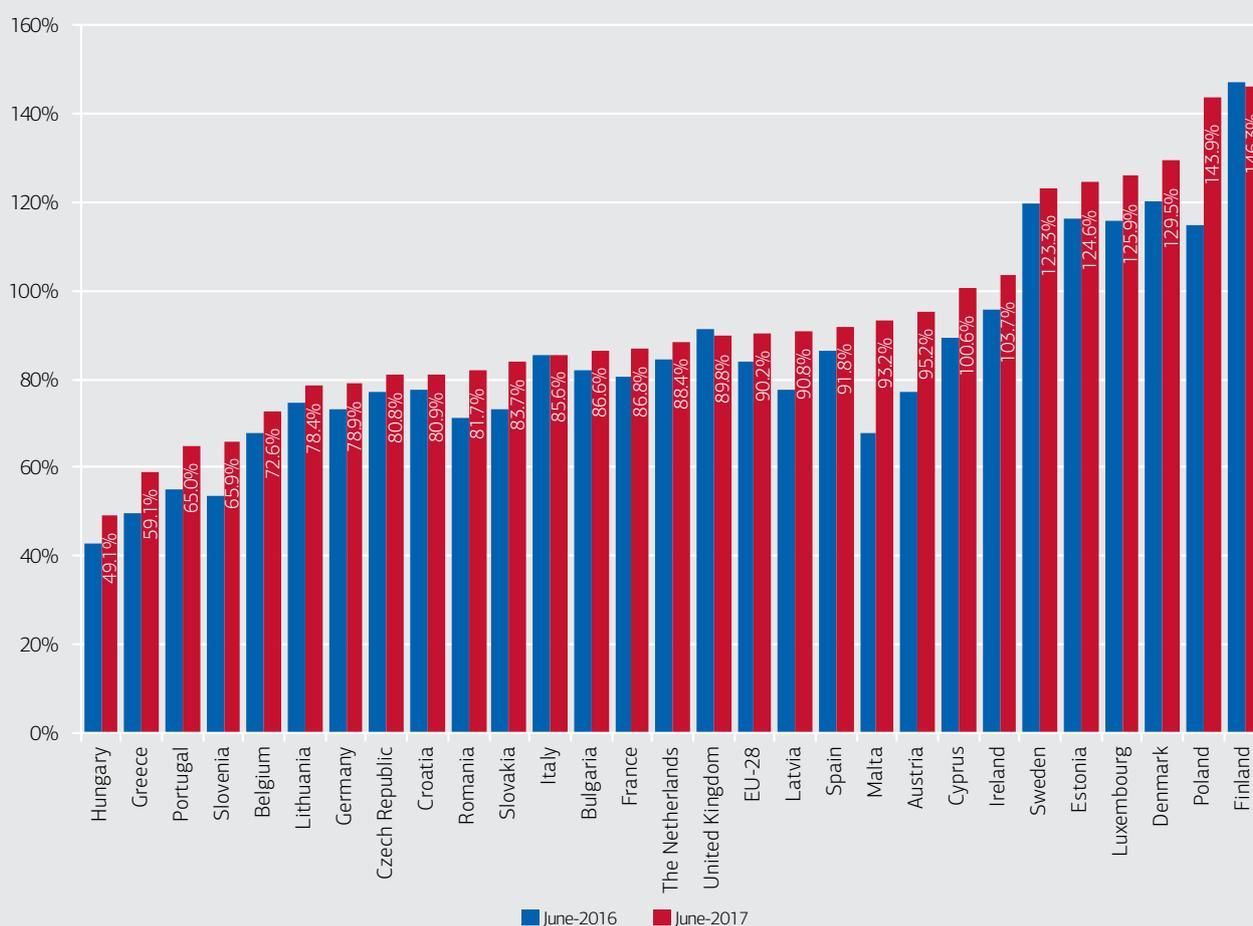
Source: EETT (based on Digital Economy &amp; Society Index data)

## Mobile broadband

Mobile broadband kept growing at a rapid pace, attaining a 90.2% penetration rate in the EU in June 2017 (connections per 100 residents) compared to 80.7% in June 2016 (Chart 1.89). Mobile broadband in eight countries (Finland, Poland, Denmark, Luxembourg, Estonia, Sweden, Ireland and Cyprus) was over 100%. Greece, with a 59.1% penetration rate, is

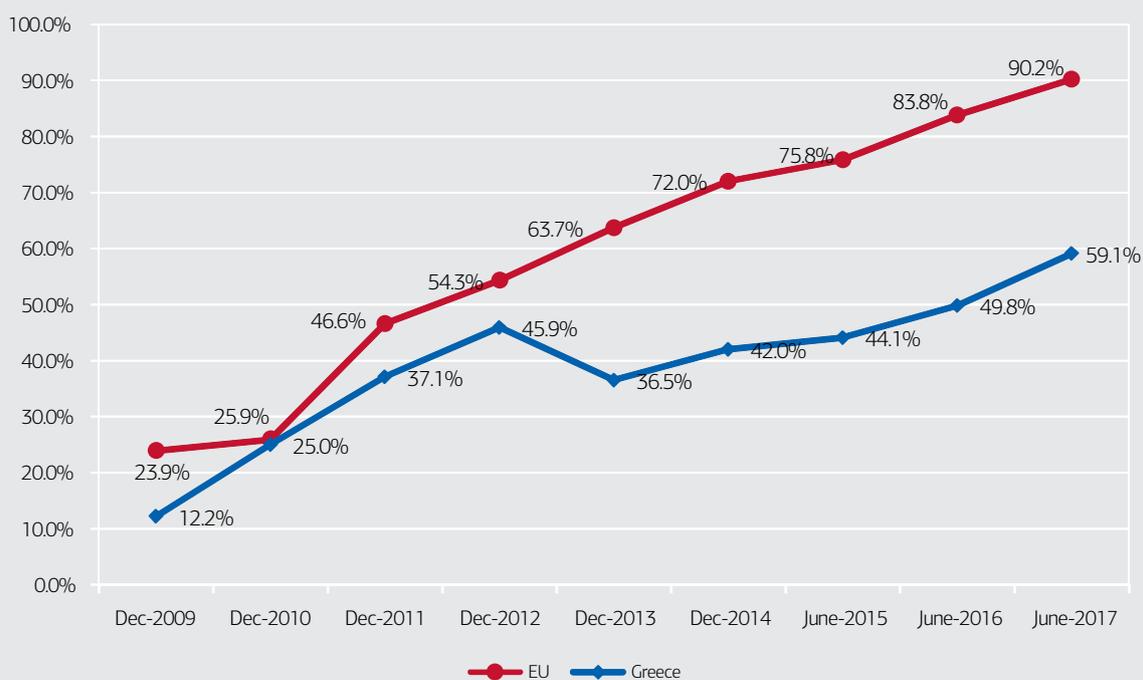
among the last in row in mobile broadband access along with Hungary and Portugal, exhibiting, though, a higher growth rate than the European average since it gained 9.3 percentage points against EU's 6.4 percentage points (Chart 1.90). It shall be mentioned that by the end of 2017, the respective figure was 65.7% in population (against 55.2% at the end of 2016).

Chart 1.89: Mobile broadband penetration (per 100 residents)



Source: EETT (based on Digital Economy & Society Index data)

Chart 1.90: Mobile broadband penetration progress in Greece and the EU



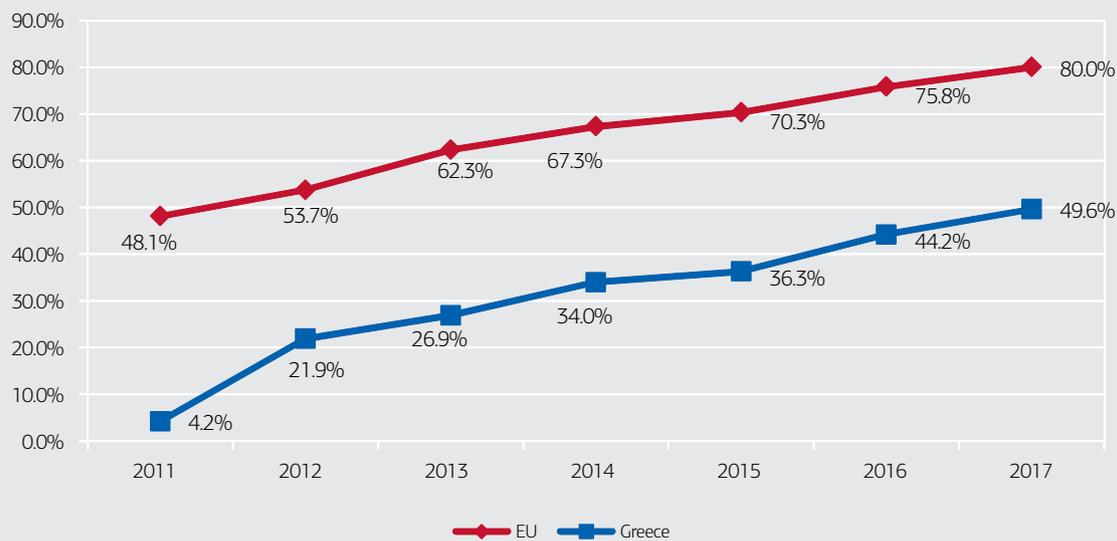
Source: EETT (based on Digital Economy & Society Index data)

### Network infrastructure development

The Next Generation Access networks (NGAs) have further expanded covering 80% of households in 2017 compared to 75.8% in 2016. Greece attained a 49.6% coverage ranking below the European average, achieving though a higher growth rate than the European one (5.7% against 4.2%) (Chart 1.91). Covering rural areas with fixed broadband NGAs

will be very challenging since Greece (13.6%) is way behind than the European average (46.8%) (Chart 1.92). At the same time, the 4G coverage of residential areas (average coverage by the telecommunications operators in each country) stood at 97.9% of the population in June 2017 with Greece lagging slightly behind with 97.9% coverage (Chart 1.93).

Chart 1.91: NGA broadband coverage in the EU and Greece

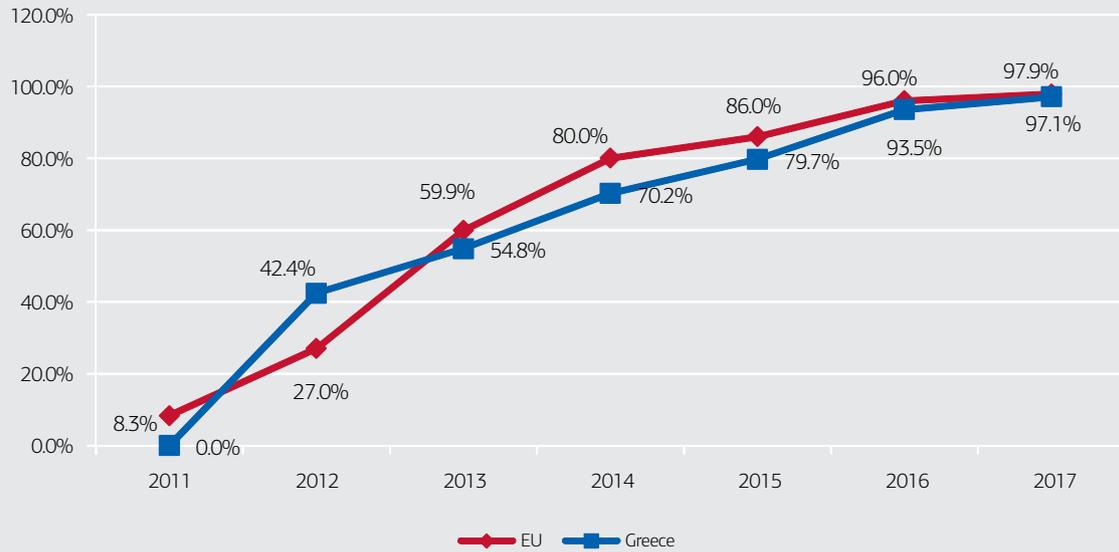


Source: EETT (based on Digital Economy &amp; Society Index data)

Chart 1.92: Rural NGA broadband coverage in the EU and Greece



Source: EETT (based on Digital Economy &amp; Society Index data)

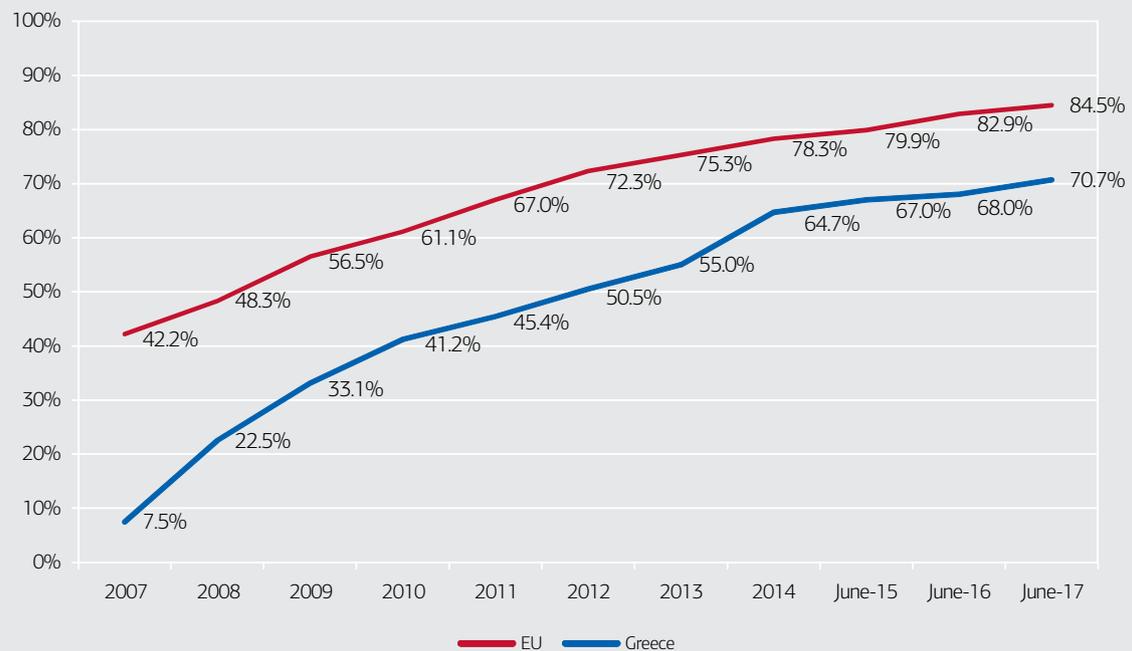
**Chart 1.93: 4G Mobile broadband coverage in residential areas**


Source: EETT (based on Digital Economy & Society Index data)

### Internet access

Based on the latest data available for 2017, 70.7% of Greek households have Internet access lagging behind almost 14% from the European average (84.5%). This record is

comparatively better compared to last year's 15% gap and is attributed to the higher growth rate that Greece enjoys compared to the EU, namely 2.7 versus 1.6 percentage points.

