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COVER NOTE

from: Secretary-General of the European Commission,
signed by Mr Jordi AYET PUIGARNAU, Director

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to: Mr Uwe CORSEPIUS, Secretary-General of the Council of the European
Union

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COMMISSION STAFF WORKING DOCUMENT

DAE-Scoreboard 2012

COMMISSION STAFF WORKING DOCUMENT

DAE-Scoreboard 2012

**Country Chapter (Part 1) -2011 Telecommunication Market and Regulatory
Developments**



EUROPEAN COMMISSION
Information Society and Media Directorate-General
Electronic Communications Policy
Implementation of Regulatory Framework

18 June 2012

AUSTRIA
2011
**Telecommunication Market and
Regulatory Developments**

This report is a Commission Services working document, issued as part of the Scoreboard 2012:

http://ec.europa.eu/information_society/digital-agenda/scoreboard/

Commission européenne / Europese Commissie, B-1049 Bruxelles / Brussel
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AUSTRIA

1. MAIN MARKET & REGULATORY DEVELOPMENTS: BEST PRACTICES AND CHALLENGES

Development of the sector

Whereas sector revenue slightly decreased by 0.5% between 2009 and 2010, the total investment in the telecommunications sector, mainly driven by fixed broadband investments by the incumbent, significantly recovered with an increase by 33%, from €518 million in 2009 up to €693 million in 2010. In 2011, the incumbent (Telekom Austria, TA) increased its net debt by 2.2% to €3.4 billion. [Section 3]

Concerning the situation of the fixed market in 2011, a positive development was the significant increase of 25% of fixed lines provided by competitors (such as UPC). However the share of 77.5% of fixed lines that are provided by the incumbent (TA) remained significantly above the EU average of 70%. [Section 5a]

Concerning the competitive development in the fixed broadband market, the incumbent (TA) was able to further extend its leading position in the broadband market to 56% of the broadband lines despite significant growth in broadband lines provided by cable operators (UPC, Salzburg Kabel). The strong position of the incumbent (TA) can be explained by the introduction of an attractive service bundle ("Kombipaket") containing fixed and mobile telephony as well as fixed broadband for less than €20 per month. [Section 4a]

The fixed-mobile service bundle had the effect in the mobile market with a further increased market share of 41.5% of the leading operator, the mobile arm of the incumbent (TA) with the remaining share divided between the 3 competitors (T-Mobile, Orange, and 3). However, the mobile market continued to be highly competitive, with mobile service bundles being offered at low prices and attractive optional tariffs for mobile data services with large data volumes in the order of €1 per GB data volume and flat rates starting from €15 per month. Subscriptions containing mobile broadband services continued to increase significantly leading to a mobile broadband penetration rate, which remained among the highest in the EU, in particular illustrated by the high penetration rate considering dedicated devices of 19.8% in July 2011. [Section 5b]

Number portability in mobile and fixed networks was usually done within the one day and procedures to change provider were reported to work smoothly in Austria. [Section 7.5]

Progress in broadband deployment and take-up

In 2011, average progress was made towards the **DAE broadband targets**. Broadband coverage for all households at speeds of at least 1 Mbps has been nearly reached with a number of white spots still being without broadband coverage. More than 95% of

Austrian households had the possibility to subscribe to a broadband line with speeds of 2 Mbps and above and close to 50% to 30 Mbps and above in January 2012, which brings Austria close to the DAE coverage targets. More than 90% of the population was covered with by mobile broadband with speeds of 7 Mbps and above, which sets Austria in one of the first positions with regard to mobile broadband coverage. However, the take-up ratio of broadband lines with speeds of 30 Mbps and above remained rather low at 1.7% and of 100 Mbps and above at 0.9% in January 2012, which is below the EU average of 6.5% and 1.3% respectively. Even though offers for 100 Mbps lines started in the order of €50 per month, most consumers were not willing to pay €30 more or considered lower data rates as sufficient for current use.

With regard to potential **cost reduction in civil engineering**, the revised Austrian Telecommunications Act simplifies procedures with regard to rights of way and provides for the possibility of infrastructure mapping. However, availability of mapping information remains limited. First projects in the framework of the funding programme "Broadband Austria 2013" with a total programme budget of ca. €30 million have been launched to cover selected rural areas with high bandwidth broadband until end of 2013. [Section 4b]

Independence and effectiveness of the NRA

The degree of independence of the Austrian NRA (the Telekom-Control-Kommission - TKK and its operational arm the Rundfunk und Telekom Regulierungs-GmbH - RTR) remained unchanged in 2011. No major market reviews or remedies have been adopted in 2011. The key regulated wholesale offer for NGA, the reference offer for virtual fibre unbundling, has been amended on request by the NRA, but it is still not acceptable by all market players. [Section 2]

Implementation of the framework

In November 2011 the revised Austrian Telecommunications Act entered into force, which contains inter alia new provisions meant for the transposition of the new EU telecoms framework into Austrian law, which was due by 25 May 2011. The Commission accordingly closed the infringement procedure for non-communication.

As in previous years there were no major infringement cases concerning correct application of EU telecom rules against Austria in 2011 illustrating common views on most issues covered by the framework.

Spectrum management

The NRA is well on track with regard to the allocation of the Digital Dividend for mobile broadband services. In 2011 the NRA carried out a public consultation concerning the assignment of the 800 MHz band and the authorisation of the 900 MHz and 1800 MHz frequencies after the expiry of the GSM licenses in 2017. Based on the outcome the NRA published has published first considerations in this regard. [Section 6]

Citizens and consumer protection

Only one 116 harmonised number is operational in Austria and awareness levels remained rather low at 18%. [Section 7.1]

112 is one of several national emergency numbers and availability is good. With regard to awareness of 112 as the European emergency number Austria is among the best 8 Member States with a level of 36%. [Section 7.2]

The debate on consumer issues in 2011 was centred on many complaints with regard to bill shocks of mobile data users. In this regard Austria became very proactive in 2011 and the NRA published a proposal for an ordinance on cost control for mobile data services for public consultation. [Section 7.4]

No major issues on Net Neutrality were reported. [Section 7.3]

No major issues on Universal Service were reported. [Section 7.6]

No major issues on e-Privacy were reported. [Section 7.7]

2. NATIONAL REGULATORY AUTHORITIES (NRA)

The degree of independence of the Austrian NRA (the Telekom-Control-Kommission - TKK and its operational arm the Rundfunk und Telekom Regulierungs-GmbH - RTR) remained unchanged in 2011. No major market reviews or remedies have been adopted in 2011. The key regulated wholesale offer for NGA, the reference offer for virtual fibre unbundling, has been amended on request by the NRA, but it is still not acceptable by all market players.

The Austrian Regulatory Authority for Broadcasting and Telecommunications (*Rundfunk und Telekom Regulierungs-GmbH* - RTR) acts as the operational arm of the Austrian Communications Authority (*Kommunikationsbehörde Austria* - KommAustria), which regulates the broadcasting sector, and of the Telecommunications Control Commission (*Telekom-Control-Kommission* - TKK), which is responsible for regulation of the telecommunications markets.

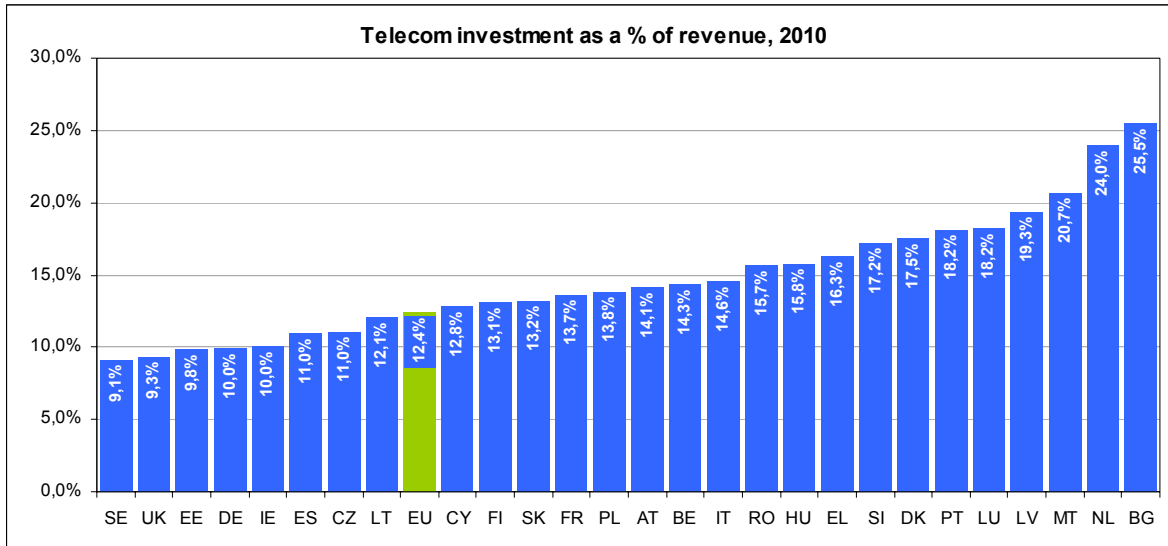
The NRA has already carried out the 3rd round review for most markets, which is more advanced than in most member states. However, since the NRA has been following the regulatory practice of carrying out the market review in two steps - first the market definition and then the market analysis together with the remedies – and with relatively long periods between the two steps, many regulatory decisions have been based on market definitions adopted considerable time ago.

In this regard, the revised Austrian Telecommunications Act contains new provisions explicitly enabling the NRA to adopt market definition, market analysis and remedies together in one step. This can be seen as a high potential towards more effective regulation based on the latest market situation.

No major market reviews or remedies have been adopted in 2011 in view of the fact that the NRA is well advanced with regard to market reviews and in view of the new provisions concerning market regulation of the revised Austrian Telecommunications Act.

3. REVENUES AND INVESTMENTS

Whereas sector revenue slightly decreased by 0.5% between 2009 and 2010, the total investment in the telecommunications sector, mainly driven by fixed broadband investments by the incumbent, significantly recovered with an increase by 33%, from €518 million in 2009 up to €693 million in 2010. In 2011, the incumbent (Telekom Austria, TA) increased its net debt by 2.2% to €3.4 billion.



Source : Commission services

The total turnover of the Austrian electronic communications sector was €4.9 billion¹ as of 31 December 2010, which is 0.5% lower than the previous year. The fixed sector's revenue was €1.8 billion (€ 1.7 billion in 2009), and the mobile sector's revenue was €3.1 billion (€3.2 billion in 2009). After the decline in previous years, the total investment in the telecommunications sector, mainly driven by fixed broadband investments by the incumbent, significantly recovered in 2010 with an increase by 33%, from €518 million in 2009 up to €693 million in 2010. The value of investments by fixed telecommunications operators was €444 million, of which 90% was invested by the incumbent, and the value of investments by mobile operators fell by 7.8% to €249 million.

4. BROADBAND

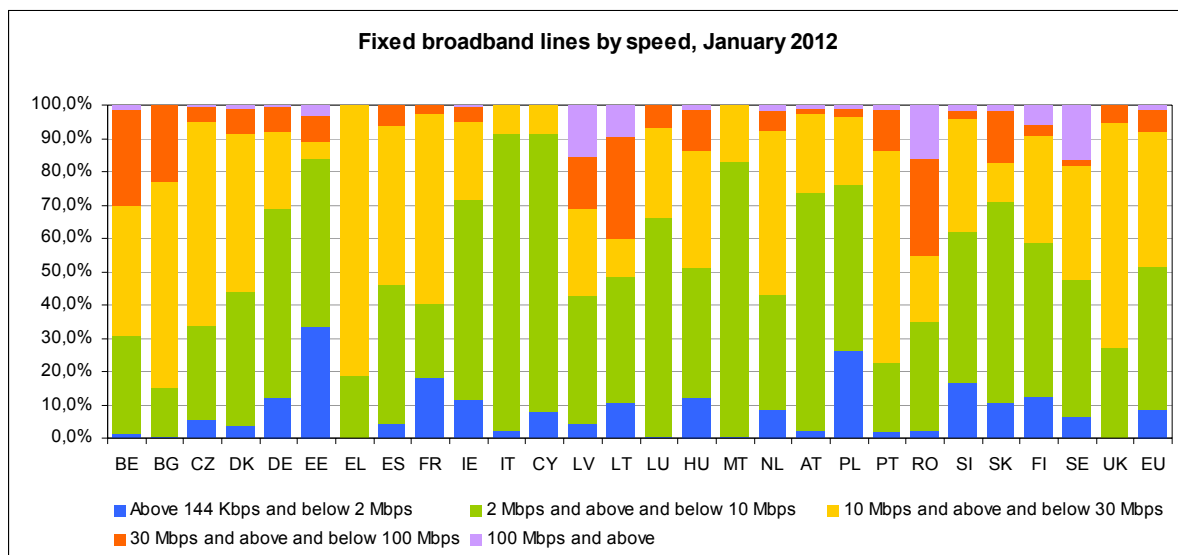
Concerning the competitive development in the fixed broadband market, the incumbent (TA) was able to further extend its leading position in the broadband market to 56% of the broadband lines despite significant growth in broadband lines provided by cable operators (UPC, Salzburg Kabel). The strong position of the incumbent (TA) can be explained by the introduction of an attractive service bundle ("Kombipaket") containing fixed and mobile telephony as well as fixed broadband for less than €20 per month.

In 2011, average progress was made towards the DAE broadband targets. Broadband coverage for all households at speeds of at least 1 Mbps has been nearly reached with a

¹ Revenues from international roaming not included.

number of white spots still being without broadband coverage. More than 95% of Austrian households had the possibility to subscribe to a broadband line with speeds of 2 Mbps and above and close to 50% to 30 Mbps and above in January 2012, which brings Austria close to the DAE coverage targets. More than 90% of the population was covered with by mobile broadband with speeds of 7 Mbps and above, which sets Austria in one of the first positions with regard to mobile broadband coverage. However, the take-up ratio of broadband lines with speeds of 30 Mbps and above remained rather low at 1.7% and of 100 Mbps and above at 0.9% in January 2012, which is below the EU average of 6.5% and 1.3% respectively. Even though offers for 100Mbps lines started in the order of €50 per month, most consumers were not willing to pay €30 more or considered lower data rates as sufficient for current use.

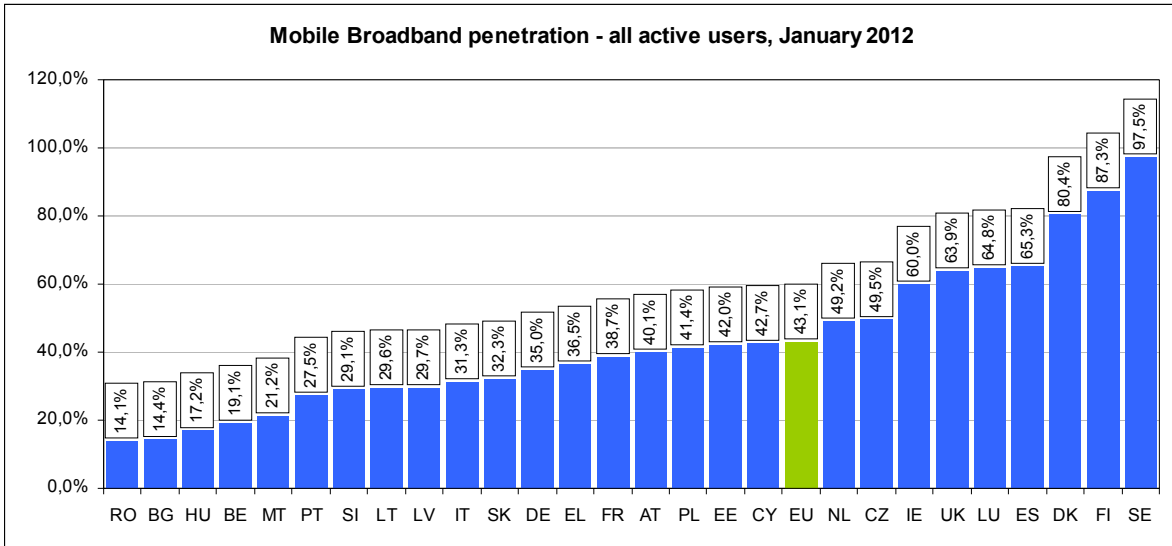
With regard to potential cost reduction in civil engineering, the revised Austrian Telecommunications Act simplifies procedures with regard to rights of way and provides for the possibility of infrastructure mapping. However, availability of mapping information remains limited. First projects in the framework of the funding programme "Broadband Austria 2013" with a total programme budget of ca. €30 million have been launched to cover selected rural areas with high bandwidth broadband until end of 2013.