**Chart 1.94: Households having Internet connection**


Source: EETT (based on Digital Economy & Society Index data)

## 2. Postal services

### 2.1. The greek postal market

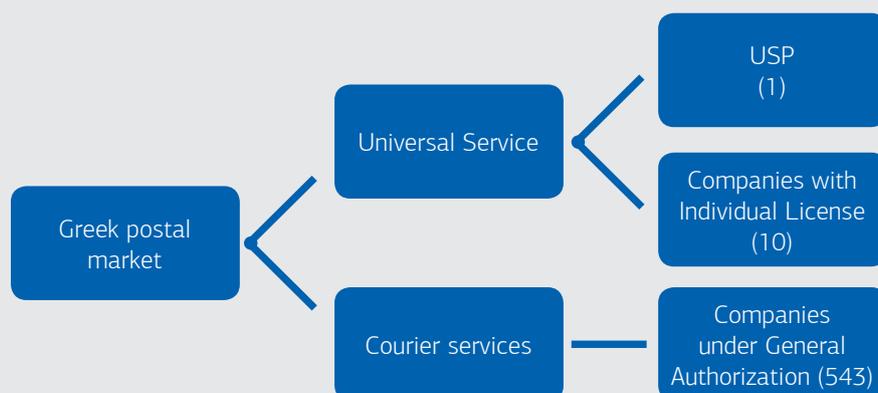
The postal market in Greece in 2017 consists of two sectors:

a) the Universal Services (US) sector, with the USP and 10 private companies holding an Individual License and

b) the courier services sector, with 543 companies under General Authorization.

The designated by law Universal Services Provider (USP), is Hellenic Post (ELTA).

Chart 2.1: Number of companies in the greek postal market



Source: EETT (Register of postal services providers)

### 2.2 Evolution of key figures of the postal services market in Greece

#### 2.2.1 Financial data from the published financial statements

The postal services sector showed a positive trend in 2017, as presented in Chart 2.2.

The following analysis takes into account the published financial statements of the USP (ELTA) and eight (8) of the largest companies operating in the courier sector (under General Authorization). It is noted that for one of these companies the data included in the analysis are an estimate as they were not available until the drafting of the report.

**Chart 2.2: Evolution of the market turnover index for postal and courier activities**



Source: HELLASTAT, Evolution of the turnover index for the postal and courier activities sector, base year 2010=100 (working day adjusted data).

### Turnover

The postal services sector showed an upward trend compared to 2016. Chart 2.3 shows the turnover of the postal market for the last five years. In 2017, the postal companies under General Authorization showed an

improving trend on turnover of 6% compared to previous year, while the USP's turnover remained at the same level as in 2016, with a marginal decrease.

The postal companies' turnover may include data from non-postal activities, since some companies under General

**Chart 2.3: Turnover of postal companies**



Source: Annual published financial statements

Authorization operating as well in other sectors of the economy. Consequently, there may be a discrepancy in relation to the amount of revenue analyzed below, which only concerns the postal market.

### Profitability

The key financial data relevant to the profitability of the postal companies are listed in Table 2.1. The gross profit margin is quite low for the postal companies and the USP.

**Table 2.1: Key financial data of postal companies (in million euros), 2017**

	Turnover	Gross profit	Gross profit margin	Net profit	Net profit margin
USP	311	35	11.3%	1	0.2%
Companies under General Authorization	368	65	17.7%	13	3.6%

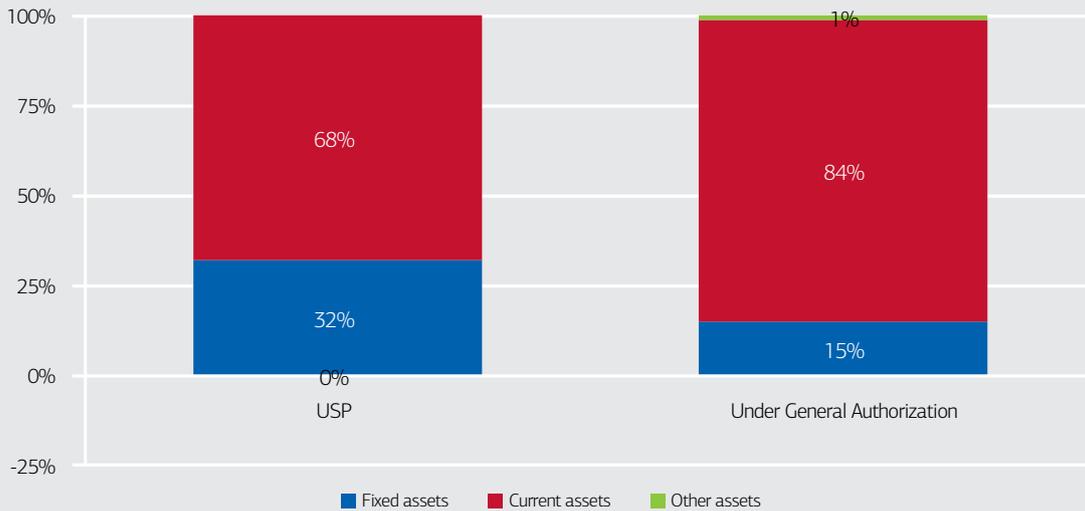
Source: Annual published financial statements

**Balance sheet analysis**

The allocation of assets and liabilities for the USP and the companies under a General Authorization is shown in Charts 2.4 and 2.5. The latter held the majority of their capital (84%) in current assets, while the USP held 68% of its capital in current assets and the remaining 32% in fixed assets.

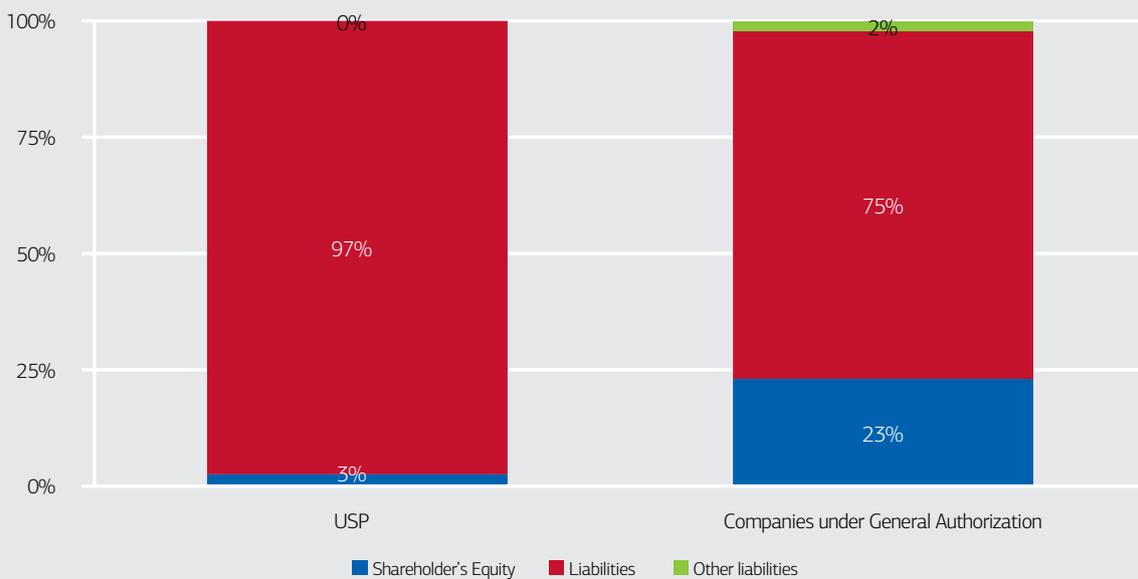
Regarding the structure of liabilities, the USP's obligations accounted for 97% of its liabilities, while the obligations of the companies under General Authorization accounted for 76% of liabilities. This fact shows a capital weakness on the part of the USP, as the ratio of liabilities to shareholder's equity is extremely disproportionate.

**Chart 2.4: Assets share in the postal market (2017)**



Source: Annual published financial statements

**Chart 2.5: Liabilities share in the postal market (2017)**



Source: Annual published financial statements

## Ratio analysis

The main ratios derived from the analysis of the balance sheets of the postal companies, are presented in Table 2.2.

The liquidity ratio for the underlying companies remained higher than one, suggesting that they could meet short-term liabilities by means of their current assets.

**Table 2.2: Postal market financial indicators (2013-2017)**

	2013	2014	2015	2016	2017
<b>Liquidity ratio</b>					
USP	0.86	0.89	1.07	1.08	1.10
Companies under General Authorization	1.37	1.33	1.09	1.11	1.19
<b>Turnover ratio</b>					
USP	0.84	0.81	0.69	0.60	0.56
Companies under General Authorization	2.12	2.48	2.00	2.16	2.28
<b>Day sales outstanding ratio</b>					
USP	74.14	99.19	179.62	287.94	340.31
Companies under General Authorization	107.75	89.56	96.19	97.04	96.94
<b>Return on capital</b>					
USP	-14.7%	12.6%	7.4%	1.4%	4.5%
Companies under General Authorization	30.8%	73.0%	59.5%	36.3%	35.6%
Source: Annual published financial statements					

The turnover ratio remained higher than one for companies under General Authorization, due to their current asset intensive character (mainly receivables). The respective USP index remained below one, due to its fixed asset intensive presence.

The day sales outstanding ratio for companies under General Authorization showed a slight increase, while the USP's

corresponding index showed a particularly high change due to an increase in the asset account "Receivables from US". The return on capital ratio remained at almost the same level for companies under General Authorization over the previous year. The corresponding index for the USP increased significantly due to the significant improvement (around 60%) of net profits before tax.

## 2.2.2 Postal revenue and volume

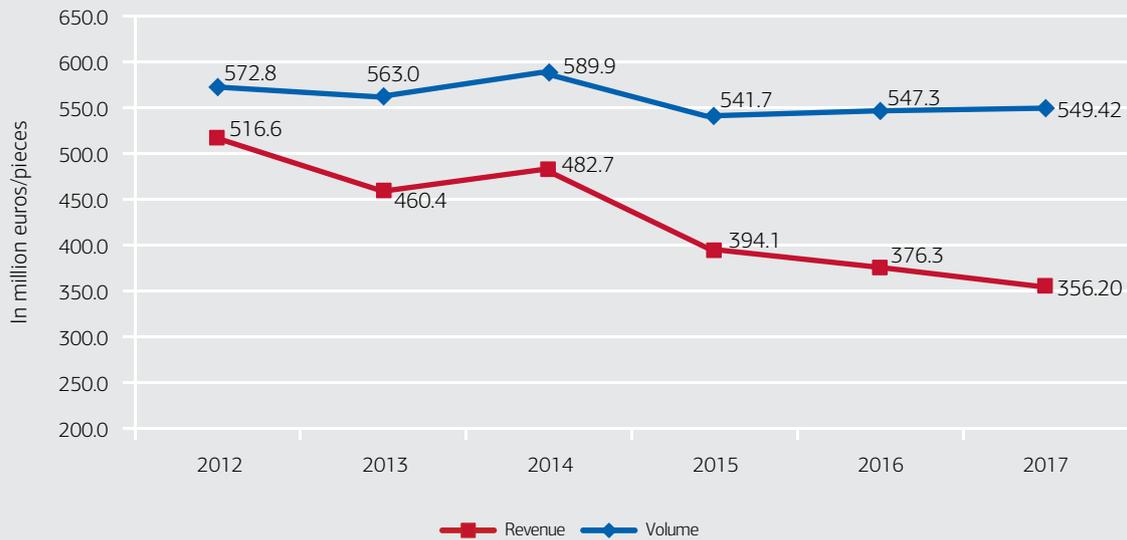
### Total postal market

In 2017, the greek postal market showed a slight upward trend, as regards revenue, while the volume of postal items

continued to drop. Specifically, 356.2 million items were handled, generating revenue of 549.4 million euros.