Source: Communications Committee

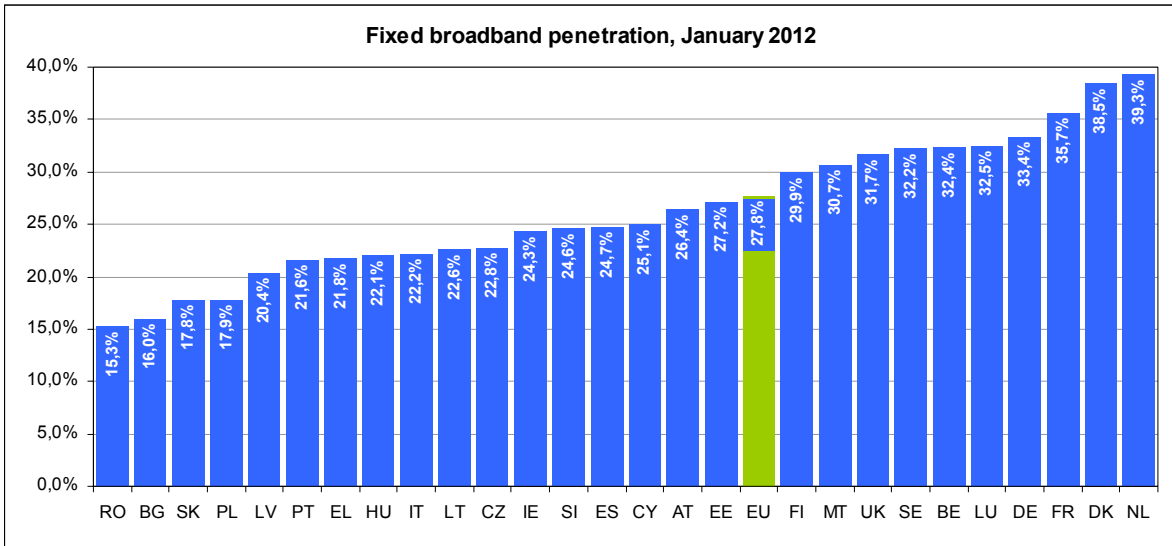
Market situation

The mobile broadband penetration rate remained among the highest in the EU in January 2012, at 40.1% taking into account active usage over all devices. When taking into account only the number of mobile broadband connections using dedicated data cards/modems/keys, which typically allow mobile Internet via laptops, the penetration was 19.9% as of January 2012 (up from 16.5% in 2011), which is well above the EU average of 8.1%. Mobile operators continued to offer attractive mobile broadband packages with retail prices in the order of €1/GB data volume and flat rates starting from €15 per month. Subscriptions containing mobile broadband services continued to increase significantly.

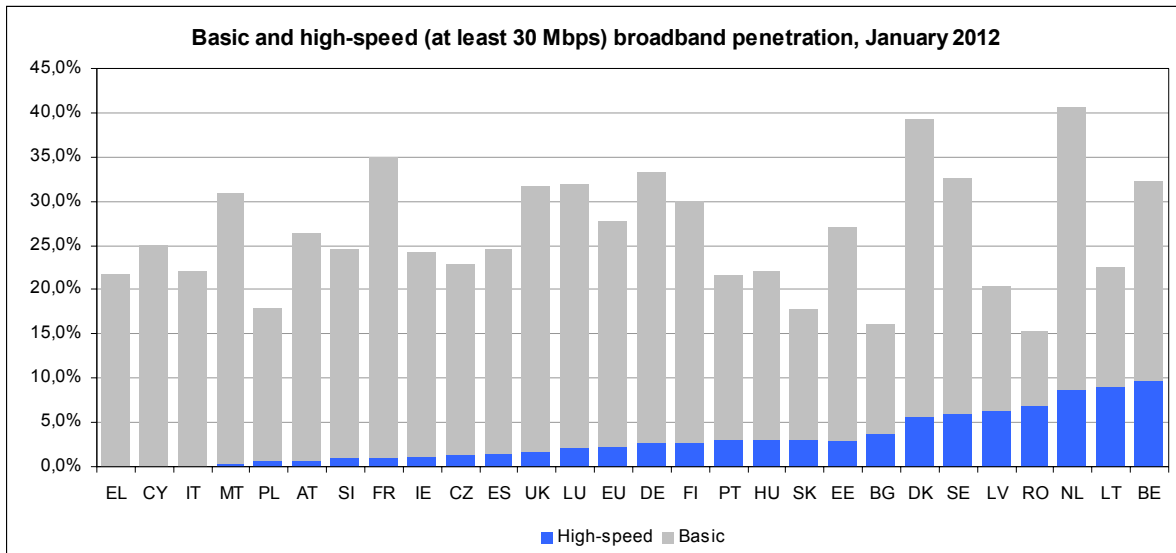


Source: Communications Committee

The fixed broadband penetration rate was 26.4% in January 2012 (up from 23.9% in January 2011), which is slightly below the EU average of 27.7%. In January 2012, fixed broadband lines based on technologies other than on DSL, mainly broadband cable, had a market share of 31%, which is well above the EU average of 24% and illustrates the high degree of infrastructure based competition. However, the market share of the incumbent continued to increase to 56% overall in fixed broadband and to 81% in DSL lines, both well above the EU average of 43% and 55%, respectively.



Source: Communications Committee



Source: Communications Committee

As in previous years, the fixed broadband market was characterised by infrastructure-based competition, with broadband cable having a market share of 29% of lines as of January 2012. The low market share of 19% for alternative operators in DSL lines can be explained by the low margin to be gained from a low retail price level, which is limited by the service bundle offered by the incumbent containing fixed and mobile telephony, fixed broadband and the option of mobile data services. This bundle had been introduced in 2007 by the incumbent to address the market trend of fixed-mobile substitution, namely the decline of fixed lines and the tendency of customers to subscribe to mobile services only. This trend can be illustrated by the slight decline of fixed broadband penetration, whereas the number of fixed broadband lines based on technologies other than DSL increased 9.2% throughout 2011. In January 2012, 85.6% of DSL broadband lines provided by alternative operators were based on full LLU and the remainder on bitstream access.

Due to the strong position of cable operators offering telephony and broadband services combined with digital TV at attractive prices, IPTV subscriptions with the incumbent have remained at a comparatively low level. However IPTV more than doubled in 2011 and reached a household penetration of 4.1 %.

The incumbent made some progress in the deployment of its NGA network. In particular in several regions with a higher population density the network was upgraded to VDSL. However, the share of broadband lines based on VDSL remained below 1% at the end of 2011. The share of broadband lines based on FTTH remained low at 0.4%.

With regard to FTTC and FTTH deployment, the incumbent continued its plans to cover 50% of households with VDSL and 5% of households with FTTH by 2013, with investment totalling about EUR 1 billion. It launched its next generation networks project which includes FTTH and FTTC/B roll out plans. The first phase of this NGA (called "GigaNet") establishes pilot 'Fibre City' projects. With regard to FTTC/B and FTTH deployment, the incumbent launched in 2011 FTTH offers in two districts in the capital covering 90,000 households and businesses and continued further two roll-out projects in two other cities. In parallel, the main cable operator has continued to upgrade its network to offer very high speeds in the main cities. Coverage through cable networks was estimated to 50% as of January 2012.

Regulatory issues

Following the obligations concerning the market for wholesale (physical) infrastructure network access from 2010 the NRA launched in January a public consultation inter alia on the reference offer on virtual unbundling that had been published by the incumbent in December 2010. Competitors criticised the reference offer as not suitable. In January it was amended at the request of the NRA and since then a number of different offers has been published and dispute resolution procedures have been initiated by competitors in order to further refine the reference offer.

Broadband plans

While the Government programme for the period 2008-2013 had defined the broadband target of 25 Mbps for all Austrian citizens by 2013, in 2011 a 'broadband plan for Austria' has been announced by the incumbent and has been endorsed by the Government. The plan defines the target of reaching high-speed broadband coverage for all Austrian households by 2020. Whereas high-speed broadband in the Digital Agenda for Europe is defined as connections providing at least 100 Mbps, the Austrian target was rather mentioned in the context of LTE roll-out and without mentioning a specific data rate.

In 2011 first projects in the framework of the funding programme "Broadband Austria 2013" that had been announced by the Government in 2010 with a total programme budget of ca. €30 million based on federal, regional and EU funds have been launched in 2011. These projects have committed to cover selected rural areas with high bandwidth broadband until end of 2013.

The revised Austrian Telecommunications Act contains amended provisions with regard to administrative procedures concerning rights of way that are now centralised at NRA level. In this regard, several market players reported progress in timely handling of requests for rights of way.

5. VOICE AND OTHER E-COMMUNICATION SERVICES

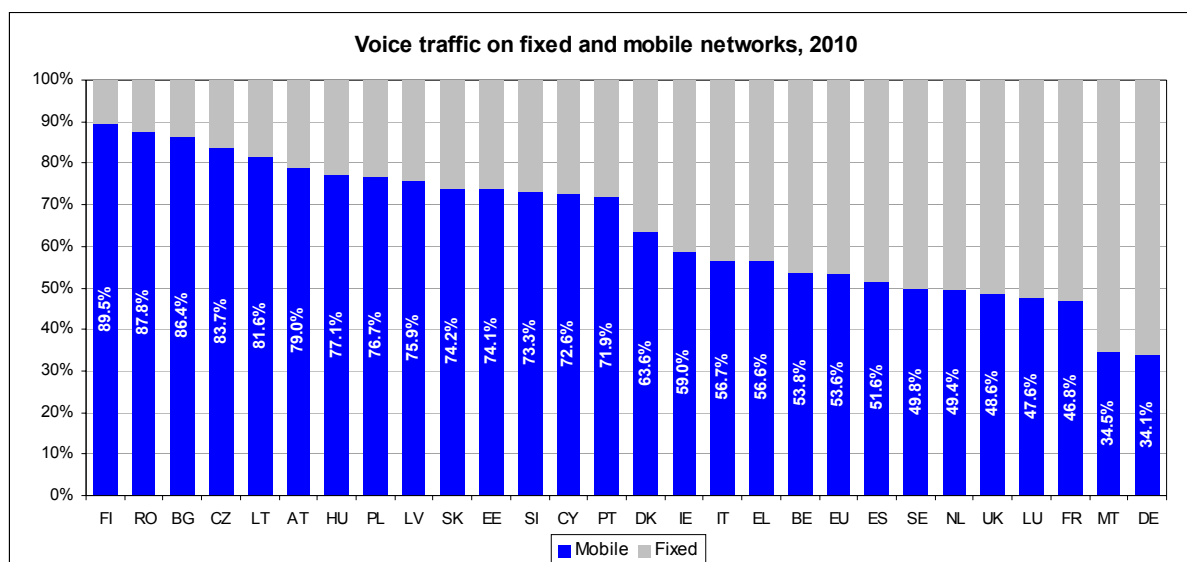
Concerning the situation of the fixed market in 2011, a positive development was the significant increase of 25% of fixed lines provided by competitors (such as UPC). However the share of 77.5% of fixed lines that are provided by the incumbent (TA) remained significantly above the EU average of 70%.

The fixed-mobile service bundle had the effect in the mobile market of a further increased market share of 41.5% of the leading operator, the mobile arm of the incumbent (TA) with the remaining share divided between the 3 competitors (T-Mobile, Orange, and 3). However, the mobile market continued to be highly competitive, with mobile service bundles being offered at low prices and attractive optional tariffs for mobile data services with large data volumes in the order of €1 per GB data volume and flat rates starting from €15 per month. Subscriptions containing mobile broadband services continued to increase significantly leading to a mobile broadband penetration rate, which remained among the highest in the EU, in particular illustrated by the high penetration rate considering dedicated devices of 19.9% in January 2012.

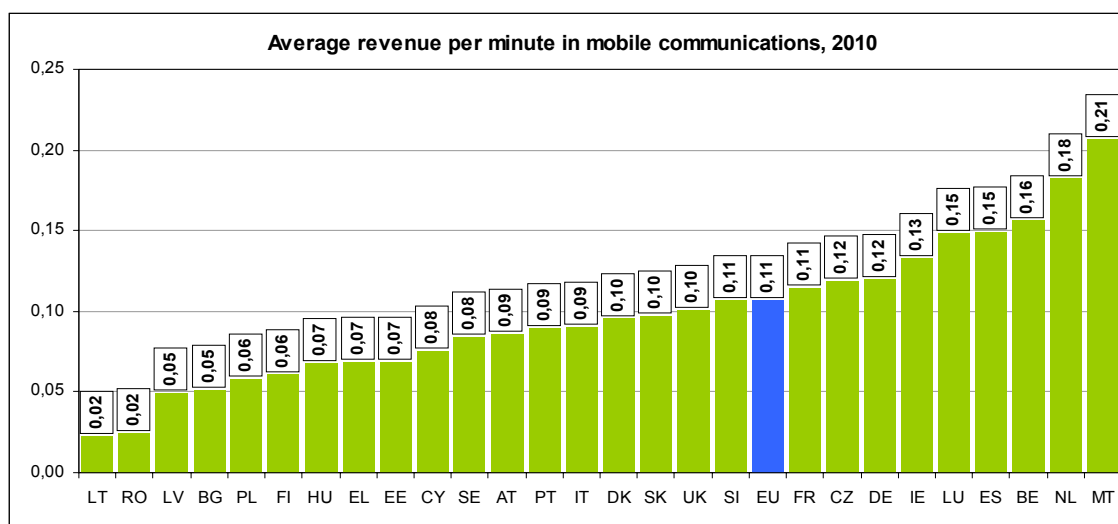
Mobile services (incl. Roaming & MTR)

Market situation

Mobile penetration further increased to 148% in October 2011, above the EU average of 127%, and an increasing proportion of the total voice traffic volumes were handled through mobile networks (81,8% in 2011). The mobile market continues to be highly competitive, with mobile service bundles being offered at low prices and attractive optional tariffs for mobile data services with large data volumes.



Source: Commission services



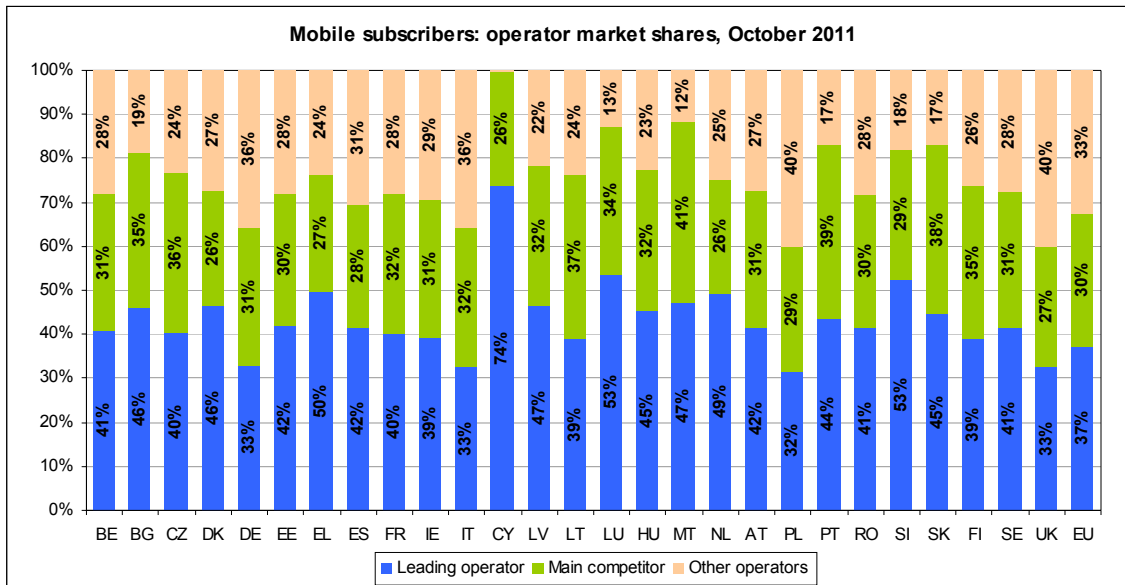
Source: Commission services

The average price per minute of mobile communications in 2010 was €0.079², which is slightly above the EU average of €0.08. The average annual revenue per user has decreased by 10% to €196³ in 2010 compared to €214 in the previous year and has passed below the EU average of €224.