The course of the postal market over the last six years is shown in Chart 2.6.

Chart 2.6: Revenue and volume of the greek postal market (2012-2017)



Source: EETT (based on data provided by postal services providers)

### Per market sector

The three sectors of Universal Services, Individual Licenses and General Authorizations, that constitute the greek postal market have evolved differently over the last six years, as shown in Tables 2.3 and 2.4. The total revenue of the postal market grew slightly in 2017 (0.4%), thanks to the revenue growth of companies under General Authorization and those

holding Individual License, by 3.7% και 15% respectively. The total volume of postal items decreased in the same year, despite the volume growth of companies under General Authorization (7.4%) and those holding Individual License (15.8%). The USP showed significant decrease in both the volume (-10.8%) of postal items and total revenue (-5.9%).

Table 2.3: Postal market volume (in thousand items)

	2012	2013	2014	2015	2016	2017	2017/16
USP	461,361	402,818	398,325	308,300	278,523	248,452	-10.8%
Companies with Individual License	8,065	5,326	26,854	27,251	32,060	37,136	15.8%
Companies under General Authorization	47,162	52,278	57,563	58,578	65,752	70,613	7.4%
<b>Total</b>	<b>516,588</b>	<b>460,422</b>	<b>482,742</b>	<b>394,129</b>	<b>376,334</b>	<b>356,201</b>	<b>-5.4%</b>
Annual change	-12.5%	-10.9%	4.8%	-18.4%	-4.5%	-5.4%	

Source: EETT (based on data provided by postal services providers)

Table 2.4: Postal market revenue (in thousand euros)

	2012	2013	2014	2015	2016	2017	2017/16
USP	317,486	282,919	272,658	227,417	207,313	195,059	-5.9%
Companies with Individual License	3,486	2,471	14,496	14,309	15,865	18,251	15.0%
Companies under General Authorization	251,814	277,628	302,753	299,954	324,086	336,110	3.7%
<b>Total</b>	<b>572,786</b>	<b>563,018</b>	<b>589,907</b>	<b>541,680</b>	<b>547,265</b>	<b>549,421</b>	<b>0.4%</b>
Annual change	-10.7%	-1.7%	4.8%	-8.2%	1.0%	0.4%	

Source: EETT (based on data provided by postal services providers)

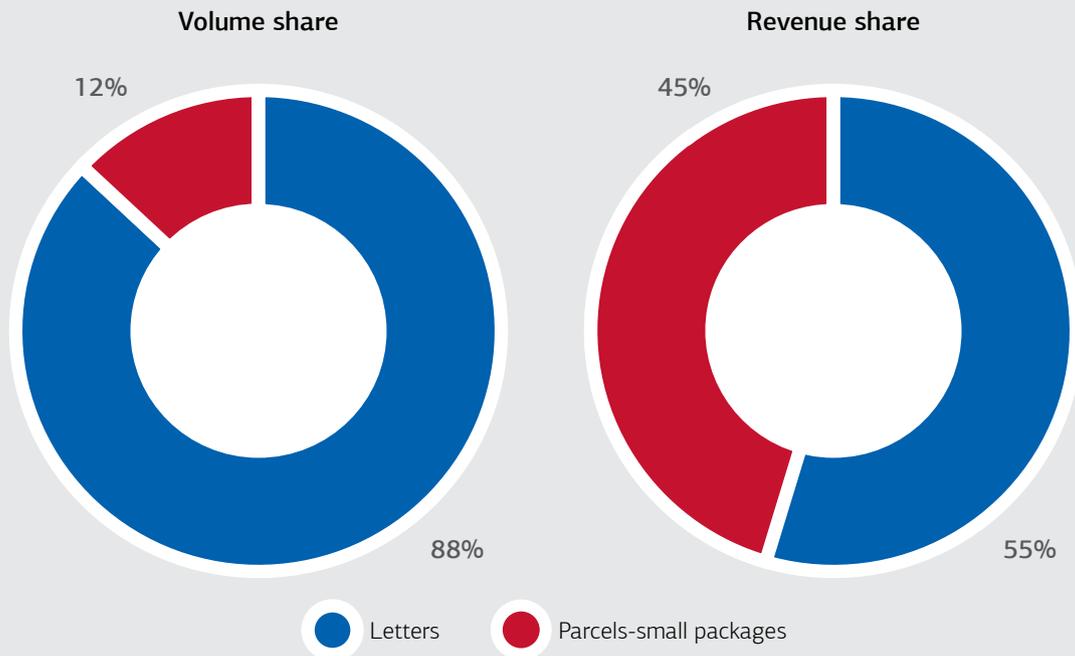
### Per postal service

Postal items are divided into letters and parcels (including small packages). The shares of postal items for the total

postal market in 2017 are depicted in Chart 2.7.

It's noteworthy that the parcels sector, which handled mere 12% of the total volume of postal items, accounted for 45%

**Chart 2.7: Volume and revenue share per postal service (2017)**

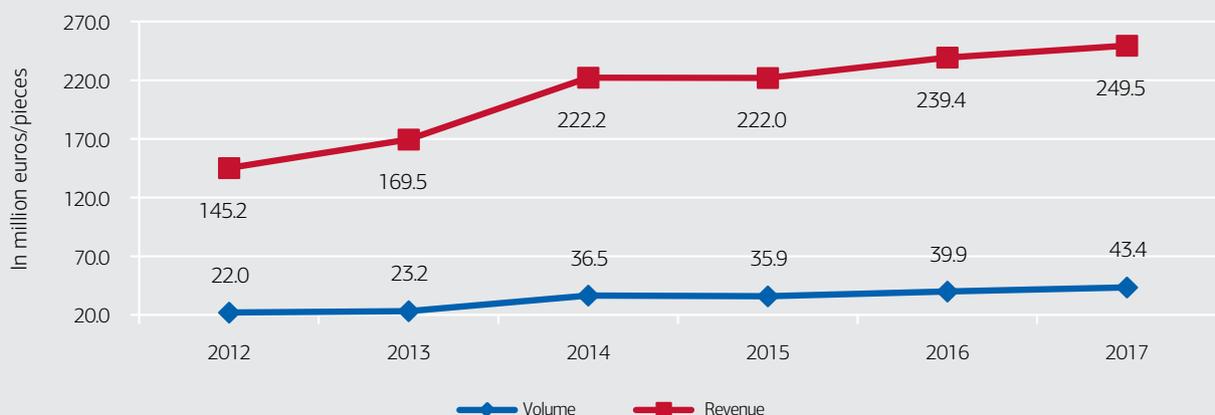


Source: EETT (based on data provided by postal services providers)

of total revenue, although letter mail handling is traditionally the main activity of postal companies (88% of total volume). The overtime growth of volume and revenue of parcels - small packages as well as the respective decline of volume

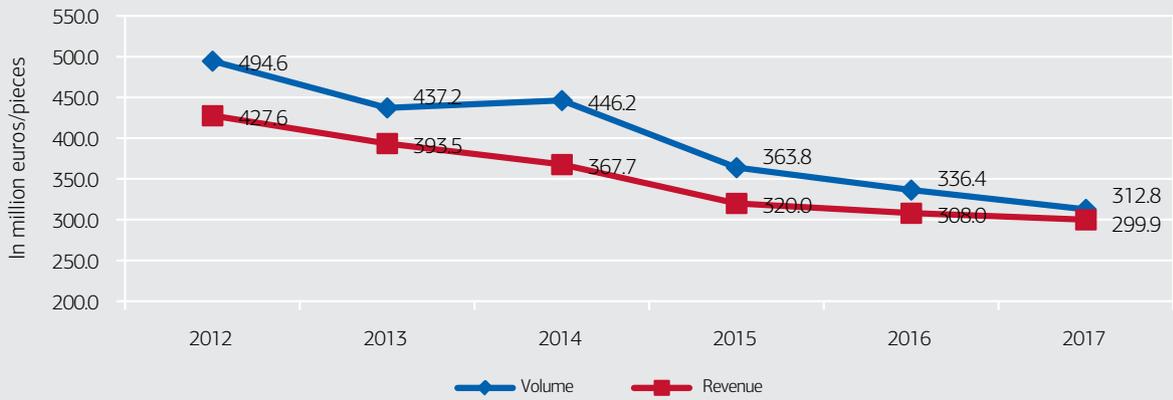
and revenue of letters, is mainly due to e-commerce growth and e-substitution of letter mail. The course of volume and revenue of the two postal services over the last six years is presented in charts 2.8 and 2.9.

**Chart 2.8: Volume and revenue of parcels-small parcels (2012- 2017)**



Source: EETT (based on data provided by postal services providers)

Chart 2.9: Revenue and revenue of letters (2012- 2017)



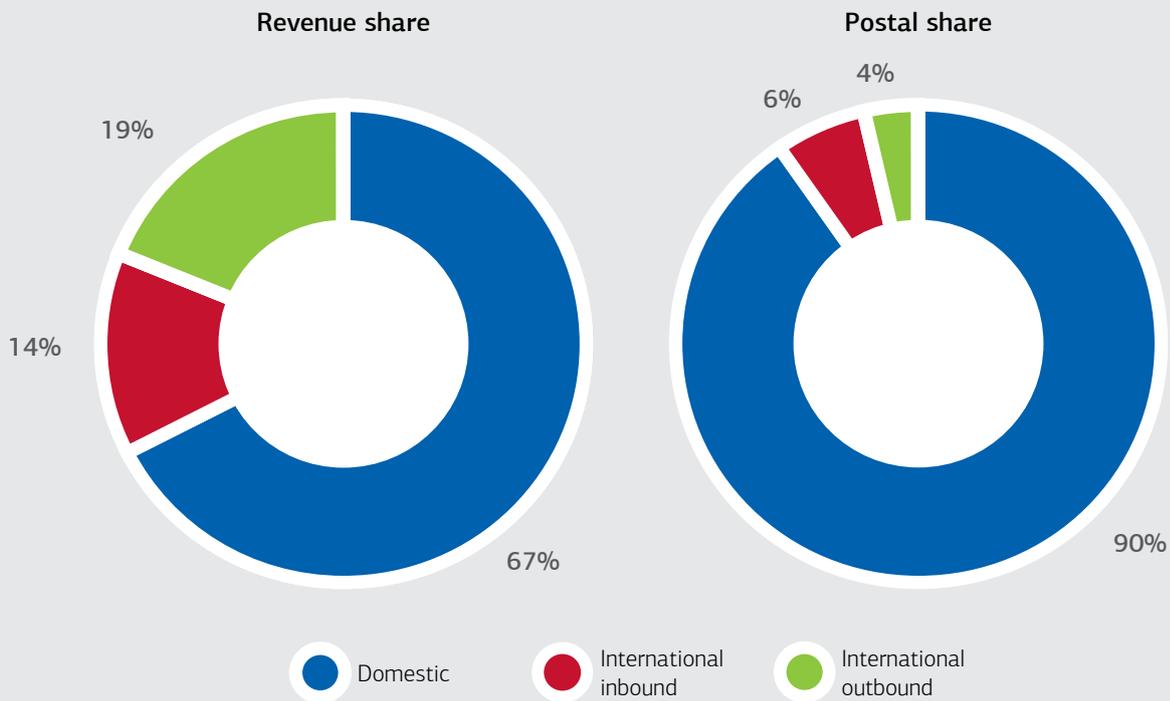
Source: EETT (based on data provided by postal services providers)

**Per destination and origin of deliveries**

In 2017, the highest percentage of revenue in the greek postal market (67%) resulted from domestic traffic (90%).

The revenue and volumes share of domestic, international inbound and international outbound items is depicted in Chart 2.10.

Chart 2.10: Volume and revenue share per domestic-international service (2017)

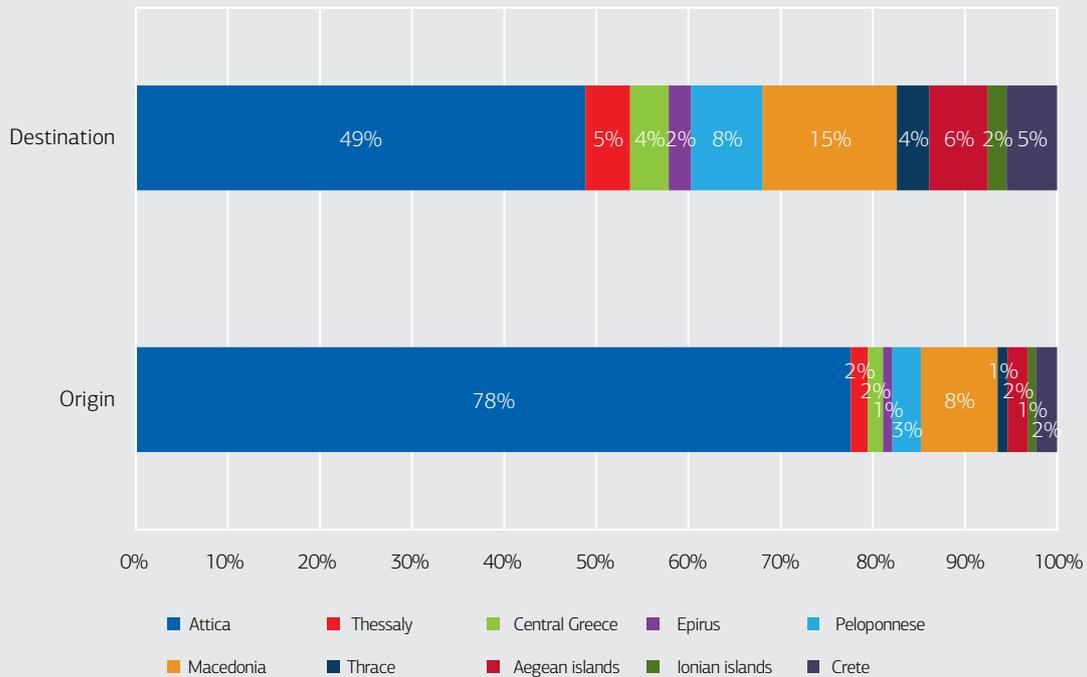


Source: EETT (based on data provided by postal services providers)

As shown in Chart 2.11, the majority of postal items were delivered from Attica (78%) and Macedonia (8%) to domestic and international destinations. These two regions were also the most popular destinations of the items being sent

domestically and from international destinations. More specifically, 49% of postal items were delivered in Attica and 15% in Macedonia.