² Including monthly fixed fees, which include minute packages, as well as SMS and data packages.

³ Including mobile data services.

As of October 2011, the leading mobile operator had a market share of 41.5%, the second largest operator had a market share of 31.1% and the rest of the operators together had a market share of 27.4%. 32% of users have a pre-paid service, compared to an EU average of 50%.



Source: Commission services

Operators continued the roll-out of 3G data networks based on HSPA, reaching coverage of 94% of the population, with typical data rates of 5Mbps and peak data rates of 21Mbps. Progress was also reported in the roll-out of LTE networks operated in the 2.6 GHz band in urban areas.

Regulatory issues

In April 2011 the NRA published an updated position paper on infrastructure sharing in mobile networks for cost reduction. The purpose of the paper is to explain to mobile operators the NRA's considerations on the shared use of infrastructure under cooperative arrangements. It intends to address the situation of severe competitive pressure on the mobile end user market, the need for considerable investment in new transmission technologies and innovative products, and the increasing difficulties for MNOs to establish new sites for their transmitter infrastructure. The NRA identified a list of essential points to be addressed in order to avoid weakening of competition.

With regard to the roll-out of mobile broadband networks several MNOs raised concerns on availability of backhaul capacities. They expressed the rising demand for Ethernet links connecting mobile sites, which can according to the market players be either realised by renting fibre links from the incumbent or by using microwave links.

Roaming Regulation

The tariff provisions as well as the transparency provisions for data roaming services of the amended Roaming Regulation were reported as having been applied by all operators without technical problems. The average retail roaming prices for voice under Eurotariff were

significantly below the retail cap (around 50% of the cap), but were significantly exceeding the cap for alternative tariffs. SMS tariffs under Euro-SMS were still just below the cap and under alternative tariffs significantly above the cap.

Considering the currently unregulated data roaming services the average price in Austria for EU-wide data roaming fell below €0.80/MB at the end of 2011, which was below the EU average of €1.42/MB.

Fixed (incl. Retail regulation, interconnection, leased lines)

Market situation

As in previous years, the fixed market is lagging behind the mobile market. This can be illustrated by 12.5 million SIM cards in comparison to less than 2.8 million fixed lines.

As of July 2011, 77.5% of the subscribers were using the incumbent operator for direct access⁴, a percentage which has decreased by 5.5% compared to the previous year and which is above the EU average of 69.8%. The market share of the incumbent in the calls markets has decreased; for instance, the market share of the incumbent for all fixed calls decreased to 59.8% in July 2011 from 63% in July 2010, which was below the EU average of 61.2%. A similar trend could be observed for international calls.

Broadcasting (incl. must-carry)

Market situation

As of December 2011, 50% received TV via satellite, and 44% used cable as their TV platform. The level of subscription to the IPTV service of the incumbent more than doubled and was at a level of 4% of households as of December 2011.

Regulatory issues

The digitalisation process was initiated in October 2006 and the switchover has been completed in mid-2011 sequentially by region. During the switch-off phase additional space was made available for a further six multiplexes, some of which will be based on the new DVB-T2 technology which can provide for more channels.

6. SPECTRUM MANAGEMENT

The NRA is well on track with regard to the allocation of the Digital Dividend for mobile broadband services. In 2011 the NRA carried out a public consultation concerning the assignment of the 800 MHz band and the authorisation of the 900 MHz and 1800 MHz frequencies after the expiry of the GSM licenses in 2017. Based on the outcome the NRA published has published first considerations in this regard.

⁴ Data are estimates.

After the latest amendment to the Austrian Frequency Utilisation Plan transposing the amended GSM Directive into Austrian law, the NRA launched a public consultation in order to gather suggestions and to discuss possible future scenarios with regard to the assignment of the 800 MHz band and the authorisation of the 900 MHz and 1800 MHz frequencies after the expiry of the GSM licenses between 2015 und 2019. The NRA has the intention to deal with these two issues in a coordinated way.

After reviewing the comments and opinions received in the course of the consultation, the NRA has defined key features for the upcoming frequency assignment procedures and for the liberalisation of existing GSM frequency usage rights on the basis of the relevant provisions of Austrian law. In this context the NRA indicated that it is crucial that each of the two issues is subject to the timely availability of terms of use for the frequencies, to the practical feasibility of a multi-band auction, and to the approval of the invitation to tender by the Austrian Federal Minister of Transport, Innovation and Technology.

7. CONSUMER INTEREST

116 - Harmonised numbers for services of social value

Only one 116 harmonised number is operational in Austria and awareness levels remained rather low at 18%.

After the assignment of the harmonised number 116 000 (the hotline for missing children) in 2010, the provider has given back the number in April 2011 due to high cost. After that the number was reassigned to the Austrian public broadcaster ORF in December 2011. However, the number is not operational yet. In addition to 116 000, the harmonised numbers 116 123 (the emotional support helpline for life aid) and 116 006 (the helpline for victims of crime) are currently assigned in Austria. However, out of these, only 116 123 is actually available.

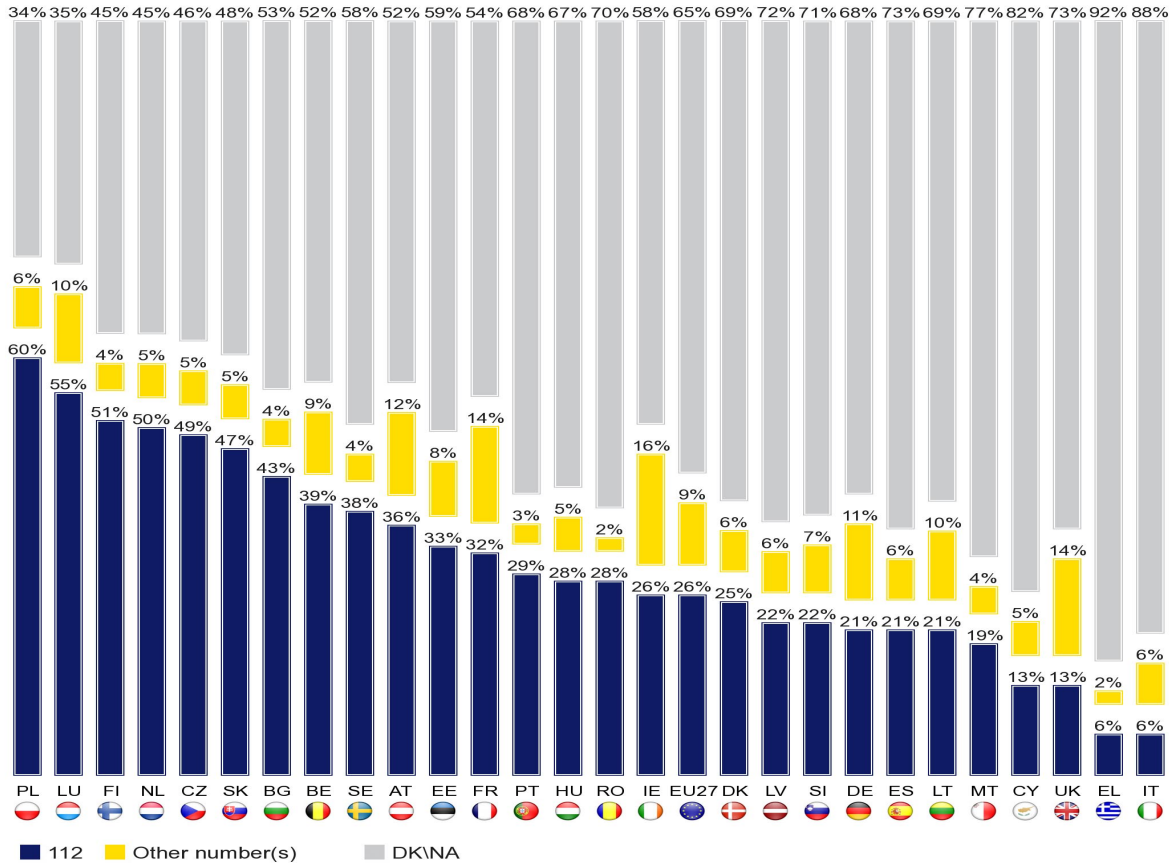
112 – European Emergency number

112 is one of several national emergency numbers and availability is good. With regard to awareness of 112 as the European emergency number Austria is among the best 8 Member States with a level of 36%.

Awareness of 112 as the EU-wide emergency number:

Can you tell me what telephone number enables you to call emergency services anywhere in the European Union?

(Base: all respondents, % by country)



Source : Eurobarometer 2012

The European emergency number 112 can be called from both fixed and mobile telephones. Caller location information is provided for all calls, upon request (‘pull-system’). There are different national emergency numbers in Austria, and despite information campaigns launched by the Government via TV and in public transport, the level of awareness among the population of the European emergency number 112 is currently at a level of 36%.

Net neutrality & quality of service

No major issues on Net Neutrality were reported.

The revised Austrian Telecommunications Act contains provisions intended to transpose the new requirements of the revised Universal Service Directive with regard to transparency and

quality of service. Consumer organisations criticised the mere empowerment of the NRA to adopt ordinances in this regard as insufficient.

In May the Internet Service Provider UPC was required by an Austrian Trade Court to block an Internet portal that was illegally offering video content and to make it inaccessible to its customers. Both ISPs and user groups were criticising this decision, giving the reason that according to the EU e-Commerce Directive the access provider was not liable for the content transmitted over its network.

Consumer complaints, tariff transparency

The debate on consumer issues in 2011 was centred on many complaints with regard to bill shocks of mobile data users. In this regard Austria became very proactive in 2011 and the NRA published a proposal for an ordinance on cost control for mobile data services for public consultation. No major issues on Net Neutrality, Universal Service and e-Privacy were reported.

43% of consumer complaints were addressing billing issues with regard to mobile data services. In particular complaints were related to high prices for consumed volumes exceeding the flat rate limit and data charges outside the service bundle with an average amount over all cases of €630.

In this regard, the new provisions of the revised Austrian Telecommunications Act reinforce the power of the NRA to adopt ordinances on cost control of telecommunication services. Accordingly, in November the NRA published a draft ordinance on cost limitation for mobile data services for public consultation⁵. It inter alia contains the requirement to cut the data connection at the amount of €60 and to send a warning message at the amount of €30 unless the user opts out of this facility.

As in the previous year there were a considerable number of complaints on the hidden costs that arise in addition to advertised prices comprising of e.g. excessive prices for value-added service numbers charged over mobile networks and outside the flat rate volume. By far the most complaints are related to high prices for consumed volumes exceeding the flat rate limit and data charges outside the service bundle. Consumers still often complained about hidden costs, in particular when tariffs were switched by the same provider.

Number portability

Number portability in mobile and fixed networks was usually done within the one day and procedures to change provider were reported to work smoothly in Austria.

⁵ The ordinance on cost limitation has been adopted in February 2012 with entry into force in May 2012.

The issue of changing provider has not been identified as a problem, as the service is generally transferred within one day, overnight. The number of complaints on service interruptions received by the NRA was not significant.

In January 2012 the NRA proposed a draft amendment of the ordinance on number portability⁶. It changes inter alia the requirement to announce tariff information for ported numbers at the beginning of phone calls from opt-out to opt-in. Furthermore, it provides that €19 is the maximum fee customers have to pay for porting their number.

Universal service

No major issues on Universal Service were reported.

As in previous years, the financing of universal service was not based on the funding mechanism laid down in the Telecommunications Act, and operators continued to agree amongst themselves on compensation for the universal service provider.

ePrivacy

No major issues on e-Privacy were reported.

After the judgment of the Court of Justice of the EU in December 2010 against Austria on the failure to transpose the EU Directive on data retention, the Directive has been transposed into Austrian law in April with the relevant provisions being applicable from April 2012.

⁶ The ordinance on number portability has been adopted in February 2012 with entry into force in March 2012.



EUROPEAN COMMISSION
Information Society and Media Directorate-General
Electronic Communications Policy
Implementation of Regulatory Framework

18 June 2012

BELGIUM

2011

Telecommunication Market and Regulatory Developments

BELGIUM

1. MAIN MARKET & REGULATORY DEVELOPMENTS: BEST PRACTICES AND CHALLENGES

Development of the sector

The **revenues** of the electronic communications sector and the overall **investments** in Belgium slightly increased in 2011. Between 2009 and 2010, the growth in revenues generated by the electronic communications sector increased by 1%. The investment over revenue ratio in the Belgian telecom sector for 2011 was 14.3%, well above the EU average of 12.4%. (*Section 3*)

In the fixed **broadband market**, as of July 2011, Belgacom had a 46% market share in broadband lines (45% in January 2012). In January 2012, the DSL lines share in fixed broadband represented 52%, which is below the EU average of 76%, and the cable broadband lines share represented 47%, which is well above the EU average of 17% and places Belgium in the first position in the EU. While fixed broadband penetration rates are generally above the EU average, and enjoyed a growth of 1.20% over the period from January 2011 to January 2012, mobile broadband rates stand below. The mobile penetration rate, which stood at 110,1% in 2010, is still well behind the EU-27 average of 127%, with a 114.9% rate for 2011. (*Section 4.1*)

Regarding the **fixed market**, the incumbent's (Belgacom) market share remains robust with a very little decrease from 66.6% in December 2009 to 63.7% in December 2010 (for all types of calls by traffic volume) and alternative operators still expressed their concerns about Belgacom's dominance in the fixed market.

Regarding the **mobile market**, mobile charges prices have slightly decreased in accordance with a glide path leading to tariffs based on costs as determined by a pure LRIC cost model but remain far above the EU average of 3.87 €cent per minute. The average period for both fixed and mobile **number portability** has remained the same as in the previous years (2 days). The number of fixed ported numbers decreased from 212.438 in 2010 to 231.064 transactions in 2011, which represents a decrease of 4%, while mobile portability has increased from 579.122 in 2010 to 579.390 in 2011. A draft proposal for a Royal Decree modernising the framework and transposing the "one-day porting rule is expected to be passed in 2012.. (*Section 7.5*)

Progress in broadband deployment and take-up

At the end of 2011, Belgium was moving towards achieving the DAE target aiming at securing a basic broadband connection (in the order of 2 Mbps) for all EU households by 2013. The broadband strategy adopted by the former Government in 2009 was confirmed

by the new Government which was appointed in December 2011 and the new federal Minister for Economics and in charge of Telecommunications had announced a « Digital Agenda.be ». This plan unifies most of the targets that are fixed by the Digital Agenda for Europe. While fixed broadband penetration rates are generally above the EU average, and enjoyed a growth of 1.20% over the period from January 2011 to January 2012, mobile broadband rates stand below. *(Section 4.2)*

Independence and effectiveness of the NRA

The Belgian NRA, to which a new Board was appointed in November 2009, has shown strong willingness to keep up with the fresh start it had initiated in 2010. Overall, positive feedback was reported by the various stakeholders. *(Section 2)*

Implementation of the framework

Belgium has only partially transposed the revised European Union regulatory framework, which was due by 25 May 2011. Infringement proceedings were therefore ongoing at the end of the reporting period.

Belgium has not yet amended its legislation regarding the calculation of the net cost for the provision of social tariffs, for which it was condemned by the Court of Justice in case C-134/10, and regarding must-carry rules for which it was condemned by the Court of Justice in case C-222/08.

Spectrum management

With regard to spectrum management, the Belgian NRA adopted a decision concerning the assignment of spectrum in the 900 MHz and 1800 MHz bands, and in the 2.1 GHz band, and successfully conducted 3G and 4G auctions in 2011. The 800 MHz band is still not allocated to mobile communications services. *(Section 6)*

Citizens and consumer protection

Availability of 116 harmonised numbers has been good in Belgium, and awareness levels remain the highest of the EU27 with 26%. *(Section 7.1)* 112 is not the historic national emergency number and Belgians' knowledge of 112 as the EU-wide emergency number amounts to 39%, placing the country in the 8th position in the EU. *(Section 7.2)* With regard to universal service and must carry, Belgium has not yet amended its legislation for which it was condemned by the Court of Justice respectively in cases C-134/10 and C-222/08. *(Section 7.6)*. The Telecom Mediation Service reports an increase in the complaints which concern mainly international roaming, cancellation of contract charges, charges for received SMS in value added services, high mobile internet prices and billing. *(Section 7.4)*. No major issues on Net Neutrality and e-Privacy were reported. *(Sections 7.3 and 7.7)*.

2. NATIONAL REGULATORY AUTHORITY

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The Belgian NRA, to which a new Board was appointed in November 2009, has shown strong willingness to keep up with the fresh start it had initiated in 2010. Overall, positive feedback was reported by the various stakeholders.

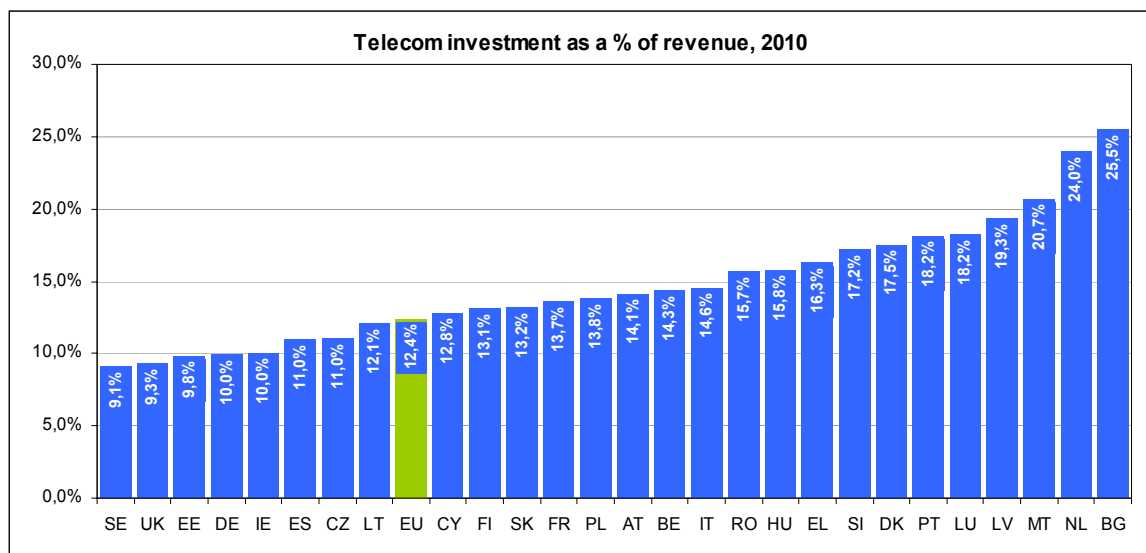
In November 2011, i.e. one year after its adoption, the Belgian NRA (*Belgisch Instituut voor postdiensten en telecommunicatie – Institut belges des services postaux et des télécommunications*) presented its 2010-2013 strategic plan to the Belgian Parliament during a hearing. The Belgian NRA is drawing up a work plan to implement the strategic plan.

While the Belgian NRA has a separate budget, the "*Loi relative au statut du régulateur des secteurs des postes et des télécommunications belges*" of 17 January 2003 states that the NRA shall transfer its resources to the State when they exceed the running costs, and may not commit itself beyond the hedging of running costs.

The Belgian NRA helped to solve four disputes in 2011 through mediation, in particular concerning the originating tariffs for mobile calls to value added services. It published guidelines on negotiated solutions in 2011.

3. REVENUES AND INVESTMENTS

The **revenues** of the electronic communications sector and the overall **investments** in Belgium slightly increased in 2011. Between 2009 and 2010, the growth in revenues generated by the electronic communications sector increased by 1%. The investment over revenue ratio in the Belgian telecom sector for 2011 was 14.3%, well above the EU average of 12.4



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Sour services

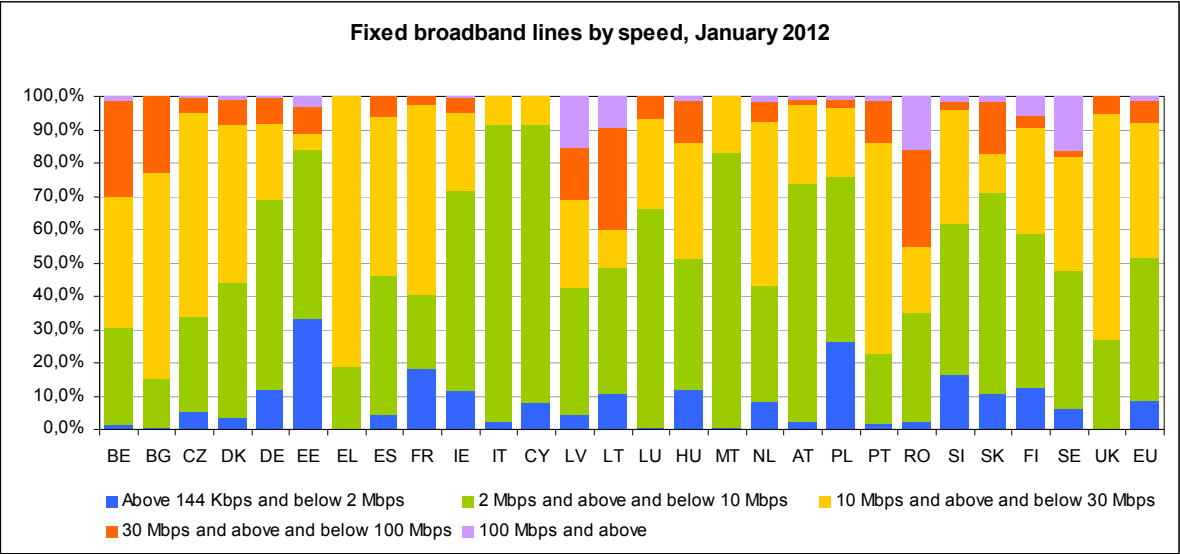
The total revenue generated by the Belgian electronic communications sector has increased from €8.571 in 2009 to €8.656 billion in 2010. Between 2009 and 2010, the growth in revenues generated by the electronic communications sector decreased by 3.2%.

Overall investments in the electronic communications sector totalled €1.240 billion, which represents a slight increase in comparison with the preceding year (€1.081 billion). The investment over revenue ratio in the Belgian telecom sector for 2011 was 14.3%, well above the EU average of 12.4%.

4. BROADBAND

In the fixed **broadband market**, as of July 2011, Belgacom had a 46% market share in broadband lines (45% in January 2012). In January 2012, the DSL lines share in fixed broadband represented 52%, which is below the EU average of 76%, and the cable broadband lines share represented 47%, which is well above the EU average of 17% and places Belgium in the first position in the EU. While fixed broadband penetration rates are generally above the EU average, and enjoyed a growth of 1.20% over the period from January 2011 to January 2012, mobile broadband rates stand below. The mobile penetration rate, which stood at 110,1% in 2010, is still well behind the EU-27 average of 127%, with a 114.9% rate for 2011.

At the end of 2011, Belgium was moving towards achieving the DAE target aiming at securing a basic broadband connection (in the order of 2 Mbps) for all EU households by 2013. The broadband strategy adopted by the former Government in 2009 was confirmed by the new Government which was appointed in December 2011 and the new federal Minister for Economics and in charge of Telecommunications had announced a « Digital Agenda.be ». This plan unifies most of the targets that are fixed by the Digital Agenda for Europe. While fixed broadband penetration rates are generally above the EU average, and enjoyed a growth of 1.20% over the period from January 2011 to January 2012, mobile broadband rates stand below.

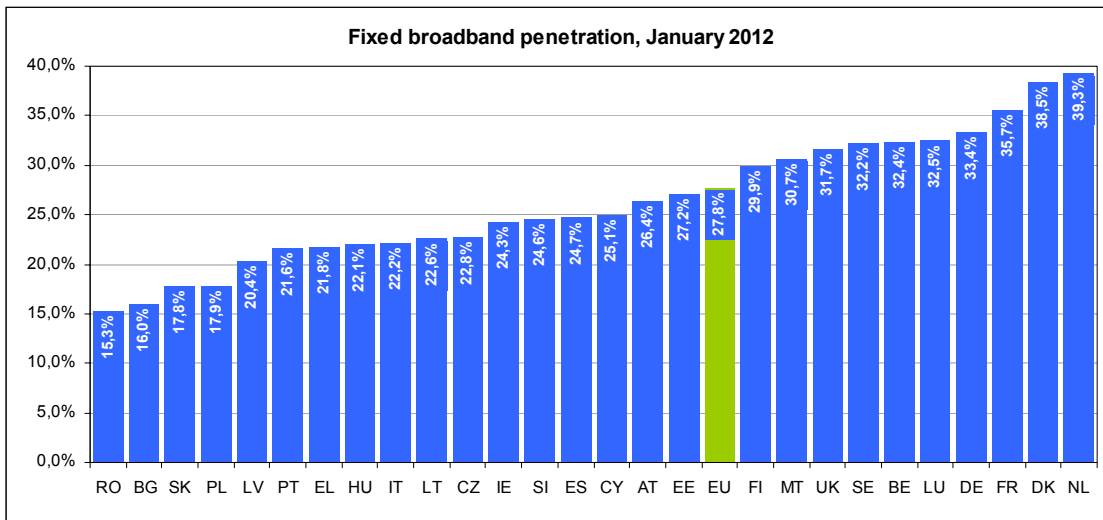


Source: Communications Committee

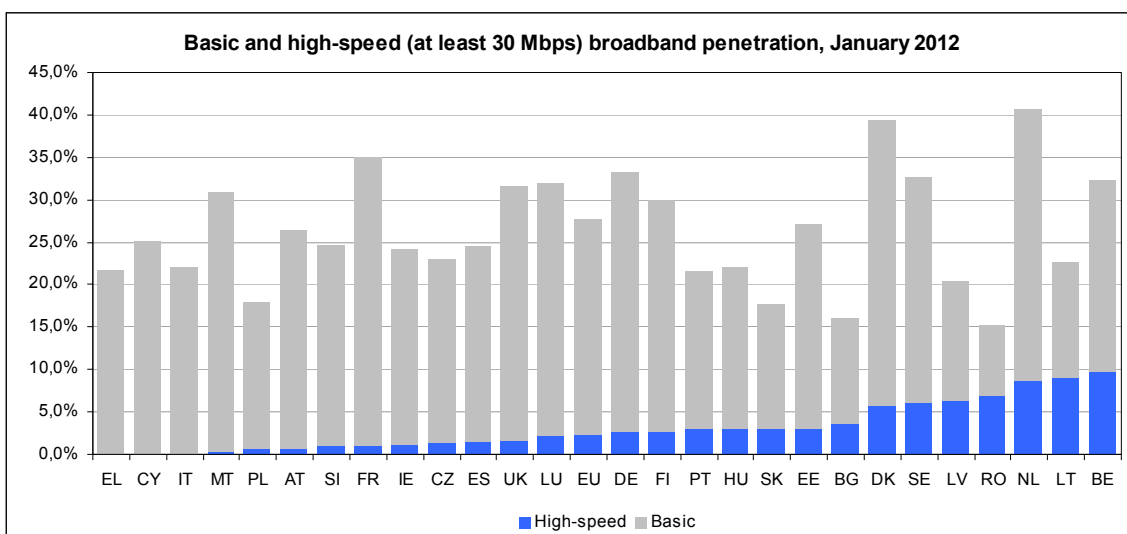
4.1 Market situation & Regulatory developments

With a penetration rate for fixed broadband of 32.4% in January 2012, which represents a 1.2% annual growth in comparison with January 2011, Belgium is still above the European average of 27.7%. Belgium increased the total number of broadband lines to 3.543 million in January 2012, compared to 3.373 million in January 2011. As of July 2011, the incumbent had a 46% market share in broadband lines. The mobile broadband penetration rate for all active users stood in January 2012 at 19.1%, which is still significantly lower than the EU average (43.1%). The mobile broadband penetration rate for dedicated services stood in January 2012 at 3.3%, slightly below the EU average of 8.1%, and the number of mobile broadband active users for January 2012 equalled 2.081.323.

In January 2012, the DSL lines share in fixed broadband represented 52%, which is below the EU average of 76%, and the cable broadband lines share represented 47%, which is well above the EU average of 17% and places Belgium in the first position in the EU.

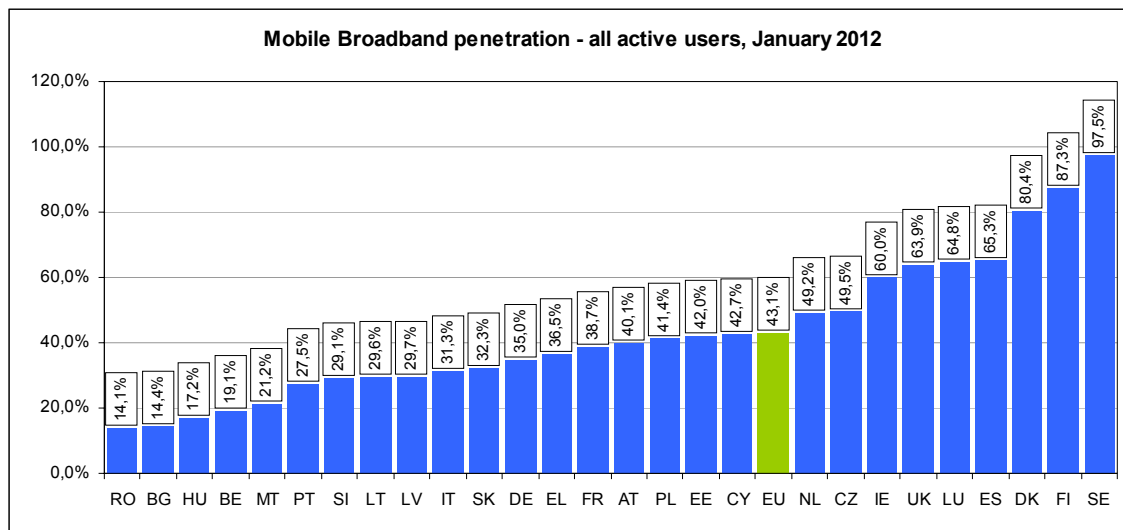


Source: Communications Committee



Source: Communications Committee

In terms of speed, 33.7% (29.4%) of the lines delivered 2 Mbps and above, 34.8% (69.2%) of the lines delivered 10 Mbps and above, 28.5% delivered 30 Mbps and above and 1.5% delivered 100 Mbps and above.



Source: Communications Committee

In July 2011, the Conference of regulators of the electronic communications sector (*CRC*), which is grouping BIPT and the regional regulators competent for the regulation of media matters, including that of broadcasting transmission services, adopted a decision concerning the second review of the markets for wholesale physical network infrastructure access at a fixed location, and for wholesale broadband access. The decision designates the fixed incumbent as having significant market power (SMP) on the two markets and imposed on it a full set of remedies. On the one hand, remedies on the wholesale (physical) network infrastructure access market include the obligation to provide shared or fully unbundled access to local loops and collocation services (including backhaul), except for those cases where VDSL2 technology is deployed by SMP operator with a vectoring solution. On the other hand, remedies on the wholesale broadband access market include the obligation to provide wholesale broadband access (including a *multicast functionality*), collocation services (including backhaul) and backhaul *inter alia* by means of GigaEthernet. Sub-loop unbundling has however not been imposed under the condition of effective deployment of vectoring and under reserve of technological evolution solving the issue of lines' coordination by a single equipment (i.e. DSLAM) on the same sub-loop. This Decision was appealed by the incumbent and the case was still pending at the end of the reporting period.

In July and November 2011, the NRA notified draft measures adjusting the reference offer for wholesale broadband access. The first notification relates to the introduction of a new line booking system combined with the possibility for OLOs to make use of their own certified technicians to provision broadband lines towards end customers. Based on obligations commonly referred to as "operational excellence" as defined in the decision adopted in July 2011, the NRA has also imposed obligations to solve operational issues identified in the context of an audit carried out by the NRA in 2009. The Commission did not comment upon the draft decision. The NRA adopted its final decision on 11 August 2011.

The second notification relates to technical details of the implementation of the previously imposed obligation to use the Customer Premises Equipments (CPE) of alternative operators

on the incumbent's network under the decision adopted in July 2011. The draft decision aims at ensuring that the introduction of the CPEs of alternative operators on the incumbent's network will not jeopardise the proper functioning of the latter, the integrity of its network and its evolution. It also defines the respective responsibilities of the incumbent and the alternative operators regarding the CPE. Finally, the draft decision aims to ensure that alternative operators do not have to comply with unnecessary or disproportionate conditions to put their own CPEs in place. The Commission did not comment upon the draft decision. The NRA adopted its final decision by the 23rd of December 2011.