**Chart 2.11: Destination and origin of postal item deliveries per geographic region (2017)**

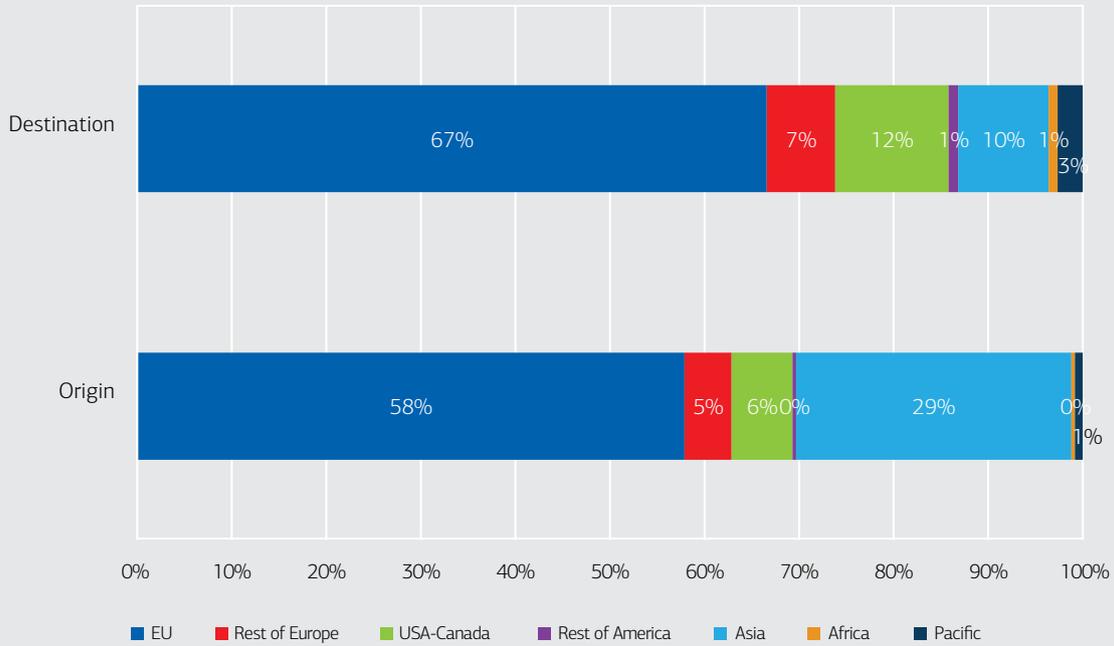


Source: EETT (based on data provided by postal services providers)

The largest volume of postal items delivered in Greece from international destinations were from the European Union (EU) (58%) and Asia (29%), while the deliveries of postal

items to international destinations were mainly sent to the EU (67%) and the USA - Canada (12%), as presented in Chart 2.12.

Chart 2.12: Destination and origin of international postal item deliveries (2017)



Source: EETT (based on data provided by postal services providers)

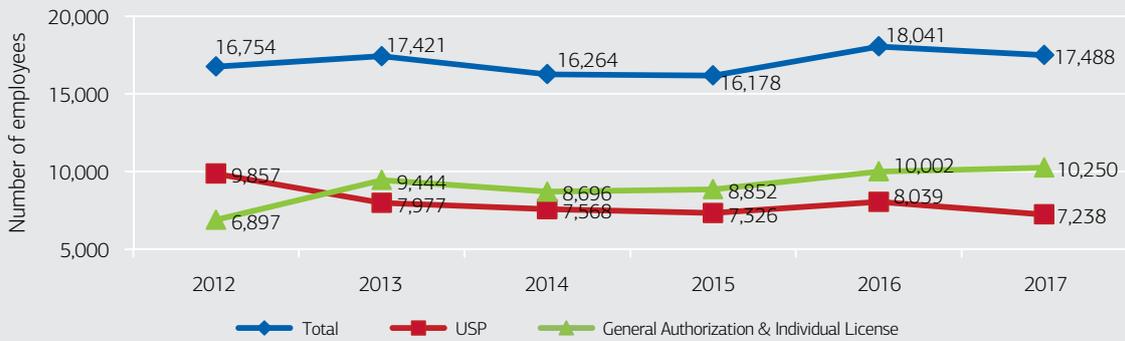
2.2.3 Employment and infrastructure of postal companies

The total number of people employed in the greek postal market in 2017 was 17,488 persons, showing a decrease compared to 2016 (18,041). The course of employment over

the last six years is shown in Chart 2.13.

In 2017, 41% of the people were employed by the USP, while the remaining 59% was employed by the other postal services providers with Individual License or under General Authorization.

Chart 2.13: Employment in the greek postal market (2012-2017)



Source: EETT (based on data provided by postal services providers)

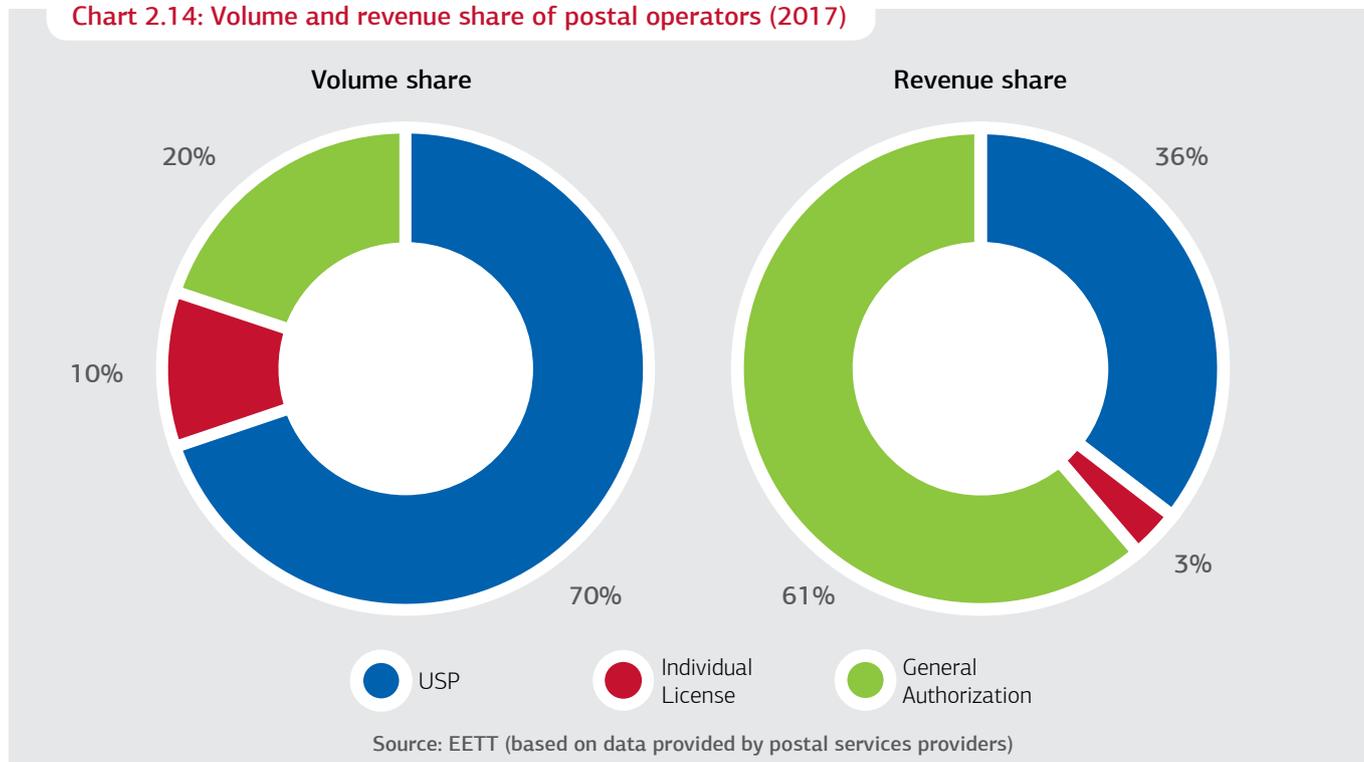
Regarding the infrastructure of postal service providers, in 2017 the USP owned 1,352 post offices and 2,415 vehicles, while the remaining providers with Individual License or under General Authorization owned 1,574 post offices and 6,050 vehicles.

## 2.3. Competition in the postal market

### 2.3.1 Market shares

In 2017, the USP accounted for 70% of the market in terms of volume while the postal operators under General Authorization accounted for 61% of the market in terms of revenue (Chart 2.14).

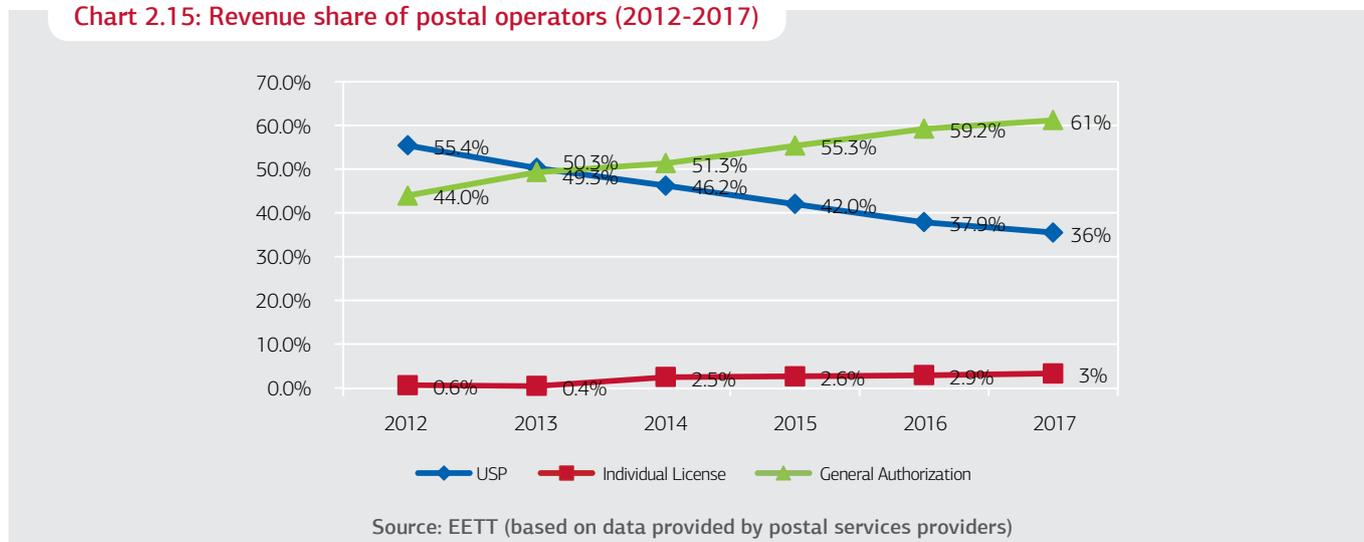
Chart 2.14: Volume and revenue share of postal operators (2017)



The USP's revenue share decreased over the last six years, while the respective figure for operators with Individual

License and under General Authorization increased during the same period (Chart 2.15).

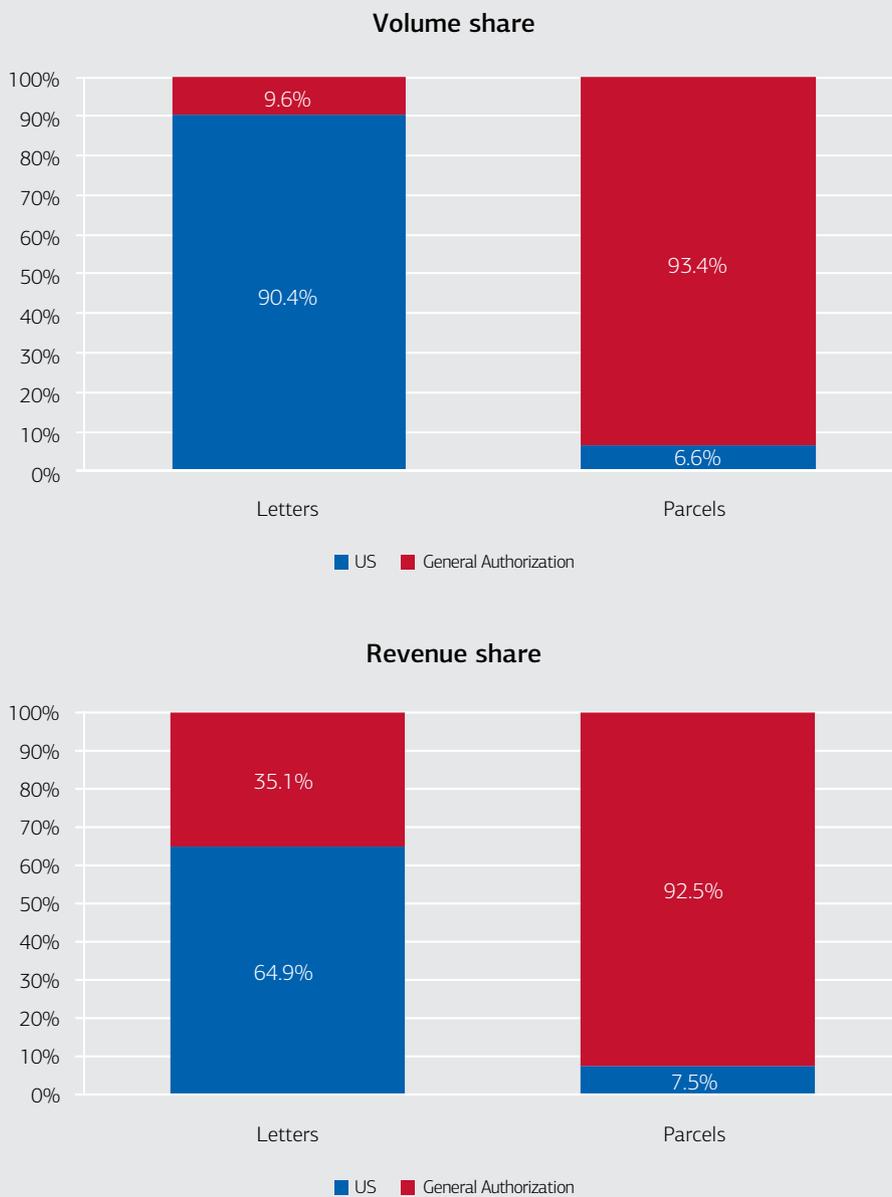
Chart 2.15: Revenue share of postal operators (2012-2017)



In terms of the services provided, it is obvious that the US dominates the letter mail sector<sup>24</sup>, accounting for 90.4% of the volume and 64.9% of the revenue. As regards to the

sector of parcels-small packages, courier companies had a dominant role, accounting for 93.4% of the volume and 92.5% of the revenue (Chart 2.16).

**Chart 2.16: Letters and parcels share for US and courier services (2017)**



Source: EETT (based on data provided by postal services providers)

24. Including direct mail, newspapers, books, catalogues and periodicals.

### 2.3.2 The Universal Service sector

The USP and the companies with Individual License are the two types of providers operating in the Universal Service sector. According to the current legal framework, ELTA is the USP in Greece and has undertaken the provision of the US for a period of 15 years since the beginning of the postal market liberalization, i.e. until 31/12/2028<sup>25</sup>.

The provision of the US includes the handling of letters, direct mail, newspapers, books, catalogues and periodicals weighing up to 2 kg, as well as parcels up to 20 kg. The share of these postal items in the US sector is shown in Table 2.5. Letters are the prevalent postal item in the US sector, accounting for 89.5% of the sector's volume and 85.4% of its revenue.

**Table 2.5: Volume and revenue share of postal items within the US sector (2017)**

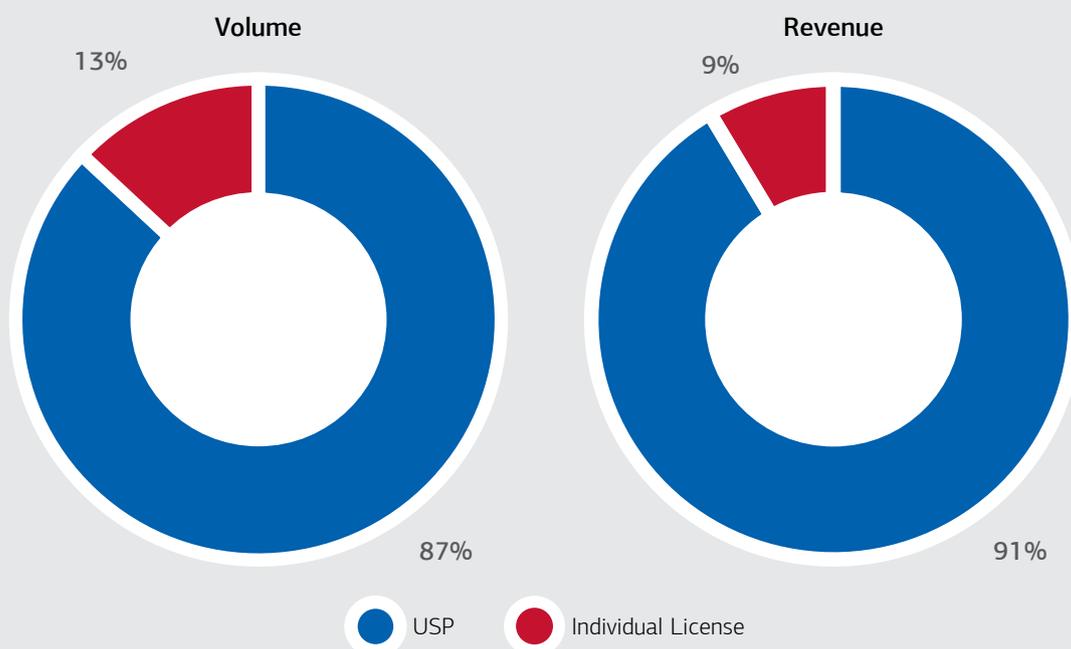
	Volume	Revenue
Letters	89.5%	85.4%
Direct mail	4.8%	2.7%
Newspapers	4.8%	3.1%
Books/catalogues/periodicals	0.1%	0.09%
Parcels & small packages	1.0%	8.7%
<b>US total</b>	<b>100%</b>	<b>100%</b>

Source: EETT (based on data provided by postal services providers)

In 2017, the USP was the dominant player in the US market, accounting for 87% of the volume and 91% of the revenue

from postal items, as shown in Chart 2.17.

**Chart 2.17: Volume and revenue share of postal operators within the US sector (2017)**



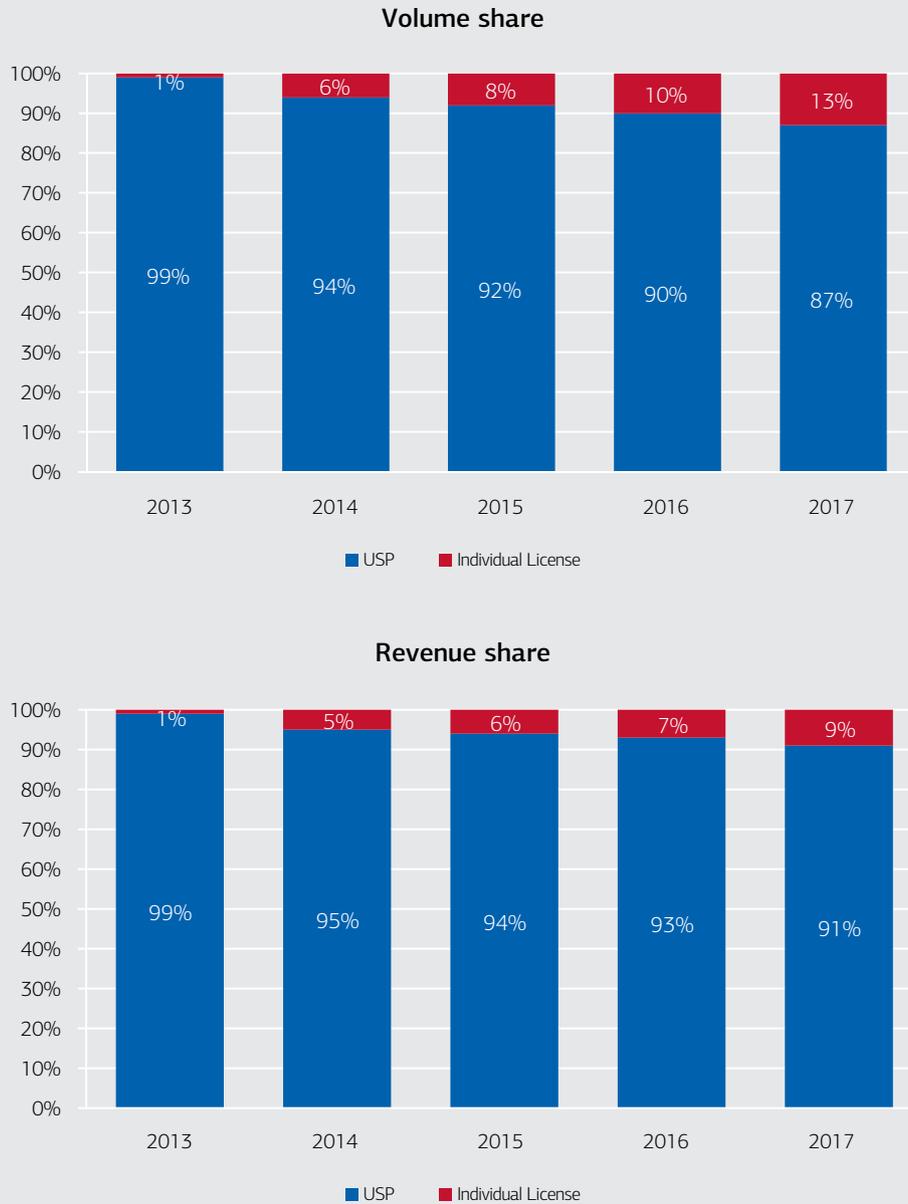
Source: EETT (based on data provided by postal services providers)

25. L.4053/2012 "Regulation for the operation of the postal market, e-telecommunication issues and other rules", GG 44/A/2012.

Companies with Individual License seem to gradually increase their market share in the US sector. The course of the market shares of companies within the US sector over

the last five years, since the postal market liberalization, is shown in Chart 2.18.

**Chart 2.18: Market shares of postal operators within the US sector (2013-2017)**

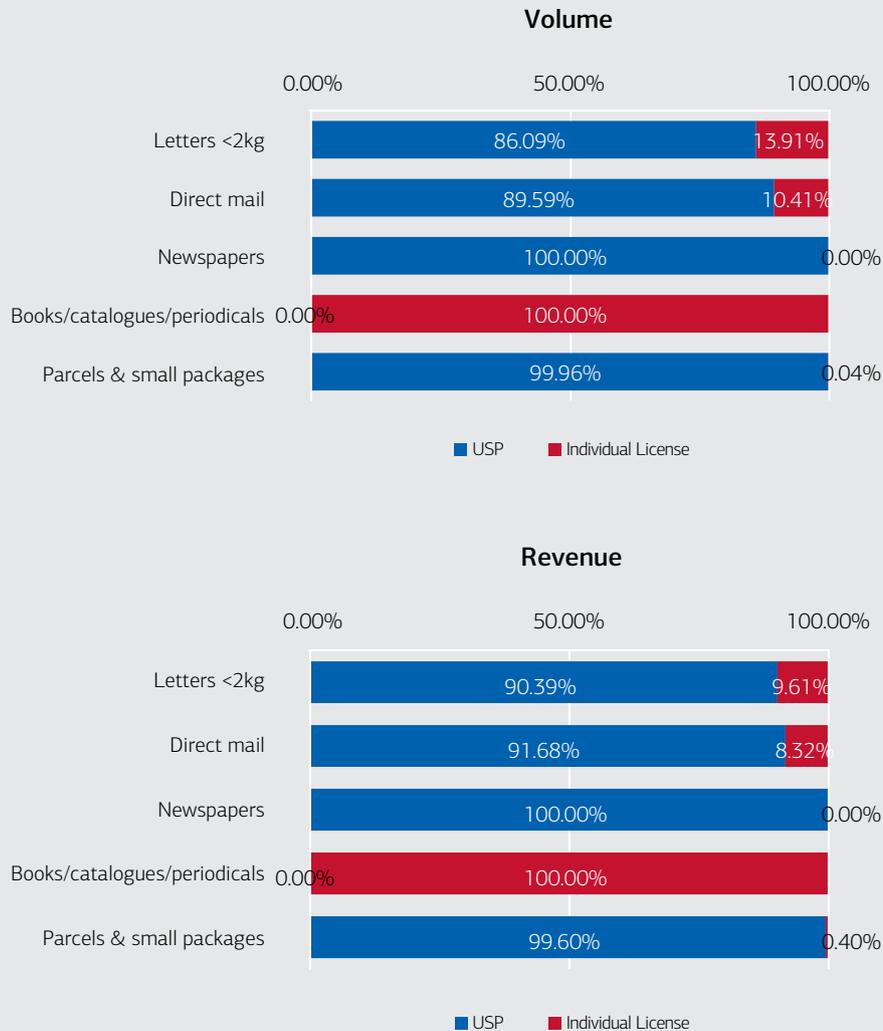


Source: EETT (based on data provided by postal services providers)

The increase of the market share of companies with Individual License, compared to the previous year, was mainly the result of the handling of letters weighing up to

2 kg. The market shares of operators regarding all postal items within the US sector in 2017 is shown in Chart 2.19.