4.2 National Plans, private & public investments

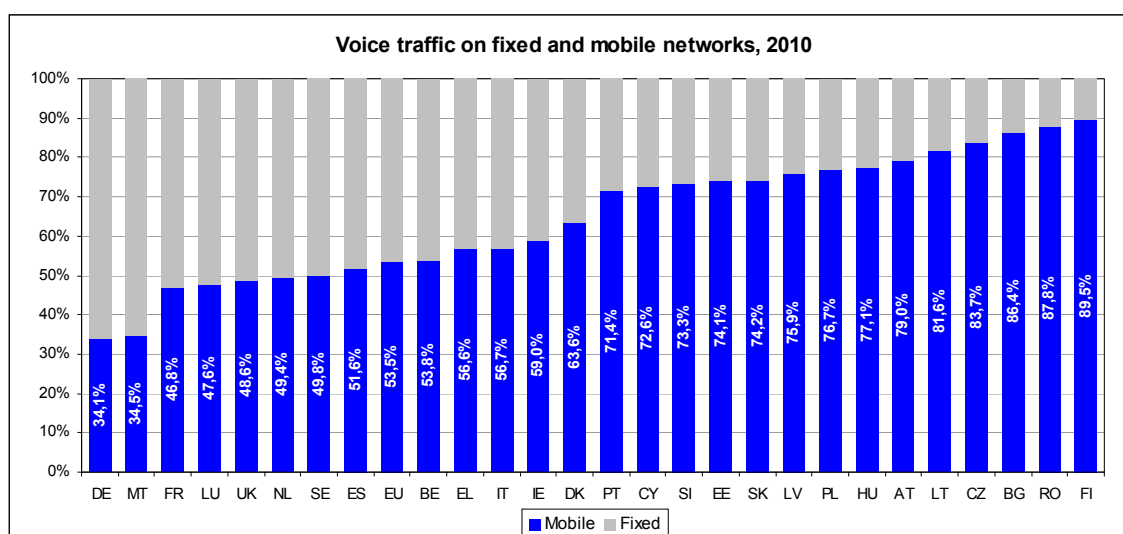
Belgium is implementing the 2009 digital plan called "*Coeur de l'Europe numérique 2010-2015*" / "*Digitaal hart van Europa 2010-2015*". This plan has five objectives which are to be achieved by 30 specific actions. The objectives consist in reaching a 90% rate of families connected to broadband, having 1 Belgian pupil out of 2, under the age of 6, using a computer or a netbook as his basic equipment, counting 50% of Belgian inhabitants using mobile broadband, having 50% of bills in an electronic format and 1 worker out of 3 using teleworking on a regular basis. The new federal Minister for Economics and in charge of Telecommunications had announced a « Digital Agenda.be ». This plan unifies most of the targets that are fixed by the Digital Agenda for Europe.

While the incumbent continues its pilot exercises for fibre-to-the-home (FTTH), no plans for commercial roll-out are reported. According to the Belgian regulator, the fibre-to-the-office (FFTO) covers the territory at a 60% rate and commercial offers deliver a speed up to 10GBps. VDSL2 covers 76% of the Belgian households and Belgium reports a target of 85% for 2013. The introduction of Digital Line management in March 2012 increases potential VDSL2 speeds up to 50Mbps. The vectoring technology will be tested in 2012/2013 on a limited scale and its commercialisation is foreseen in 2014. DOCIS 3 is operational on bi-directional cable allowing for speeds up to 100 Mbps.

5. VOICE AND OTHER eCOMMUNICATIONS SERVICES

Regarding the **fixed market**, the incumbent's (Belgacom) market share remains robust with a very little decrease from 66.6% in December 2009 to 63.7% in December 2010 (for all types of calls by traffic volume) and alternative operators still expressed their concerns about Belgacom's dominance in the fixed market. Regarding the **mobile market**, mobile charges prices have slightly decreased in accordance with a glide path leading to tariffs based on costs as determined by a pure LRIC cost model but remain far above the EU average of 3.87 €cent per minute.

5.1 Mobile services



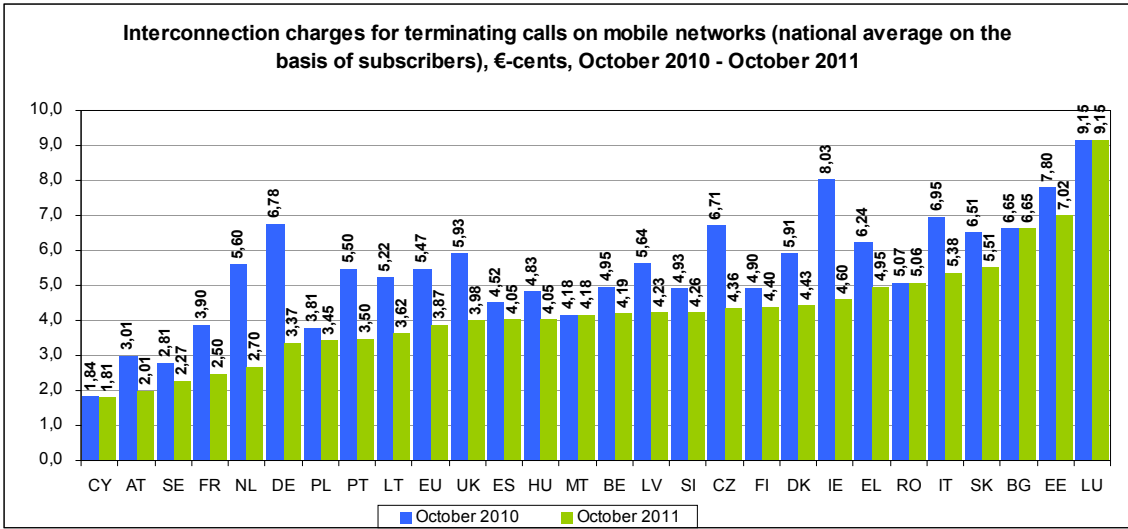
Source: Commission services

Market situation

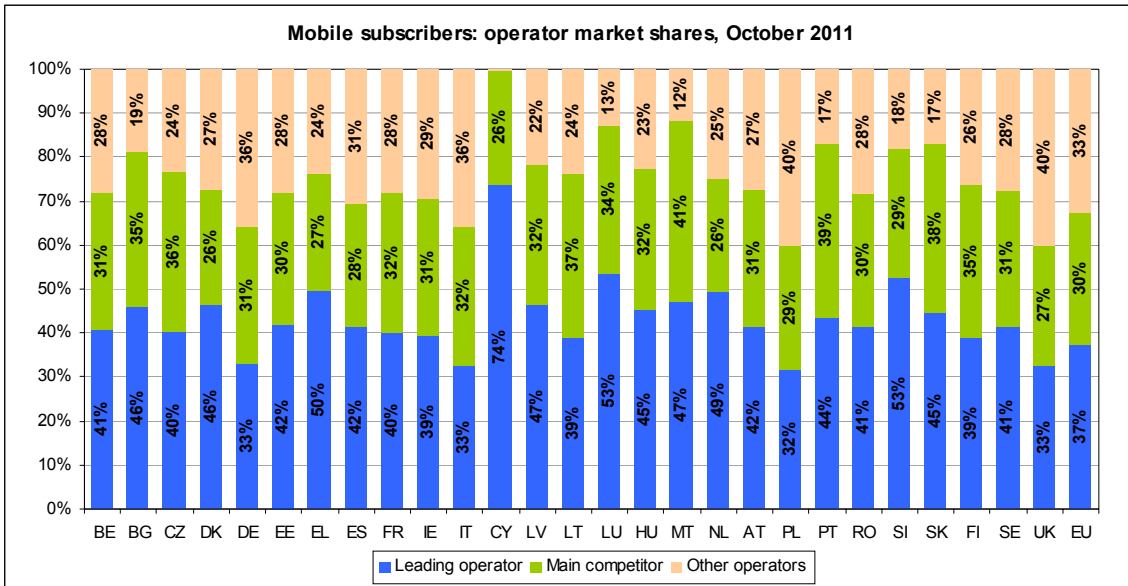
The mobile penetration rate, which stood at 110,1% in 2010, is still well behind the EU-27 average of 127%, with a 114.9% rate for 2011. Mobile charges prices have slightly decreased in accordance with a glide path leading to tariffs based on costs as determined by a pure LRIC cost model (nominal interconnection charges for terminating calls on mobile networks have decreased from 4.95 €cent per minute in October 2010 to 4.19 in October 2011) but remain far above the EU average of 3.87 €cent per minute. The total number of subscriptions increased very slightly in 2011 with a total of 12.584 million in October 2011, compared to 12.057 million as of October 2010. The volume of traffic on mobile networks equalled 53.8% in 2010. The share of pre-paid users in the mobile market in Belgium remains high with 48% of SIM cards in 2011. The main mobile network operator's market share equalled 41% in 2011, while its main competitor's amounted to 31%, and other competitors' equalled 28%. The share of MVNOs represented 1.8%. Alternative operators deem the mobile market to be competitive, even if they regret the incumbent's mobile branch strong position on the business market.

The average revenue per minute equalled €0.16 in 2010 while it was €0.17 in 2009. The average revenue per user amounted to €260 in 2010, which is a decrease in comparison with the preceding year (€319). The revenues of the mobile telephony sector in Belgium decreased in 2010 with a total of 3.963 million, in comparison with 4.002 million in 2009. Investment in the sector rose from €341 million in 2009 to €391 million in 2010, which represented a 16% increase.

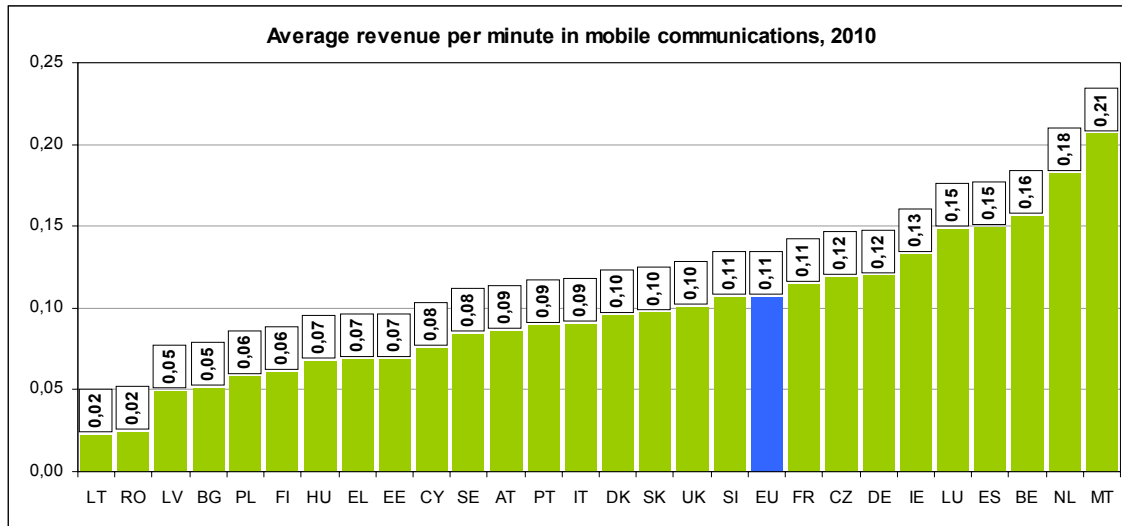
The 3G roll-out is reported to increase according to the operators. Three operators deliver 3G services. The Belgian regulator has measured the effective 3G coverage by the operators and is expected to publish the results in the 2011 annual report.



Source: Commission services



Source: Commission services



Source

e: Commission services

Regulatory issues

BIPT notified its draft measure for regulating mobile termination rates in May 2010. The Commission invited BIPT to consider accelerating the implementation of its LRIC costing model and to re-assess the risk of discriminatory pricing and cross-subsidisation at different steps of the glide path, as appropriate. The Decision of 29 June 2010, which was regulating the voice call termination rate on mobile networks, was appealed before the Brussels Court of Appeal. The request for suspension was dismissed by the Court while the request for annulment is still pending to date. The Decision designated all mobile operators as having SMP on their respective networks, and a set of remedies, including price regulation, non-discrimination and accounting separation obligations were imposed on these undertakings. The Decision sets the mobile termination rates at 1.08€/minute (before correction for inflation) as of 1 January 2013, at the end of a glide-path.

Roaming Regulation

Belgian operators appear to be in compliance with the requirements of the Roaming regulation.

5.2 Fixed

Market situation

Investments made by the incumbent decreased significantly, from €457 million in 2009 to €353 million in 2010, while investments made by alternative operators increased from €283 million in 2009 to €314 million in 2011. The voice traffic on fixed networks has decreased from 47.4% in 2009 to 46.2% in 2010.

The interconnection charges for terminating calls on the incumbent's fixed network are well above the EU average of 0.46 €cent per minute, with 0.62 €cent per minute in October 2011, the same price as in October 2010, and the highest rate in the EU.

The incumbent's market share remains robust with a very little decrease from 66.6% in December 2009 to 63.7% in December 2010 (for all types of calls by traffic volume).

Alternative operators still expressed their concerns about the incumbent's dominance in the fixed market and stressed that the decline in its market share has been very little in the preceding years.

The total of subscribers using an alternative operator for direct access in July 2011 amounted to 27.3%. The market share (by traffic volume) of VoIP operators slightly increased from 24% in 2009 to 26.9% in December 2010.

The bundled offer penetration rate significantly increased from 13.6% in 2010 to 18.2% in July 2011, which represents a growth of 34%. The Double-play penetration rate was 8.7% in 2011 while the triple-play penetration offers' was 9.1%, representing a respective increase of 0.2% and 4.1% in comparison with the preceding year. Market forces in the Belgian market are reported to be strongly driven by bundled offers.

Regulatory issues

On 15 March 2011, the Belgian regulator adopted a decision concerning the wholesale market for transit services in the public telephone network provided at a fixed location. IBPT considered that *ex ante* regulation was no longer justified in this market and lifted existing obligations after a transition period of 6 months.

On 2 March 2012, the Belgian regulator adopted a decision concerning the markets for call termination on individual public telephone networks provided at a fixed location in Belgium. IBPT designated 16 undertakings as individually having SMP on their relevant markets, and subsequently imposed a set of remedies, including the obligation to provide access to, and use of, certain network elements and associated infrastructure, transparency, non-discrimination, as well as a price control remedy based on cost-orientation. An obligation of transparency with regard to information on future networks evolution, and an obligation of cost-accounting were further imposed on the incumbent. BIPT has committed to take all possible actions to implement the pure LRIC for fixed termination services as soon as possible and at the latest during the year 2013. The Commission commented that, should the BU-LRIC model developed by the regulator not be finalised on time the regulator should make sure that any alternative methodology would not exceed the average termination rate set by NRAs implementing the recommended cost methodology, in compliance with Recommend 12 of the Termination Rates Recommendation.

5.3 Broadcasting

Market situation

Cable TV remains the most used television platform. The household penetration slightly increased in 2011 with a 74.8% rate, in comparison with 73.9% in 2010. IPTV has significantly increased with a penetration rate of 17.8% in 2011, in comparison with 13.7% in 2010. An operator started in 2011 to offer satellite TV combined with ADSL2+. The revenues from Pay-TV increased from €721 million in 2009 to €750 millions in 2010.

In 2011 Belgian customers continue to show interest for bundled offers. The Belgian regulator reports that 37% of the total number of broadcasting customers have subscribed to a bundled offer, and that 62% of customers having digital TV subscribed to this service through a bundled offer.

On 1 July 2011, the Conference of regulators of the electronic communications sector (*CRC*) adopted a decision concerning the review of the retail market for the delivery of broadcast signals. The decision identified five operators as having a significant market power in their respective coverage area, including Telenet, Brutélé, Numéricable, Tecteo and AIESH. The decision consequently imposed access obligations, including an obligation to resell analogue TV, an obligation of access to the digital TV platform, and an obligation to resell broadband Internet. Other remedies include non-discrimination, transparency, including the publication of a reference offer, and a wholesale price control based on retail minus, to be defined after a national consultation. The Commission had questioned the notified draft decision as to the lack of a related wholesale market analysis, and requested the *CRC* to justify in its final measure the proportionality of the broadband Internet resale obligation and of the analogue TV resale obligation, and not to prolong unnecessarily the provision of analogue broadcasting analogue TV transmission. The Commission also invited the *CRC* to closely monitor and re-assess the developments in the market in terms of infrastructure and competition.