**Chart 2.19: Market shares of postal operators by postal item type within the US sector (2017)**



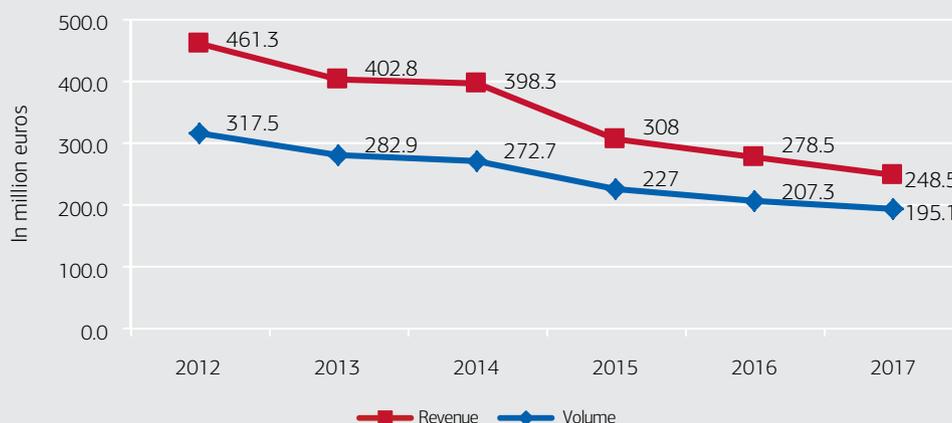
Source: EETT (based on data provided by postal services providers)

## The Universal Service Provider (USP)

In 2017, USP's revenue totaled in 195.1 million euros, decreased by 5.9% compared to the previous year. These revenues came from the handling of 248.5 million postal

items, 10.8% less compared to 2016. The overtime progress of the USP's revenue and volume during the last six years is presented in Chart 2.20.

**Chart 2.20: USP volume and revenue (2012-2017)**



Source: Annual financial statements of the USP, 2017

The majority of the USP's revenue (84.4%) was generated mainly from the handling of letters up to 2kg, followed by parcels up to 20 kg (8.8%) and newspapers (3.3%). In 2017, the average revenue per service increased significantly

for small packages up to 2 kg as well as for letters and parcels up to 20kg, compared to the previous year, while it decreased for all other services, as shown in Table 2.6.

**Table 2.6: USP volume and revenue share per service**

	Total items	Total revenue	Average revenue (in euro)	D 2016-2017
Letters	88.5%	84.4%	0.75	4.77%
Direct mail	4.9%	2.7%	0.43	-0.66%
Newspapers	5.4%	3.3%	0.49	-0.14%
Books-catalogues-periodicals	0.0%	0.0%	0.00	0.00%
Small packages	0.3%	0.8%	2.19	16.49%
Parcels	0.9%	8.8%	7.83	4.80%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>		

Source: Annual financial statements of the USP, 2017

63% of the USP's revenue was generated by customers holding a contract and 37% from customers paying in cash. Public sector organizations were 26% of the USP's customer portfolio, banks/assurance companies were 24%, energy supply companies were 10%, publications and general trade 9%, while individuals were 15%.

In 2017, the USP's personnel decreased compared to 2016, to 7,238 employees. Regarding infrastructure, the USP owned 1,352 post offices, 657 of which were agencies. In addition, the USP owned 657 cars and 1,758 motorbikes.

### Companies with Individual License

Besides the USP, ten companies with Individual License were operating in the US sector in 2017<sup>26</sup>. In 2017, the companies with Individual License generated 18.25 million euros revenue, increased by 15% year-on-year and handled

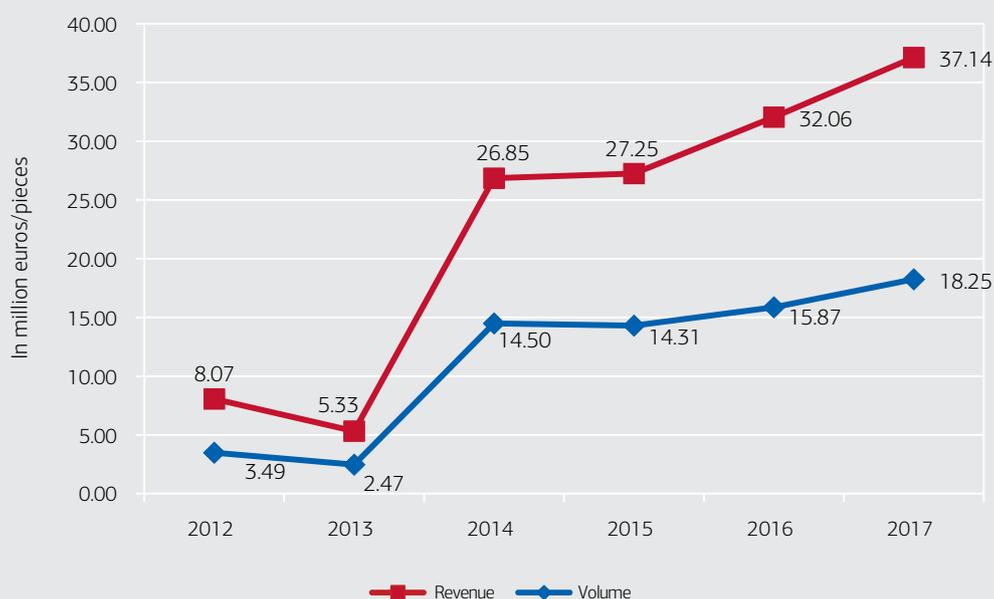
37.14 million postal items, 16% more than in 2016. The overtime progress of the revenue and volume of companies with Individual License during the last six years, is presented in Chart 2.22.

Chart 2.21: Number of companies with an Individual License



Source: EETT (Register of postal services providers)

Chart 2.22: Revenue and volume of companies with Individual License (2012-2017)



Source: EETT (based on data provided by postal services providers)

26. Including companies that were active even for a part of the reference year.

Since the liberalization of the greek postal market in 2013, large courier companies are showing great interest in letter mail services, and this trend is reflected in the fact that in 2017 companies with Individual License held 9% of revenue and 13% of volume of the US sector.

Particularly, three companies operated in letter mail and direct mail handling, one in the handling of books/catalogues/periodicals and two of them in parcel handling. It is worth

noting that 83% of the revenue was generated by a single company, which handled 93% of letters.

Despite the fact that until 2013 the core activity of the companies with Individual License was the distribution of direct mail, in 2017, similarly to 2016, letter mail handling monopolized almost the sector's activity, as shown in Table 2.7.

**Table 2.7: Volume and revenue share per service for companies with Individual License (2017)**

	Total items (%)	Total revenue (%)
Letters	95.7%	95.9%
Direct mail	3.8%	2.6%
Newspapers	0.00%	0.0%
Books-catalogues-periodicals	0.5%	1.1%
Parcels & small packages	0.003%	0.4%
<b>Total US</b>	<b>100%</b>	<b>100%</b>

Source: EETT (based on data provided by postal services providers)

### 2.3.3 The courier services sector

The courier services sector is a sector of particular interest mainly because of its considerable activity in the area of parcels and small packages delivery. This sector's companies operate under a General Authorization and provide "courier" services, meaning express delivery of postal items including monitoring and "track and trace" systems.

In 2017, 79 new companies entered the courier services sector, raising the total number of companies operating under a General Authorization to 543<sup>27</sup>.

The activities of the courier services companies include the handling of:

- letters up to 2 kg,
- small packages up to 2 kg,
- parcels from 2 up to 20 kg and
- parcels heavier than 20 kg.

In 2017, companies operating under General Authorization generated 336.11 million euros revenue, increased by 3.7% year-on-year and handled 70.61 million postal items, 7.4% more than in 2016. The overtime progress of revenue and volume of the companies under General Authorization during the last six years is presented in Chart 2.23.

27. Including companies that were active even for a part of the reference year.

Chart 2.23: Revenue and volume of companies operating under General Authorization (2012-2017)

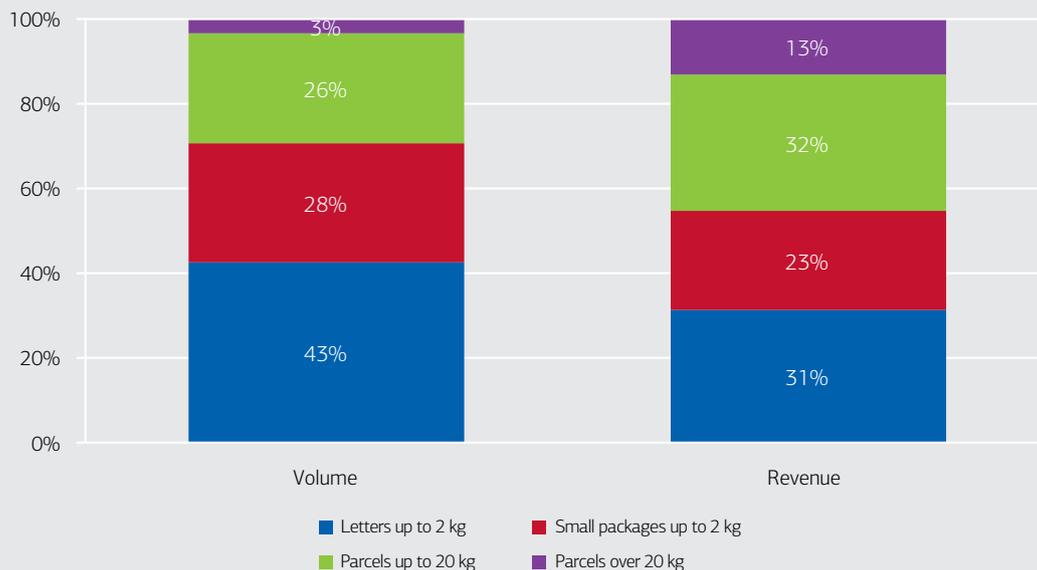


Source: EETT (based on data provided by postal services providers)

The volume and revenue share per category of postal items handled by the courier services operators in 2017 is presented in Chart 2.24. 43% of postal items handled by courier services companies

were letters and 57% were parcels-small packages. Letters generated significantly less revenue (31%) than parcels-small packages (69%). The activity in the small packages sector was also noteworthy.

Chart 2.24: Volume and revenue share per service in the courier sector (2017)



Source: EETT (based on data provided by postal services providers)

Courier services companies owned in total more than 1,570 branches, including network outlets, and 455 parcel lockers, owned more than 5,950 vehicles (cars and motorbikes) and employed more than 10,050 employees.

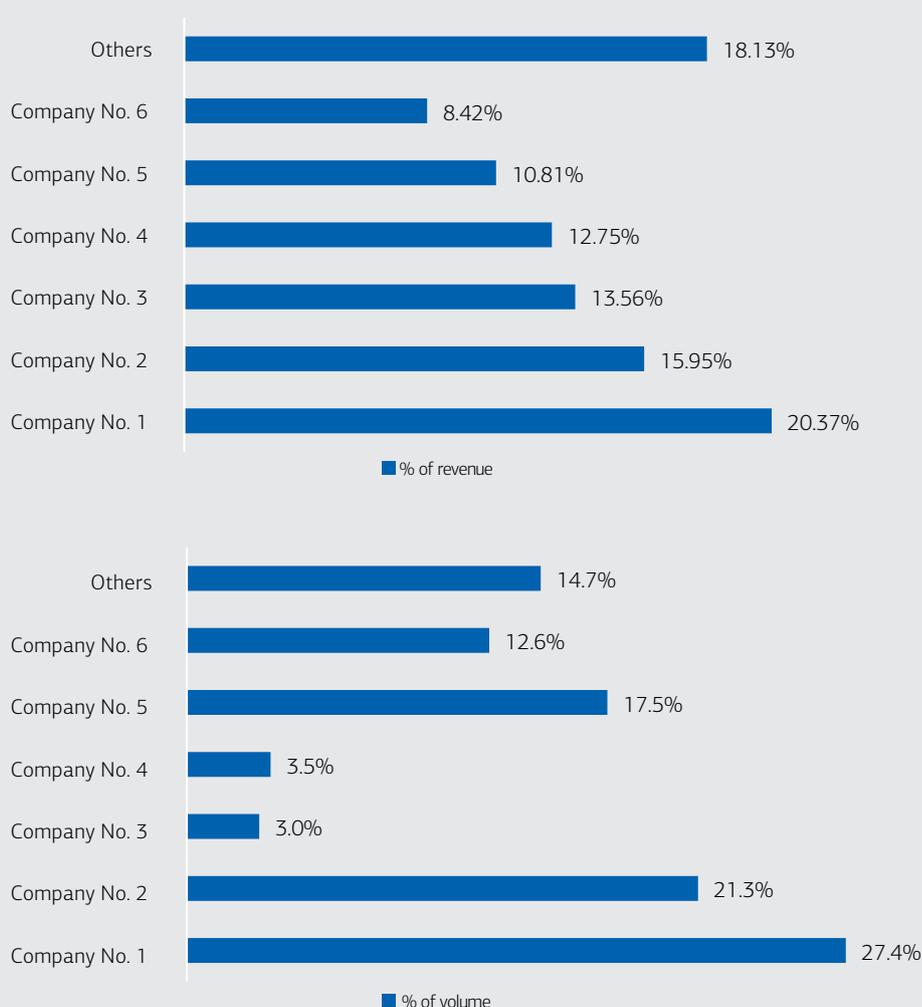
To better understand the competition in the courier services sector, Porter's five forces model is applied. The model analyzes: a) the intensity of competition among the existing players, b) the threat of new entrants in the market, c) the threat from potential substitute products, d) the customers' bargaining power and e) the suppliers' bargaining power. These five forces are indicative of the competition conditions in the courier sector that every postal services

provider has to cope with, as well as the extent to which the courier market is competitive and offers opportunities for new business activity.

#### (a) Intensity of competition

Despite the large number of companies operating in the courier services sector in 2017 (543), the largest share of the volume of postal items was handled by just six companies that generated the majority of revenue in the market. As demonstrated in Chart 2.25, in 2017, the six major companies handled 85% of the postal items and generated 82% of the courier services market revenue.

**Chart 2.25: Volume and revenue share of courier services companies (2017)**

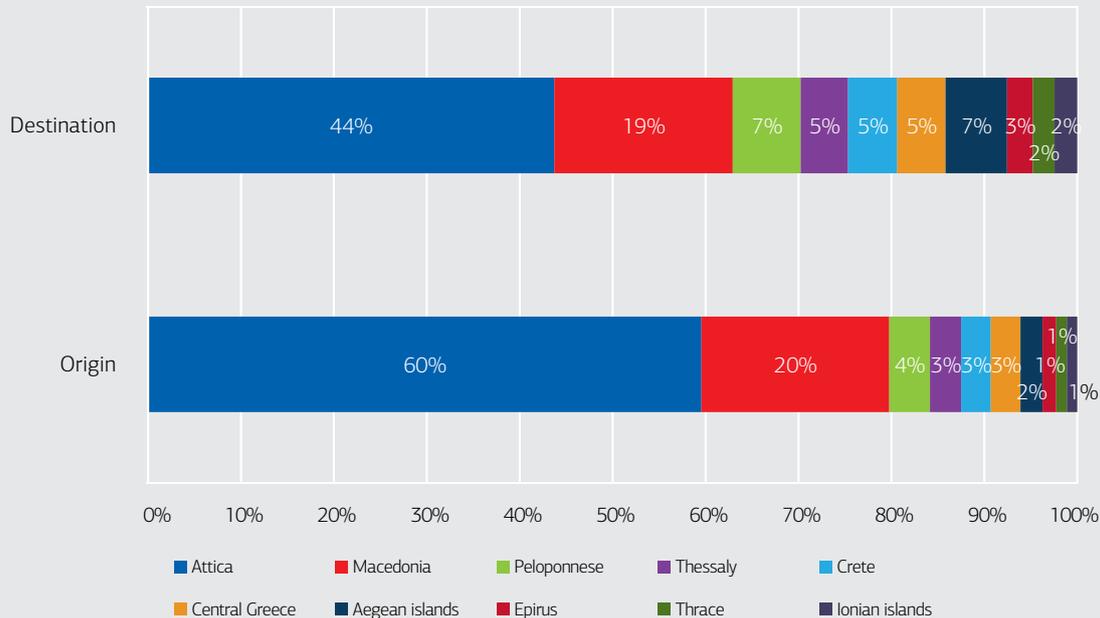


Source: EETT (based on data provided by postal services providers)

Chart 2.26 demonstrates that the competition was more intense in the regions of Attica and Macedonia, from where approximately 80% of the postal items were delivered to

domestic and international destinations. Moreover, 63% of postal items originating from domestic and international destinations were delivered to these areas.

**Chart 2.26: Destination and origin of courier item deliveries per geographic region**



Source: EETT (based on data provided by postal services providers)

The growth of cross-border e-commerce boosted the activity of courier operators, since one fifth of their revenue was generated by international outbound traffic. The most significant part of outbound traffic was directed to EU countries (70%) and the rest of Europe (11%), while the majority of inbound traffic originated from EU countries (58%) and Asia (8%)<sup>29</sup>.

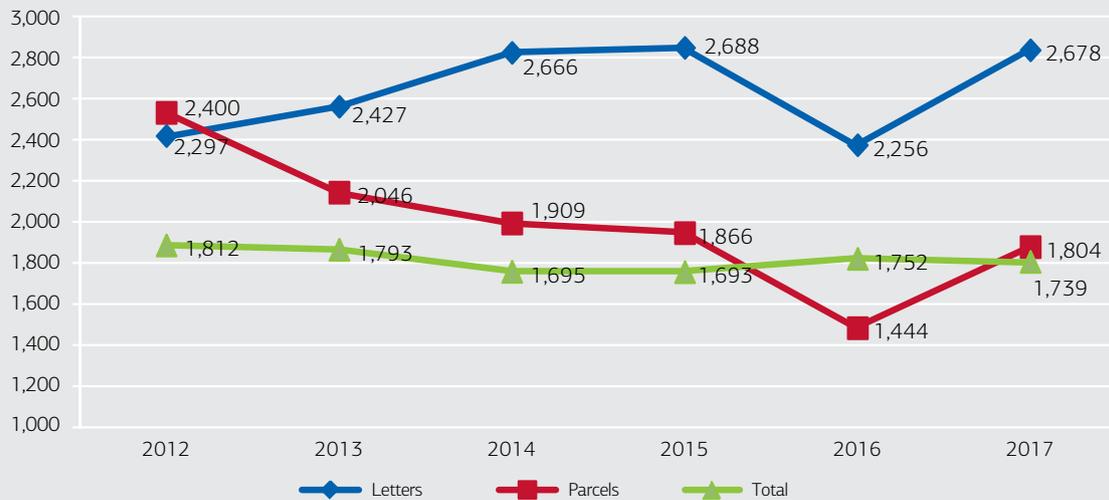
Herfindahl-Hirschman Index (HHI)<sup>30</sup> gives an indication of the level of competition among courier services opera-

tors. It is an index reflecting market concentration, which shows the degree to which a small number of companies represents a large part of the market. The higher the HHI, the higher is the concentration. Particularly, a HHI between 1,000 and 1,800 indicates a moderate level of market concentration. In 2017, the HHI for the entire courier services market was slightly higher than in the previous year, indicating a moderate concentration, while for the letter mail and parcels markets the HHI advanced.

29. EETT (based on data provided by postal services providers).

30. Source: Hirschman A. (1945), *National Power and the Structure of Foreign Trade*, Berkley & Los Angeles: Publications of the Bureau of Business and Economic Research, University of California and Herfindahl, O.C. (1950), *Concentration in the U.S. Steel Industry*, Columbia University, unpublished Ph.D. thesis.  $HHI = \sum_{i=1}^n s_i^2$ , where  $s_i$  is the market share of company "i" and  $n$  is the number of companies.

Chart 2.27: Herfindahl-Hirschman Index



Source: EETT (based on data provided by postal services providers)

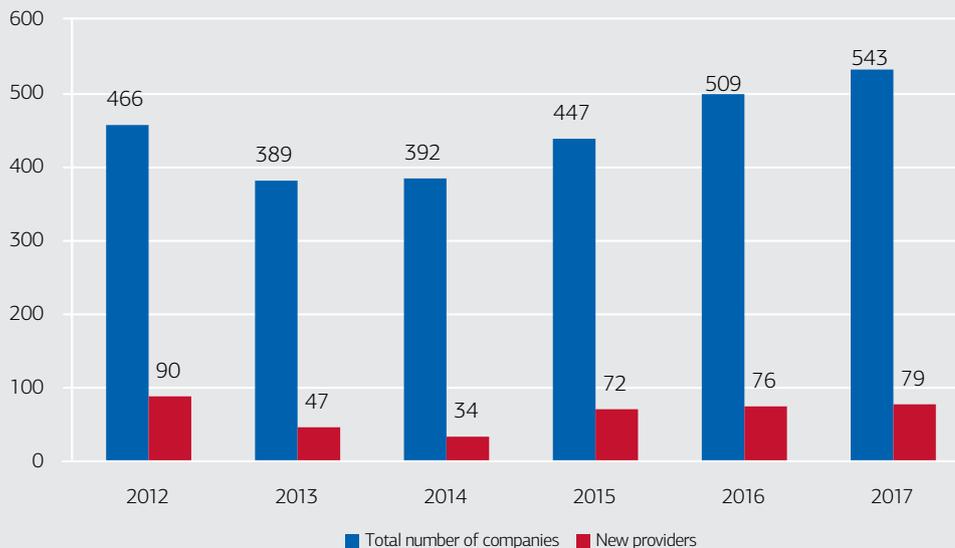
### (b) Barriers for new entrants

In the courier services sector, where competition has been intense, the main obstacles for new entrants relate to economic issues linked to the development of the greek economy and to business issues, as follows:

a) Consumers' demand, which is mainly affected by factors such as the company's reliability, pricing and customer service quality and also considerably affected by the range of provided services, new technology and added value services,

the development of the postal network and advertising.  
 b) Market problems, such as compression of the service prices, high cost of vehicle purchase and maintenance, the competition from alternative transport networks and the high investment costs in technology systems.  
 The number of new companies that operated in 2017 increased compared to the previous year, showing signs of market recovery, as presented in Chart 2.28.

Chart 2.28: Companies operating under a General Authorization



Source: EETT (based on data provided by postal services providers)

**(c) Substitute products/services**

Regarding letter mail, the most important threats are constant technology advancements and the substitution of traditional ways of communication by e-mail and new web applications. More specifically, the phone, SMS messages and email constitute a threat to C2C letter mail communication while electronic billing and e-banking services threaten B2C letter mail communication.

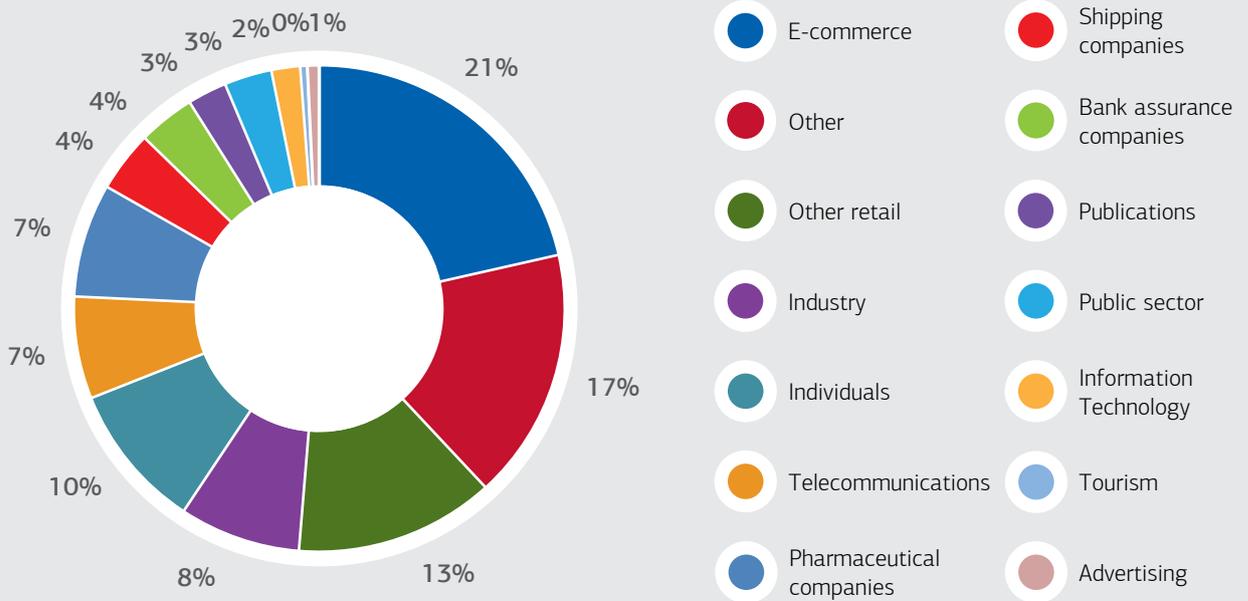
As regards to parcels, it is almost impossible for either an individual or a company to undertake the delivery of their parcels, especially with courier (express) characteristics. Therefore, it is obvious that there are no direct substitutes. Advertising on television, the radio, newspapers, magazines and the internet are significant substitutes for direct mail. On the other hand, there are opportunities for growth as many businesses now base their advertising campaigns on an overall approach combining multiple means of communicating with consumers such as the Internet, direct mail and telephone information. In addition, online advertising has led to the development of e-commerce, which in turn has led to the development of parcel delivery and the creation of additional mail, such as certificates, bills, receipts and invoices.

**(d) Bargaining power of customers**

The large customers of courier services companies have a strong bargaining power, mainly due to the increased volume of postal items they handle and the increased frequency of use of postal services. On the contrary, individual customers have little bargaining power in defining the price of postal services that they demand.

Given the growth of e-commerce and consequently its significance for the viability of courier services companies, the bargaining power of merchants is increasing. This is more intense in cases where postal companies are completely dependent on one or a few individual customers, whom they are trying to maintain, by compressing their prices and reducing their operating costs by any means. The clientele of courier companies consisted mainly of companies and less of individual consumers, as shown in Chart 2.29. Main business customers come from the e-commerce sector, followed by retail customers, industry, telecommunications, the pharmaceutical industry etc.