6. SPECTRUM MANAGEMENT

With regard to spectrum management, the Belgian NRA adopted a decision concerning the assignment of spectrum in the 900 MHz and 1800 MHz bands, and in the 2.1 GHz band, and successfully conducted 3G and 4G auctions in 2011. The 800 MHz band is still not allocated to mobile communications services.

On 15 March 2011, the Belgian regulator launched a call for candidates in the 2.1 GHz band. Further to this process, the Belgian regulator received one application, to whom the licence was granted on 2 August 2011. It is now under the obligation to start offering 3G services no later than 18 months from the date when the licence was granted, i.e. 15 July 2011.

The Belgian regulator adopted a decision on 16 November 2011 concerning the assignment of spectrum in the 900 MHz and 1800 MHz bands and in the 2.1 GHz band. The decision reformed these bands until 27 November 2015, and assigned 20 MHz of contiguous FDD spectrum to the 4 operators, thereby aiming at creating the possibility to fully benefit from the potential of the LTE technology. The decision also introduced technology neutrality.

On 28 November 2011, the Belgian regulator successfully concluded the 4G auction. Apart from frequency blocks in the 2 500-2 570 MHz and 2 620-2 690 MHz frequency bands (FDD spectrum), also the 2 575-2 620 MHz frequency block (TDD spectrum) was put up for auction. Four bidders acquired rights for a period of 15 years starting from 1 July 2012. While no coverage obligation was imposed as such, there is an obligation on the part of the licence holders to inform the public about the actual coverage.

In March 2011, the Belgian regulator completed the assignment of rights of use in the frequency bands 3410-3500/3510-3600 MHz. The bands were allocated through a beauty contest, based on network capacity, to two operators for 10 years, at the end of which the licences can be renewed for a five-year-period.

The 800 MHz band still remains allocated to broadcasting in Belgium and cooperation between the Federal Government and the Communities is required to allocate the 800 MHz band to mobile broadband services.

Regarding Mobile Satellite Systems (MSS), the general rules on enforcement of conditions and regulations laid down by the "*Loi relative aux communications électroniques*" of 13 June 2005 apply. An authorisation was issued to one of the two selected MSS operators in June 2010 for MSS satellite Component and Terminals. No regulation on Complementary Ground Components is in place and no authorisation was granted to operators so far.

7. CONSUMER INTEREST

7.1 116- Harmonised numbers for services of social value

Availability of 116 harmonised numbers has been good in Belgium, and awareness levels remain the highest of the EU27 with 26%.

Out of the 116 range, two numbers has been assigned in Belgium. The number, assigned to the service for missing children, is now operational. Regarding 116111 and 116123, a call for candidates was published already in 2007, albeit unsuccessfully. 116117 was assigned in 2011 to the Ministry of Health for the non-emergency medical on-call service.

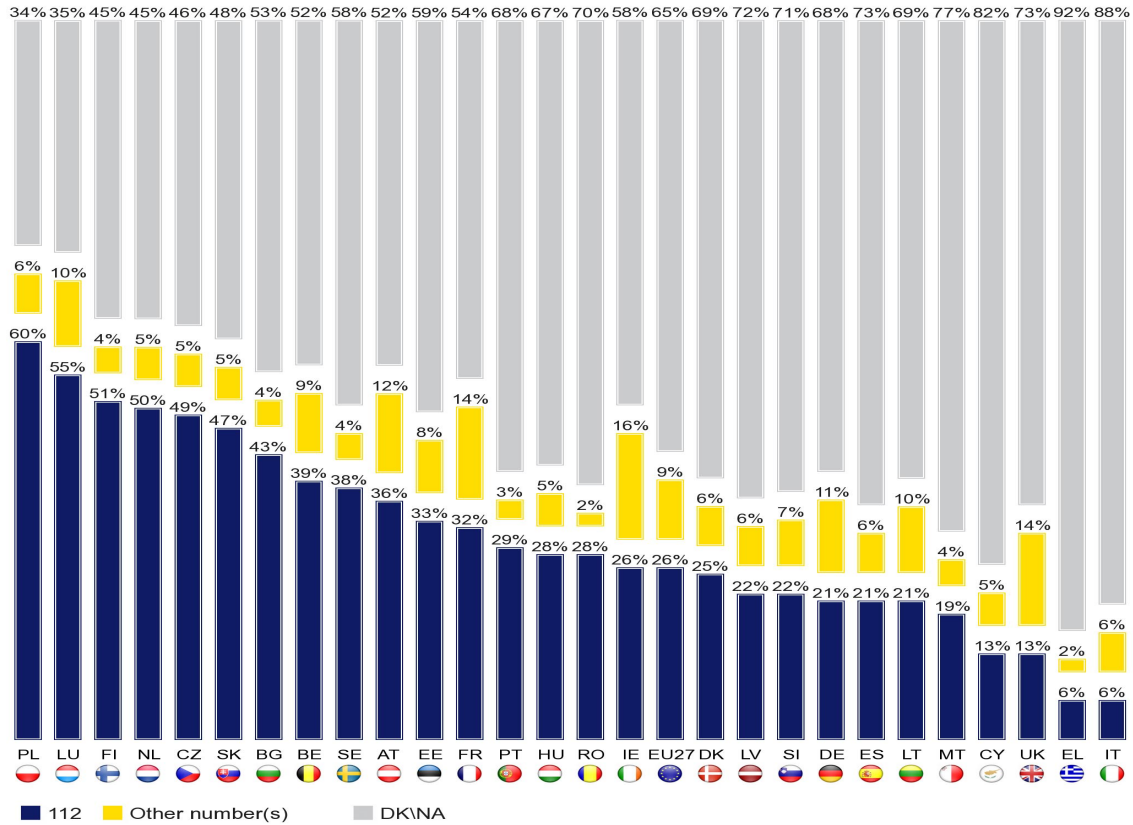
7.2 112 – European Emergency number

112 is not the historic national emergency number and Belgians' knowledge of 112 as the EU-wide emergency number amounts to 39%, placing the country in the 8th position in the EU.

Awareness of 112 as the EU-wide emergency number:

Can you tell me what telephone number enables you to call emergency services anywhere in the European Union?

(Base: all respondents, % by country)



Source : Eurobarometer 2012

Belgians' knowledge of 112 as the EU-wide emergency number amounts to 39%, placing the country in the 8th position in the EU. More specifically, 31% of the calls to the emergency call-centers 100/112 are made to the European Emergency number 112 and 13% of all calls (101+100+112) are made to the European Emergency number 112. Calls are handled in French, German, English and Dutch. The 112 number is also accessible via fax while the SMS route is being developed. The European emergency number 112 is not available without SIM cards in Belgium. The data relating to unsuccessful calls, call set-up time and response time was not available for Belgium.

7.3 Net neutrality & Quality of service

The Belgian NRA published guidelines on net neutrality in October 2011 at the request of the Federal Parliament.

The Belgian NRA published guidelines on net neutrality in October 2011 at the request of the Federal Parliament. The text advocates a moderate approach. The Belgian regulator deemed

that an approach based on transparency, as provided in the revised EU regulatory framework, and a safeguard mechanism preventing services degradation, as well as traffic lagging, would be sufficient for the time being.

7.4 Consumer complaints, tariff transparency

The Telecom Mediation Service reports an increase in the complaints which concern mainly international roaming, cancellation of contract charges, charges for received SMS in value added services, high mobile internet prices and billing and which, according to it, could be solved at the operators' level. The Belgian regulator has started a proactive monitoring programme aiming at checking the conformity of provisions in contracts with consumer protection rules.

The Telecom Mediation Service reports an increase in the complaints, since 25 836 complaints were registered in 2010, in comparison with 23 964 in 2009. Complaints appear to concern the various operators very unequally. It is also reported that an important part of the issues reaching the Telecom Mediation Service could be solved at the operators' level. Issues such as international roaming, cancellation of contract charges, charges for received SMS in value added services, high mobile internet prices and billing are recurrent.

The Belgian regulator started in 2011 a proactive monitoring programme aiming at checking the conformity of provisions in contracts with consumer protection rules. In this respect, the Belgian NRA imposed in November a €250 000 fine to one of the operators for failing to notify individually the right to free cancellation on a change of general terms and conditions to the contract.

In June 2010, a fine of €800,000 was imposed on the incumbent for infringing the Electronic Communications Act with regard to the operator's obligation to inform its customers about price increases, and about the right to withdraw, without incurring a penalty, from the contract in such case. In September 2011, the Brussels Court of Appeal upheld this decision, but decreased the fine to €500,000.

The web-based tariff simulator put in place in 2009 was complemented in 2011 with a 4th module focusing on bundled offers and received a new and user friendlier lay-out. The tariff simulator receives around 7000 visits a month.

The Belgian regulator undertook work with the Mediation Service, the operators and consumer organizations in order to prepare “frequently asked questions” (FAQs) on issues interesting the consumers. FAQs on international roaming were published in June 2011.

7.5 Number portability

The average period for both fixed and mobile **number portability** has remained the same as in the previous years (2 days). The number of fixed ported numbers decreased from 212.438 in 2010 to 231.064 transactions in 2011, which represents a decrease of 4%, while mobile portability has increased from 579.122 in 2010 to 579.390 in 2011. A draft proposal for a Royal Decree modernising the framework and transposing the "one-

day porting rule is expected to be passed in 2012.

Number portability rates in 2011 have not increased significantly in Belgium. The number of fixed ported numbers decreased from 212.438 in 2010 to 231.064 transactions in 2011, which represents a decrease of %, while mobile portability has increased from 579.122 in 2010 to 579.390 in 2011. Number portability in Belgium is normally free of charge for the consumer. Donor operators are not allowed to charge for number portability. Recipient operators may charge for the porting service (in mobile number portability the amount that can be charged is set at maximum €15). However, recipient operators do not usually charge for the porting service. Fixed number portability in Belgium is free of charge for the consumer, while mobile number portability is charged €15. While number portability from mobile to mobile is reported to be working very smoothly, numbers ported from fixed to fixed seem more problematic. One of the reasons for this is reported to be the lack of cooperation between operators. The average wholesale price paid between operators for complex, installations (e.g. series of numbers) has remained stable in 2011 with €71. To port single number the wholesale price is 4,69€. The average period for both fixed and mobile number portability has remained the same as in the previous years (2 days). A draft proposal for a Royal Decree modernising the framework and transposing the "one-day porting rule" and the compensation mechanism is expected to be passed in 2012.

7.6 Universal service

Belgium had not yet amended its legislation regarding the calculation of the net cost for the provision of social tariffs, for which it was condemned by the Court of Justice in case C-134/10.

As of the end of 2011, the Belgian regulator reported 381.938 beneficiaries of social tariffs, the most of which are served by the incumbent operator.

In case C-222/08, Commission/Belgium, the Court found on 6 October 2010 that Belgium had failed to fulfil its obligations under Articles 12(1) and 13(1) of the Universal Service Directive. The Court held that Belgian legislation had failed to take into consideration, in the calculation of the net cost of the provision of the social component of Universal Service, the market benefits, including intangible benefits, accruing to the undertakings responsible. The Court held furthermore that, by making a general finding that all undertakings designated for the provision of the Universal Service are in fact subject to an unfair burden on account of that provision, without carrying out a specific assessment both of the net cost which the provision of Universal Service represents for each operator concerned, and of all the characteristics particular to each operator (including the quality of its equipment or its economic and financial situation), Belgium had not ensured a correct assessment of the unfair nature of the burden associated with the provision of Universal Service. In the meantime, the Constitutional Court in January 2011 declared the contested provisions of the Belgian legislation unconstitutional and annulled them. Amendments to the legislation regarding the Universal Service obligations are not in place to date. This has prompted the Commission to send Belgium a letter of formal notice for non-compliance with the Judgement in September 2011.

7.7 ePrivacy

No major issues on e-Privacy were reported.

The ePrivacy Directive as amended by the Citizen's Rights Directive has not been transposed in Belgium. An infringement procedure for non-communication of the transposition of the Directive was launched in 2011.

A reference for a preliminary ruling from the Brussels Court of Appeal lodged in February 2010, case number C-70/10, was ruled by the Court of Justice of the EU. The reference sought a clarification on the question whether the relevant Directives concerning privacy, data protection and intellectual property rights protection allow Member States to authorise a national Court to order an Internet Service Provider (ISP) to filter all electronic communications in order to identify the sharing of electronic files on its network, and subsequently to block the transfer of such files if they infringe a copyright. The Court ruled that an injunction of a national Court imposing upon an ISP the obligation to introduce a system for filtering all electronic communications, in particular peer-to-peer ones, and which applies indiscriminately to all its customers as a preventive measure, exclusively at the ISP's expense and for an unlimited period, in order to spot alleged infringements of copyright, is not compatible with EU law.



EUROPEAN COMMISSION
Information Society and Media Directorate-General
Electronic Communications Policy
Implementation of Regulatory Framework

18 June 2012

BULGARIA

2011

Telecommunication Market and Regulatory Developments

BULGARIA

1. MAIN MARKET & REGULATORY DEVELOPMENTS: BEST PRACTICES AND CHALLENGES

- **DEVELOPMENT OF THE SECTOR**

The trend towards diminution of **revenues** from fixed (telephony, data and internet) and mobile services continued in 2010. However, in contrast to the preceding year, the total **investment** in the electronic communication sector increased at the end of 2010 by more than 44%. (section 3) In 2011, there were 605 players competing in the **broadband market**. The new entrants' market share continued to increase and in January 2012 reached 70% of all fixed broadband lines. The cable operators' market share remains stable with 14% of all active broadband lines. The alternative operators continue to use mainly non-DSL technologies. The take-up of incumbent's whole sale products is very limited. There is no competition in the DSL retail market since the incumbent exclusively offers DSL lines. A big obstacle for the development of infrastructure-based competition on the wholesale broadband market remains the deployment of illegal⁷ aerial cables (section 4).

Whilst the fixed voice market is still dominated by the incumbent (BTC) with a market share by traffic volume of more than 92% in all types of calls at the end of 2010, the trend towards fixed to mobile substitution continued also in 2011. As regards mobile penetration in terms of dedicated data service, Bulgaria is with 3.5% still far behind the EU average of 8.1%. The bundling of fixed and mobile voice as well as triple-play has significantly increased. Despite attempts by the Communications Regulation Commission (CRC) to enforce its decision on regulated Mobile Termination Rates (MTR) for incoming international calls, none of the three mobile operators applies the given rates. (section 5)

In the context of **number portability**, the time needed for porting fixed and mobile numbers is seven working days. (section 7.5)

- **PROGRESS IN BROADBAND DEPLOYMENT AND TAKE-UP**

At the end of 2011, Bulgaria was still far from achieving the DAE target aiming at securing a basic broadband connection (in the order of 2 Mbps) for all EU households by 2013. Despite

⁷ With respect to the Law on Electronic Communications (LEC)

some minor increase, the fixed broadband penetration remains the second lowest in the EU. The divide between cable-enabled cities and uncovered rural areas remains particularly strong also in this year. At the same time, Bulgaria continued to be amongst the advanced Member States in the area of very high speed broadband with more than 20% of lines being at least 30Mbps. The investments of fixed alternative broadband operators in the deployment of infrastructure showed remarkable growth as compared to the preceding year. (section 4)

- **INDEPENDENCE AND EFFECTIVENESS OF THE NRA**

Overall, the independence of the National Regulatory Authority (NRA) seems to be ensured. However, there is no explicit legal provision concerning the prohibition of seeking and taking instructions from any other body as provided for in the revised Framework Directive. (section 2)

- **IMPLEMENTATION OF THE FRAMEWORK**

In January 2012, Bulgaria notified the full transposition of the revised EU telecom framework which was due by 25 May 2011. The Commission accordingly closed the infringement procedure for non-communication. In September 2011, the Commission closed an infringement procedure against Bulgaria concerning the fixed number portability. At the end of 2011 there was one pending infringement procedure against Bulgaria for failing to comply with the legal requirements laid down in the EU legal framework as regards the allocation of the digital dividend.