**Chart 2.29: Revenue share of courier companies' clientele (2017)**

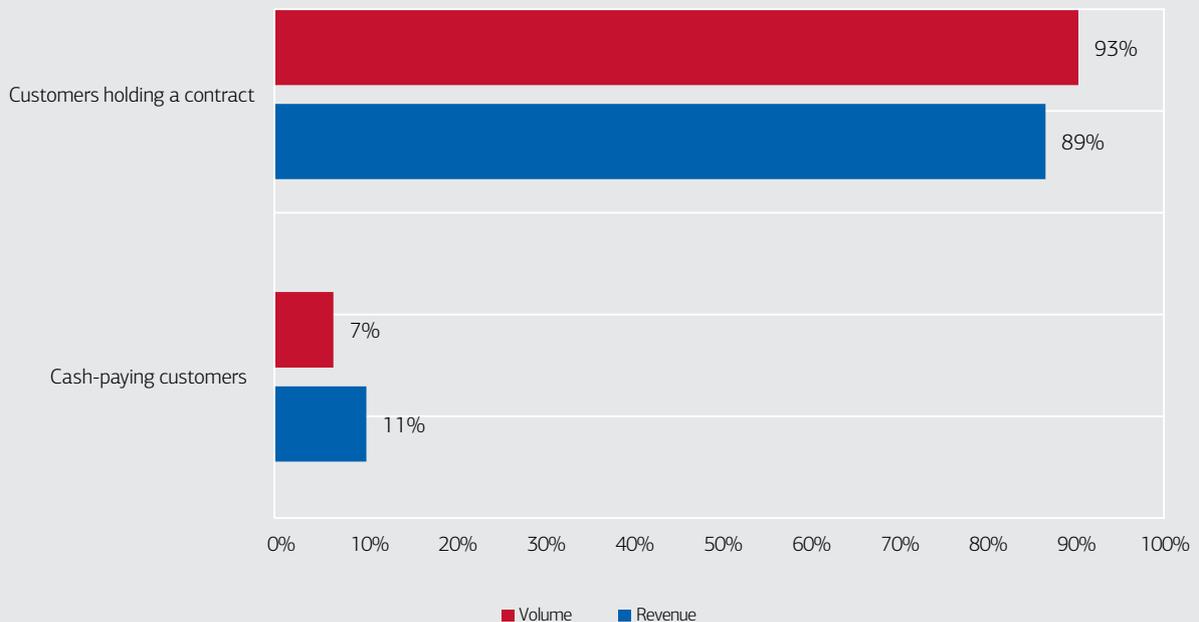


Source: EETT (based on data provided by postal services providers)

Customers with a contract generated 89% of courier companies' revenue while cash-paying customers

generated 11%. Revenue per customer type is depicted in Chart 2.30.

**Chart 2.30: Revenue and volume of courier companies per customer type (2017)**



Source: EETT (based on data provided by postal services providers)

#### (e) Bargaining power of suppliers

Postal market suppliers such as the manufacturers of sorting machines, transportation means, mail handling machines, fuel supply etc., influence the operation of postal companies without, however, affecting competition in terms

of pricing, delivery frequency or network coverage. Nevertheless, postal services providers, in order to cope with competition, are willing to invest mainly in new technologies and means of transport in the near future and less in their network development and advertising.

## Index of Charts & Tables

### Charts

Chart 1.1: Licensed operators (2017)	6
Chart 1.2: Telecommunications' contribution to GDP	7
Chart 1.3: Number of personnel	7
Chart 1.4: Progress of the monthly Consumer Price Index (General Index – Communications Sub-Index)	8
Chart 1.5: Variation of the monthly Consumer Price Index over time	8
Chart 1.6: Electronic communications' operators turnover	10
Chart 1.7: Fixed & mobile telephony companies' turnover	10
Chart 1.8: Turnover breakdown	11
Chart 1.9: Telecommunications services breakdown	11
Chart 1.10: Fixed networks revenues breakdown	12
Chart 1.11: Mobile networks revenues breakdown	12
Chart 1.12: Electronic communications operators' investments	13
Chart 1.13: Electronic communications operators' investments breakdown (2017)	13
Chart 1.14: Rate of change of investments-turnover	14
Chart 1.15: Investments/turnover ratio	14
Chart 1.16: Earning Before Interest, Tax, Depreciation and Amortization	15
Chart 1.17: Telephone lines progress	16
Chart 1.18: Market shares based on the total number of access lines (at the end of the semester)	17
Chart 1.19: Evolution of the fixed outgoing traffic	18
Chart 1.20: Fixed outgoing traffic for the basic call types	19
Chart 1.21: Annual change of fixed outgoing traffic	19
Chart 1.22: OTE's annual market shares (based on outgoing traffic)	21
Chart 1.23: OTE's market shares per main call type (based on traffic)	21
Chart 1.24: Market shares for the basic call types (based on traffic)	22
Chart 1.25: Outgoing traffic for OTE and ther operators (excl. dial-up)	22
Chart 1.26: Retail revenues from telephony and Internet services at a fixed location	23

Chart 1.27: OTE's market shares (based on the retail revenues from telephony and Internet services at a fixed location)	24
Chart 1.28: Call termination traffic to fixed telephony networks (OTE - alternative operators)	25
Chart 1.29: Actual interconnection fees	25
Chart 1.30: Number portability for fixed telephony	26
Chart 1.31: Connections/subscriptions of mobile telephony (2009-2017)	27
Chart 1.32: Progress of mobile telephony connections (pre-paid and post-paid)	28
Chart 1.33: Progress of mobile telephony subscriptions (residential-business)	29
Chart 1.34: MTOs' market shares over the number of total mobile connections (2009-2017)	29
Chart 1.35: Voice calls originating from mobile	32
Chart 1.36: Voice calls per category	32
Chart 1.37: Voice calls per category (% of the total)	33
Chart 1.38: Voice calls per user category	33
Chart 1.39: Total number of SMS (2009-2017)	34
Chart 1.40: SMS per user category	34
Chart 1.41: Total number of MMS	35
Chart 1.42: Total number (MB) of data services via mobile phone and datacards	35
Chart 1.43: Retail revenues from mobile telephony users	36
Chart 1.44: Retail revenue from mobile telephony services (2017)	38
Chart 1.45: Average annual revenue per mobile telephony connection	38
Chart 1.46: MTOs' interconnection traffic	39
Chart 1.47: MTOs' on-net traffic	40
Chart 1.48: Voice calls terminating to mobile phones in Greece	40
Chart 1.49: Revenues from fixed and mobile voice calls termination to mobiles in Greece	41
Chart 1.50: Mobile call termination fees reduction	41
Chart 1.51: Number portability for mobile telephony	42
Chart 1.52: Connections/subscriptions of fixed and mobile telephony	43
Chart 1.53: Revenues from fixed and mobile telephony	43
Chart 1.54: Call volumes from fixed and mobile phones	44
Chart 1.55: Fixed and mobile telephony market shares	44
Chart 1.56: Progress of broadband lines	46
Chart 1.57: Progress of LLU lines	46
Chart 1.58: Progress of VDSL lines	47
Chart 1.59: Breakdown of broadband lines per technology (December 2017)	47
Chart 1.60: Progress of broadband lines per technology	48
Chart 1.61: Breakdown of nominal broadband lines speed (December 2017)	48
Chart 1.62: Progress of broadband lines speed	49
Chart 1.63: Progress of the average access speed of retail and wholesale ADSL lines	49
Chart 1.64: Progress of mobile telephony subscribers making use of Internet	50
Chart 1.65: Progress of 3G and 4G networks Internet traffic	51
Chart 1.66: Mobile network population coverage	52
Chart 1.67: Progress of pay TV users	52
Chart 1.68: PRS and directory services shares based on revenues	53
Chart 1.69: Progress of PRS and directory services total revenues	54
Chart 1.70: Volume of available products domestically compared to last year	55
Chart 1.71: Commercially available products per operator	55

Chart 1.72: Commercially available products per operator (%)	56
Chart 1.73: Product type breakdown in the market	56
Chart 1.74: Number of products per service	57
Chart 1.75: Fixed versus mobile products	57
Chart 1.76: Basics to add-ons ratio in pre-paid telephony	58
Chart 1.77: Basics to add-ons ratio in mobile post-paid telephony	58
Chart 1.78: Basics to add-ons ratio in fixed telephony products	59
Chart 1.79: Basics to add-ons ratio in mobile post-paid and fixed telephony	59
Chart 1.80: Target-markets of telecommunications products	60
Chart 1.81: Product breakdown per service in the target-markets	60
Chart 1.82: Product breakdown per operator in the target-markets	61
Chart 1.83: Product concentration in the mobile post-paid market	61
Chart 1.84: Broadband penetration increase in Greece and the EU	62
Chart 1.85: Broadband penetration in Greece and the EU (June 2017)	63
Chart 1.86: Broadband penetration change in the EU (June 2017)	64
Chart 1.87: Broadband penetration progress in Greece and the EU	65
Chart 1.88: Percentage of lines at speed>30 Mbps in the EU (June 2017)	65
Chart 1.89: Mobile broadband penetration (per 100 residents)	66
Chart 1.90: Mobile broadband penetration progress in Greece and the EU	67
Chart 1.91: NGA broadband coverage in the EU and Greece	68
Chart 1.92: Rural NGA broadband coverage in the EU and Greece	68
Chart 1.93: Mobile broadband coverage in residential areas	69
Chart 1.94: Households having Internet connection	69
Chart 2.1: Number of companies in the greek postal market	70
Chart 2.2: Evolution of the market turnover index for postal and courier activities	71
Chart 2.3: Turnover of postal companies	71
Chart 2.4: Assets share in the postal market (2017)	72
Chart 2.5: Liabilities share in the postal market (2017)	72
Chart 2.6: Revenue and volume of the greek postal market (2012-2017)	74
Chart 2.7: Volume and revenue share per postal service (2017)	76
Chart 2.8: Volume and revenue of parcels-small parcels (2012- 2017)	76
Chart 2.9: Revenue and revenue of letters (2012- 2017)	77
Chart 2.10: Volume and revenue share per domestic-international service (2017)	77
Chart 2.11: Destination and origin of postal item deliveries per geographic region (2017)	78
Chart 2.12: Destination and origin of international postal item deliveries (2017)	79
Chart 2.13: Employment in the greek postal market (2012-2017)	79
Chart 2.14: Volume and revenue share of postal operators (2017)	80
Chart 2.15: Revenue share of postal operators (2012-2017)	80
Chart 2.16: Letters and parcels share for US and courier services (2017)	81
Chart 2.17: Volume and revenue share of postal operators within the US sector (2017)	82
Chart 2.18: Market shares of postal operators within the US sector (2013-2017)	83
Chart 2.19: Market shares of postal operators by postal item type within the US sector (2017)	84
Chart 2.20: USP volume and revenue (2012-2017)	85
Chart 2.21: Number of companies with an Individual License	86
Chart 2.22: Revenue and volume of companies with Individual License (2012-2017)	86

Chart 2.23: Revenue and volume of companies operating under General Authorization (2012-2017)	88
Chart 2.24: Volume and revenue share per service in the courier sector (2017)	88
Chart 2.25: Volume and revenue share of courier services companies (2017)	89
Chart 2.26: Destination and origin of courier item deliveries per geographic region	90
Chart 2.27: Herfindahl – Hirschman Index	91
Chart 2.28: Companies operating under a General Authorization	91
Chart 2.29: Revenue share of courier companies' clientele (2017)	92
Chart 2.30: Revenue and volume of courier companies per customer type (2017)	93

## Tables

Table 1.1: Active fixed and mobile operators	6
Table 1.2: Telephone lines progress	17
Table 1.3: Volume per call type (in million minutes)	20
Table 1.4: Market shares of operators that provide telephony and Internet services at a fixed location	24
Table 1.5: Total and active mobile telephony connections (excl. datacards)	27
Table 1.6: Total post-paid and pre-paid connections	28
Table 1.7: Total connections of residential and business post-paid and pre-paid users	28
Table 1.8: MTOs' market shares over registered connections (2009-2017)	30
Table 1.9: MTOs' market shares over active connections (2009-2017)	30
Table 1.10: Penetration rate of connection on the population (2006-2017)	30
Table 1.11: MTOs' shares over the retail revenues (2009-2017)	37
Table 1.12: MTOs' shares over the post-paid retail revenues (2009-2017)	37
Table 1.13: MTOs' shares over the pre-paid retail revenues (2009-2017)	37
Table 1.14: Shares of fixed broadband access operators	50
Table 1.15: Shares of the active 3G and 4G subscribers (post-paid and pre-paid)	51
Table 1.16: Shares of pay TV operators on subscribers	53
Table 2.1: Key financial data of postal companies (in million euros), (2017)	71
Table 2.2: Postal market financial indicators (2013-2017)	73
Table 2.3: Postal market volume (in thousand items)	75
Table 2.4: Postal market revenue (in thousand euros)	75
Table 2.5: Volume and revenue share of postal items within the US sector (2017)	82
Table 2.6: USP volume and revenue share per service	85
Table 2.7: Volume and revenue share per service for companies with Individual License (2017)	87



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