- **SPECTRUM MANAGEMENT**

Bulgaria has not yet implemented Commission Decision 2008/477/EC on the harmonized use of the 2.5-2.69 GHz band the prolongation of which from a previous derogation expired at the end of 2011. In 2011, the national regulator granted 3 licenses within the 1800 MHz band. (section 6)

- **CITIZENS AND CONSUMER PROTECTION**

In December 2011, the CRC extended by one year the assignment of the harmonized number 116 000. The number 116 111 is operational in Bulgaria since November 2009. (SECTION 7.1) Although the emergency number 112 has been operational in Bulgaria for many years, the level of awareness of 112 as the European emergency number is rather low. (section 7.2) With regard to consumer complaints, a large proportion of complaints was based on problems related to the change of the major mobile operator's billing system (Mobiltel) (section 7.4).

The process of launching a designation procedure for a universal service provider has further been delayed due to the recent LEC amendments and the forthcoming amendments of the implementing secondary legislation. For the same reason, a decision by the CRC regarding the compensation of the current designated universal service provider (BTC) for the years 2009 and 2010 is still pending. (section 7.6) No major issues on e-Privacy and Net neutrality were reported.(section 7.7)

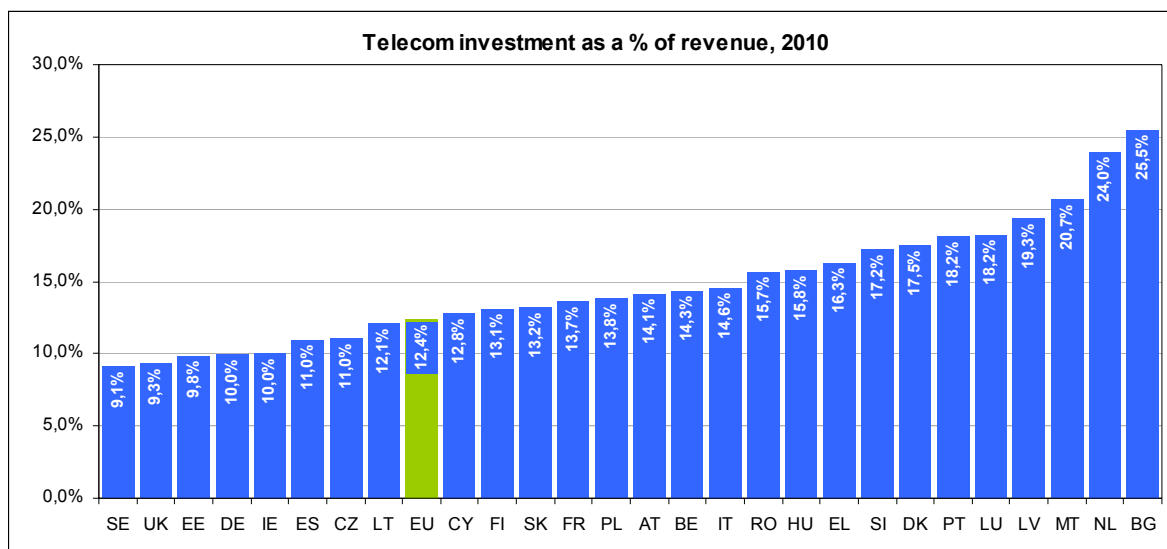
2. NATIONAL REGULATORY AUTHORITY

Overall, the independence of the National Regulatory Authority seems to be ensured. However, there is no explicit legal provision concerning the prohibition of seeking and taking instructions from any other body as provided for in the revised Framework Directive.

The NRA is an independent state body with legal personality. The functional and structural separation of the CRC is ensured by the Law on Electronic Communications (LEC). The recent amendments to the LEC do not foresee an explicit provision concerning the prohibition of seeking and taking instructions from any other body as provided for in the revised Framework Directive. The national regulator has a separate annual budget and the right to make once a year a proposal to the council of ministers for amendments regarding the administrative charges. In 2011, the national regulator introduced an electronic information system which is expected to facilitate the access of citizens and undertakings to the administrative services of the authority. The decisions of the NRA are subject to an appeal before the Supreme Administrative Court. Every person who has a legitimate interest can appeal a decision. The average duration of a court procedure is between one and one and a half years.

3. REVENUES AND INVESTMENTS

The trend towards diminution of revenues from fixed (telephony, data and internet) and mobile services continued in 2010. However, in contrast to the preceding year, the total investment in the electronic communication sector increased at the end of 2010 by more than 44%.



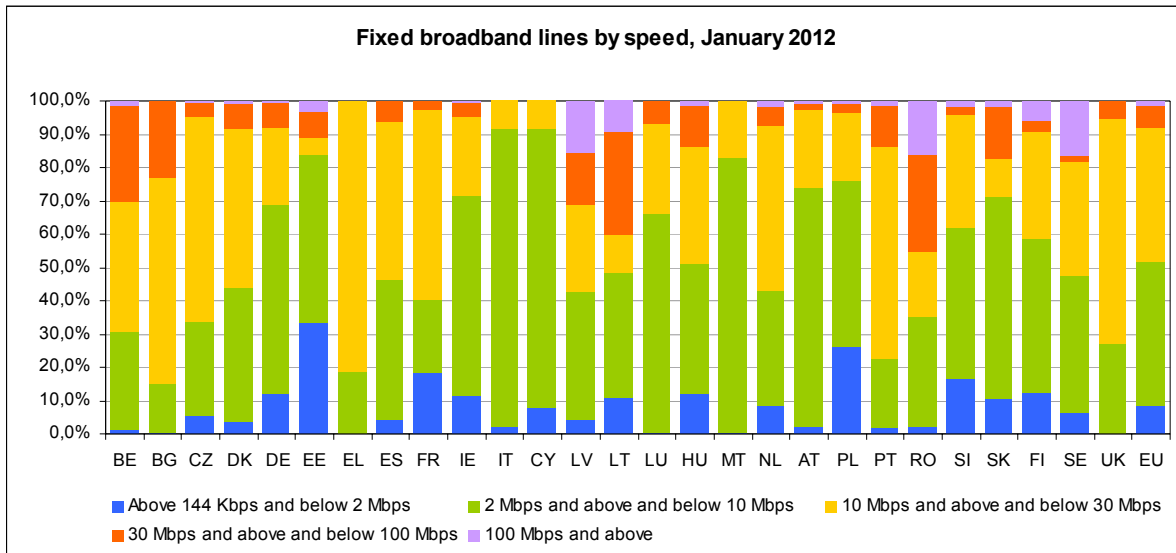
Source : Commission services

The total turnover of the Bulgarian telecommunications sector amounted to € 1.607 million at the end of 2010, a decline of 5.5% on the previous year. Fixed sector revenue was €353 million (€414 million in 2009), and mobile sector revenue was €1.038 million (€1.097 million in 2009). The total value of investment by fixed telecommunications operators (including the incumbent) was €240 million (compared to €93 million one year earlier) and €149 million by mobile operators.

4. BROADBAND

At the end of 2011, Bulgaria was still far from achieving the DAE target aiming at securing a basic broadband connection (in the order of 2 Mbps) for all EU households by 2013. Despite some minor increase, the fixed broadband penetration remains the second lowest in the EU. The divide between cable-enabled cities and uncovered rural areas remains particularly strong also in this year. At the same time, Bulgaria continued to be amongst the advanced Member States in the area of very high speed broadband with more than 20% of lines being at least 30Mbps. The investments of fixed alternative broadband operators in the deployment of infrastructure showed remarkable growth as compared to the preceding year. In 2011, there were 605 players competing in the broadband market. The new entrants' market share continued to increase and in January 2012 reached 70% of all fixed broadband lines. The cable operators' market share remains stable with 14% of all active broadband lines. The alternative operators continue to use mainly non-DSL technologies. The take-up of incumbent's whole sale products is very limited. There is no competition in the DSL retail market since the incumbent exclusively offers DSL lines. A big obstacle for the development of infrastructure-based competition on the wholesale broadband market remains the deployment of illegal aerial cables.

Source: Communications Committee

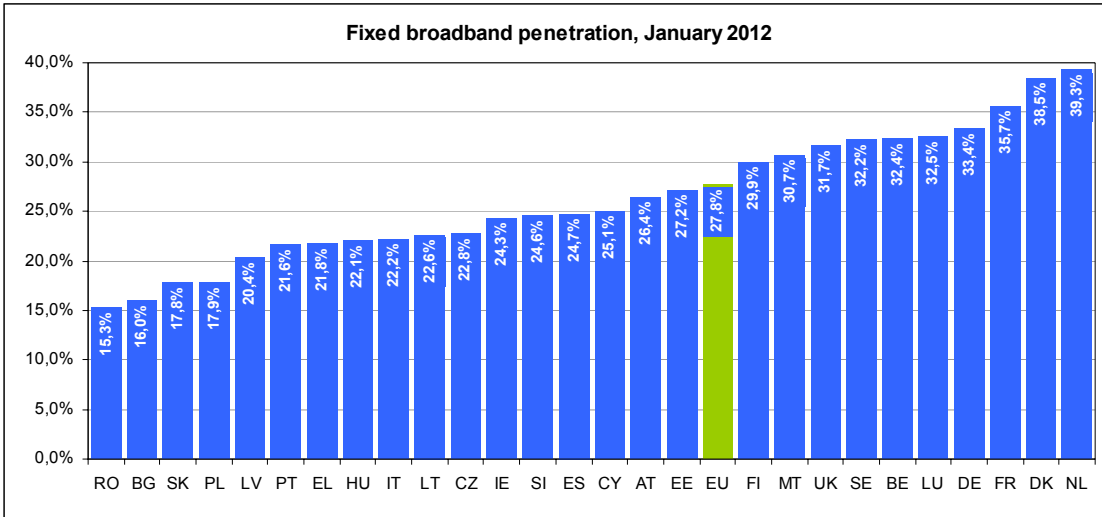


Source: Communications Committee

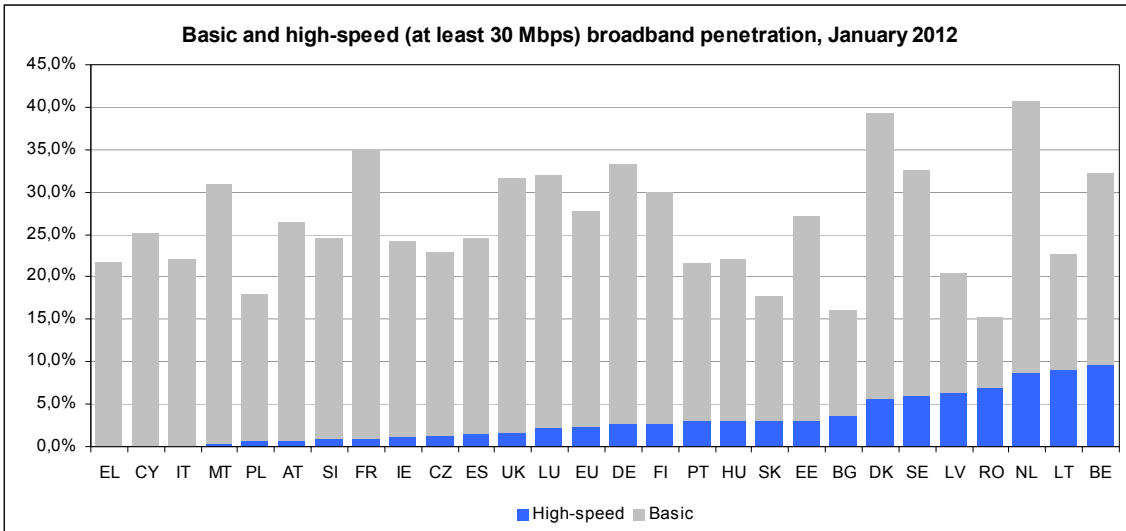
4.1 MARKET SITUATION & REGULATORY DEVELOPMENTS

The fixed broadband penetration rate in terms of population reached 16% in January 2012 (compared to 14.9% one year before) which remains far below the EU average of 27.7% (compared to 26.4% one year before). The total number of retail fixed broadband lines increased in January 2012 to 1 201 809 from 1 125 590 one year earlier. The incumbent holds only 30% of all fixed broadband lines. The broadband market remained fragmented, with 605 operators.

There is virtually no competition in the DSL retail market since exclusively the incumbent offers DSL lines in the Bulgarian telecommunication market. The share of DSL (in all active broadband lines) was 30% in January 2012 (30.6% in January 2010). The incumbent's retail DSL lines increased to 360 323 in January 2012. As of January 2012, the NGA lines reached 33% of the total number of broadband lines.

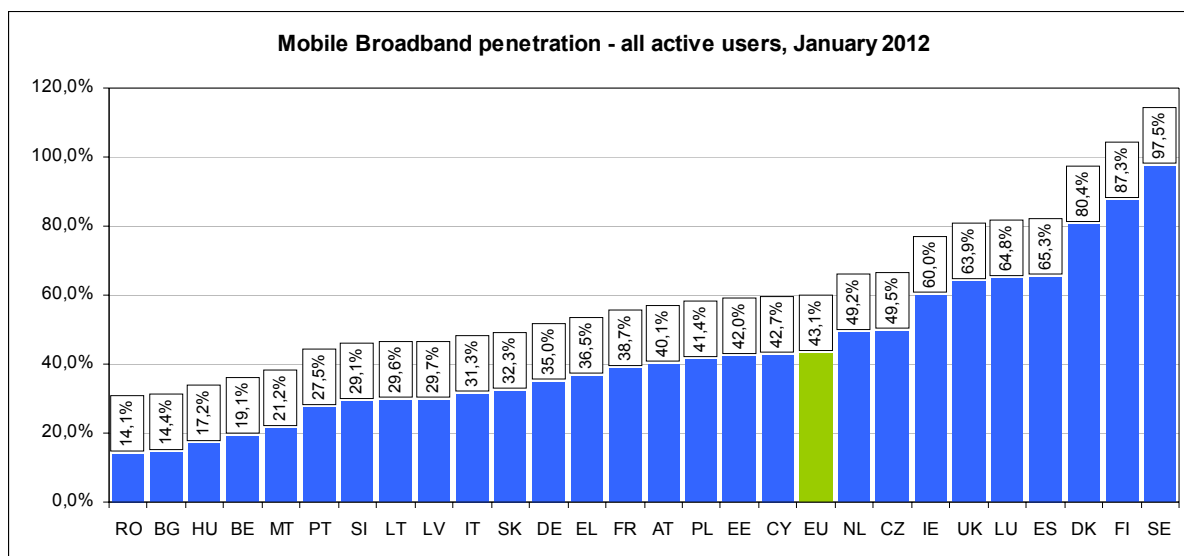


Source: Communications Committee



Source: Communications Committee

In January 2012, about 85.5% of all fixed broadband lines operated at download speeds exceeding 10Mbps and about 22.8% of all broadband lines had download speeds above 30Mbps. Cable operators are often the major broadband provider in rural regions. Their market share remained stable with 14% of all active broadband lines. The continuing lack of commercial interest for the incumbent's DSL-based wholesale access products (unbundled or bitstream) deprives this segment of competition. In January 2012, only six undertakings had an agreement for bitstream access with the incumbent.



Source: Communications Committee

The mobile broadband penetration rate was 14.4% in January 2012 (the EU average was 43.1%). The share of mobile broadband subscribers using a dedicated data service device (card, key and modem only) reached 265 000. In comparison to the EU average of 8.1% on mobile penetration as regards dedicated data services, Bulgaria is far behind with 3.5%. In 2011, three out of four WiMax (4G) operators left the market and currently only one is active with competitive offers, including bundles.

As far as the market regulation is concerned, the CRC, following a notification in December 2010, adopted in February 2011 a decision regarding the analysis of the market for wholesale (physical) network infrastructure access and the market of wholesale broadband access under the EU regulatory framework. The relevant markets were defined as susceptible to *ex ante* regulation. The obligation was imposed on the incumbent to provide access to and use of certain network elements and associated infrastructure including full and shared access to the loop and sub-loop. The incumbent was required to apply cost-oriented tariffs, according to a BULRIC- model that is expected to be developed at the end of April 2012. For the transitional period, the incumbent has to apply the current cost-oriented system. The Commission invited CRC to extend the scope of the cost-orientation remedy to dark fibre infrastructure and to all items allowing local loop and sub-loop unbundling, thus aligning CRC's regulation with the NGA Recommendation. Furthermore, the Commission asked CRC to closely monitor developments on broadband markets, in particular the degree of consolidation, as a result of market exits or mergers, and the implementation of the Bulgarian legislation with respect to aerial cable. Should the market consolidate in the timeframe of the market review and strong alternative operators emerge on the national market or in some clearly identifiable geographic areas characterized by inter-platform competition, CRC is invited to review its analysis even before the end of the current review period.

According to the CRC, the interests of the alternative operators are mainly towards the use of the incumbents' passive infrastructure (ducts). In this context, many of the alternative

operators continued to complain about the incumbent's slow and complex procedure regarding infrastructure access.

The retail broadband competition based on alternative technological platforms, especially LANs and cable-TV networks, is very fragmented. A big obstacle for the development of the infrastructure-based competition on the wholesale broadband market remains the deployment of illegal aerial cables by operators using the LANs technology platform. The persistent wide-spread existence of illegally deployed cables does not only handicap the development of a level-playing field but also facilitate illegal content distribution. With the recent amendments to the LEC, the control over the legal requirements regarding the deployment of aerial cables and imposition of penalties shall be carried out only by the Directorate for National Constructing Control (DNCC). As a result, the national regulator lost its competence to control and impose penalties in this context. The amendment aimed at eliminating the overlapping of competences of both authorities, which had been the case before.

Another serious obstacle for the broadband deployment are the complex procedures for issuing construction permits and the fragmented national legal framework in the area of rights of way. Alternative operators complained about significant delays in the administrative procedure. Although in the course of the transposition of the revised EU regulatory framework, the competent authority is obliged to take a decision within six months, the future implementation of the provision remains questionable.

As regards co-location and sharing of network and facilities, Bulgaria transposed the relevant provision of the amended Framework Directive by empowering CRC to impose symmetrical obligations as regards facilities sharing in order to pursue public policy objectives such as town and country planning without, however, making reference to the principle of proportionality. A new provision in the LEC entitles undertakings providing electronic communications to use for their purposes the existing infrastructure for distribution of electricity, gas and water and the drainage systems. In this context alternative operators complained about unreasonable high prices charged by the power suppliers and lack of state intervention in this regard.

4.2 NATIONAL PLANS, PRIVATE & PUBLIC INVESTMENTS

In February 2012, the Ministry of Transport, Information Technology and Communication elaborated an updated draft of the National Broadband Strategy and of an Implementation Plan. The adoption of both drafts is expected in April 2012.

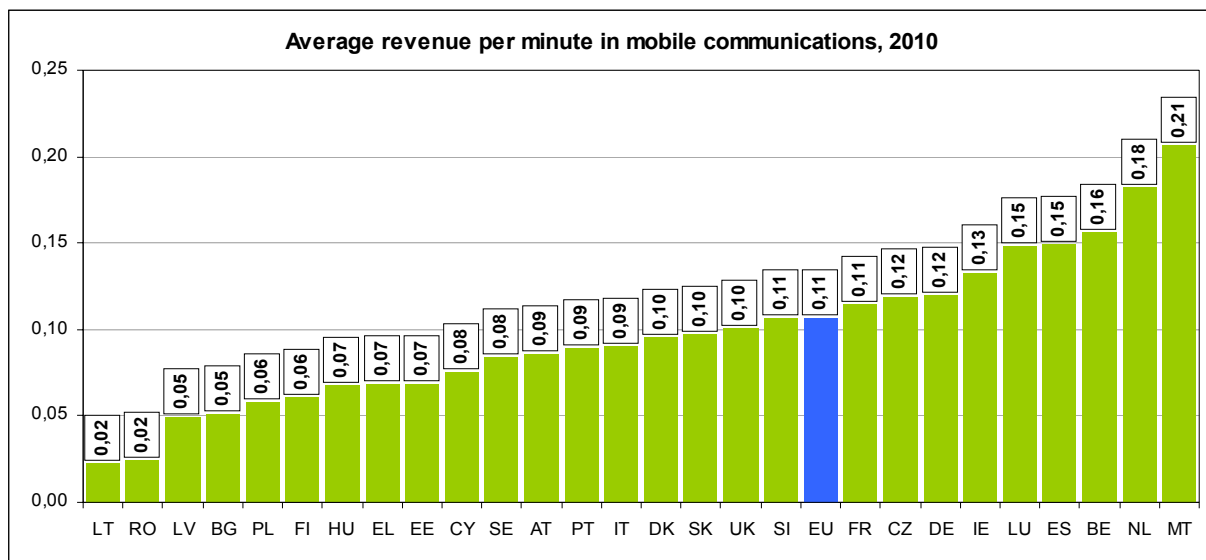
Some progress was made on a governmental project for the development and operation of a broadband access network in less urbanised and rural areas

5. VOICE AND OTHER E-COMMUNICATION SERVICES

Whilst the fixed voice market is still dominated by the incumbent (BTC) with a market share by traffic volume of more than 92% in all types of calls at the end of 2010, the trend towards fixed to mobile substitution continued also in 2011. As regards mobile penetration in terms of dedicated data service, Bulgaria is with 3.5% still far behind the EU average of 8.1%. The bundling of fixed and mobile voice as well as triple-play has significantly increased. Despite attempts by the Communications Regulation Commission (CRC) to enforce its decision on regulated Mobile Termination Rates (MTR) for incoming international calls, none of the three mobile operators applies the given rates.

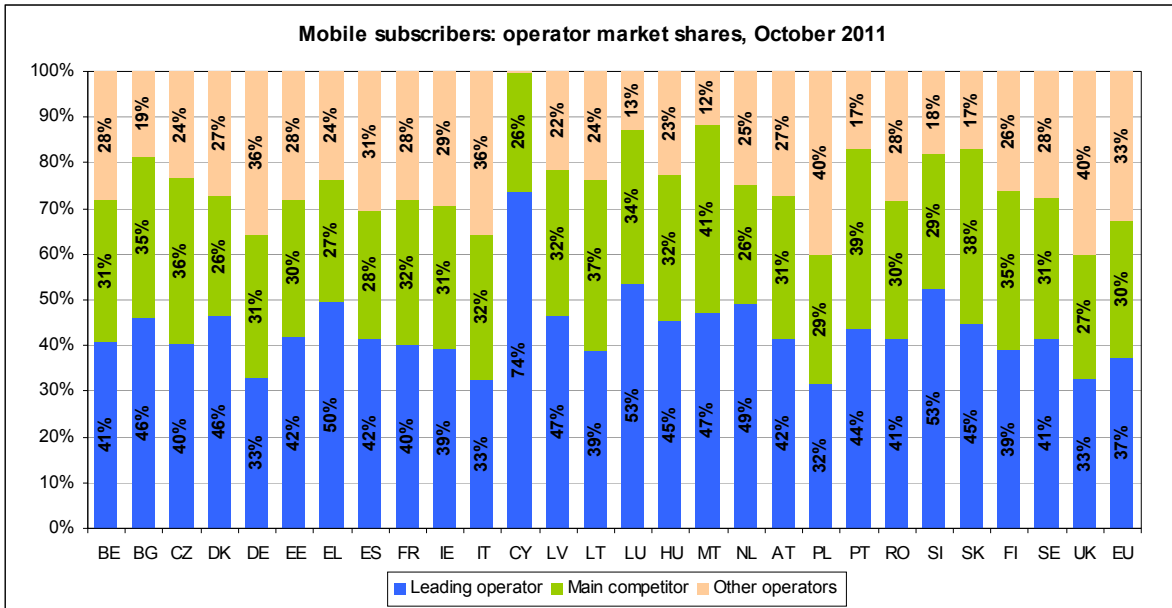
5.1 MOBILE SERVICES

The mobile penetration rate in October 2011 increased to 144.8% (from 134.4% in October 2010). The proportion of post-paid mobile users increased to 68%. The number of pre-paid mobile subscribers declined to 32% from 35% in 2010. For 2010, mobile services accounted for 65% of all revenues and 36% of total investment in the e-communications sector. The average revenue per user for the same year dropped to €77 (down by 26% compared to one year earlier).



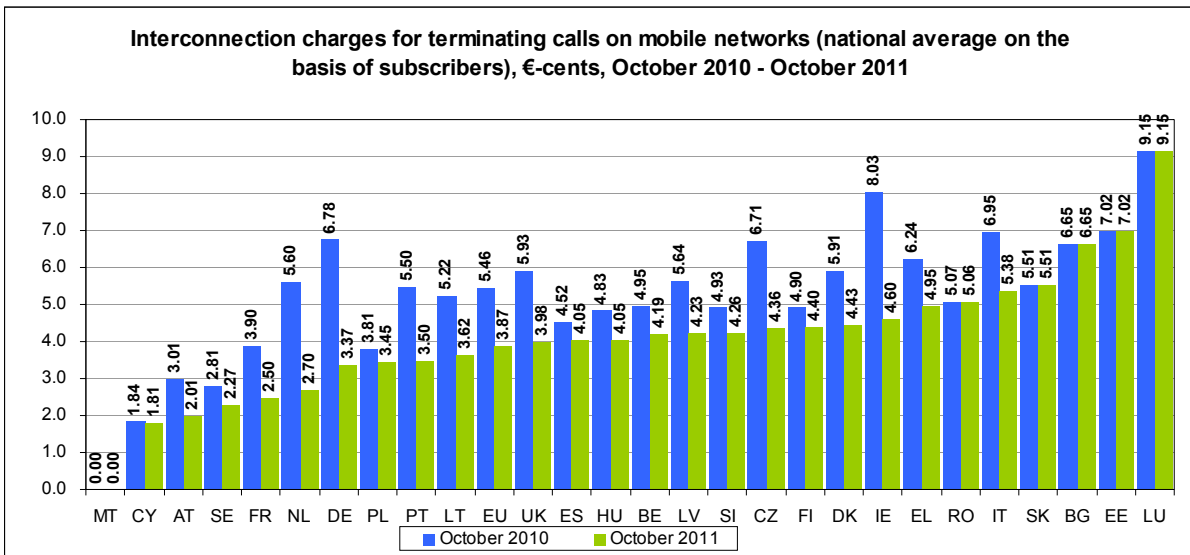
Source: Commission services

The market share of the major mobile network operator in terms of the number of subscribers decreased in October 2011 to 46% (from 52% in October 2010). Over the same period, the main competitor's market share increased from 33% to 35% whilst the third operator strengthened its market share from 15% to 19%.



Source : Commission services

As a result of a discussion between the Commission services and the CRC, the CRC has finally adopted a temporary decision in March 2011⁸ that required all three Bulgarian mobile network operators to apply regulated MTRs to incoming international calls. This measure is applicable as from 1 April 2011 and remains applicable until a new regulatory decision based on the forthcoming market analysis on the mobile call termination market has been adopted. Despite imposed financial penalties by the regulator for non-implementation of the decision, the three mobile operators continue not applying the regulatory measure. The Commission services are looking into the matter.



Source: Commission services

⁸ Decision No. 320 of 24 March 2011

Since July 2010 when the last steep of a glide path adopted by the CRC in March 2009 (likewise for fixed termination rates) entered in to force, the MTRs levels remain at 6.65 €-cents per minute for peak traffic and 5.64 €-cents per minute for off-peak traffic. In October 2011, peak traffic MTR levels exceeded the EU average by 71%.

Following the Commission Recommendation on the regulatory treatment of mobile and fixed termination rates in the EU, CRC authorized an undertaking to elaborate the BULRIC mobile and fixed models which should be applicable as of 1 July 2013.

All mobile operators have implemented consumption limits as of 1 July 2011 as required by the Regulation and offer the Eurotariff for voice calls and SMS at levels close to the specified price caps. The major mobile operator is offering special roaming tariffs as an alternative to the Eurotariffs for example for people travelling to other Balkan countries. All operators offer combi-packages with defined price for certain amount of minutes or value of data.

5.2 FIXED

The incumbent's market share fell to 93.6% in terms of national calls by traffic volume (down from 95.1% in 2009) and increased to 79.7% (from 71.8%) as regards international calls by traffic volume. Overall, the incumbent's market share fell to 92.7% in terms of all types of calls by traffic volume in 2010 (down from 94.1% one year before).

In July 2011, 24.2% of the subscribers used an alternative provider for direct access to fixed services, which is 67.1% more than one year before. 24.2% of the subscribers used alternative providers for national calls and 24.3% for international calls. In total, 21 undertakings offered fixed telephone services in December 2011 according to information provided by the CRC. The share of fixed voice traffic in the total voice traffic in 2010 dropped to 13.6%, which is a decrease by more than 17% compared to the previous year. Retail revenues from public fixed voice telephony decreased respectively by around 14.7%.

Bundled services offer increased significantly in 2011. At July 2011, the bundled offer penetration increased at 8.5% (by more than 123% compared to one year before). The double play penetration reached 6.7% and the triple play penetration 1.8%. According to the CRC, 81 undertakings placed bundled products in 2010, 72 of them were offering double-play services consisting of TV and internet access.

The analysis of the wholesale market for segments of leased lines is still pending.

5.3 BROADCASTING

With the amendments to the LEC from December 2011, Bulgaria introduced a new deadline for the switch-off of the terrestrial analogue broadcasting, 1 September 2013.

In May 2011, the Commission opened an infringement procedure against Bulgaria for failing to comply with the legal requirements laid down in the EU legal framework as regards the allocation of the digital dividend. As a result, Bulgaria amended some existing provisions in the LEC and introduced new provisions. In particular, Bulgaria removed the restrictions applied to foreign TV and Radio content providers related to the operating of digital terrestrial multiplex services and obliged the CRC to open a contest procedure for a new additional digital terrestrial broadcasting network with national coverage not later than 1 September 2013. Furthermore, Bulgaria committed itself to issue a new national plan for the introduction of digital terrestrial television broadcasting (DVB-T) till the end of March 2012.

The new law furthermore foresees the continuation of a contest procedure for the assignment of local analogue spectrum lots held in 2009 where the CRC withdrew a spectrum lot for the Sofia area without any notice to the participants. According to the new provision, the spectrum lot in question has to be assigned to the undertaking which would have obtained it in 2009 if the spectrum lot had not been withdrawn. In January 2012, the CRC assigned the spectrum lot concerned.

As regards technology, significant growth can be noted for the satellite broadcasting services. In July 2011, the household penetration rate for that platform increased to 15.8% from 10.6% one year before). There is a slight increase to 43.3% for the Cable TV (from 41.5% in 2010).

With the recent amendments to the LEC, Bulgaria introduced a periodic review of must-carry obligations. According to the new provision, the CRC is obliged to examine the existing obligations at least once every five years. The next review is foreseen for 25 May 2013.

Stakeholders complained about a discriminatory treatment of operators of different platforms with regard to the imposition of must-carry obligations. According to the new amendments to the LEC, must-carry-obligations for broadcasting of the national and regional programs of the National Radio and Television free of charge are imposed on the cable and satellite network operators while operators of future DTB networks are obliged to provide these programs on the basis of cost-oriented prices set up in the contracts between the network operators and the

content provider. Furthermore, the Council of Media recently adopted a list with a number of commercial programs having must-carry statute only applicable to the DTB networks.⁹

6. SPECTRUM MANAGEMENT

Bulgaria has not yet implemented Commission Decision 2008/477/EC on the harmonized use of the 2.5-2.69 GHz band the prolongation of which from a previous derogation expired at the end of 2011. In 2011, the national regulator granted 3 licenses within the 1800 MHz band.

Bulgaria recently notified the implementation of Commission Decisions 2011/485/EU (on short-range radars in 24 GHz band) and 2011/251/EU (on 900 and 1800 MHz bands).

Bulgaria has not yet implemented Commission Decision 2008/477/EC on the harmonized use of the 2.5-2.69 GHz. By Commission Decision 2010/194/EU Bulgaria was granted a prolongation of a previous derogation from the above mentioned decision. As a result, Bulgaria has been authorized to postpone the implementation of Decision 2008/477/EC in North Bulgaria until 31 December 2010 and in South Bulgaria until 31 December 2011.

In 2011, the CRC carried out a competitive assessment in accordance with the revised GSM Directive on the existing assignments of the 900 MHz spectrum band with the conclusion that the spectrum has been allocated equally to the three competing mobile operators.

In the context of Commission Decision 2011/251/EU amending Decision 2009/766/EC on the harmonized use of the 900 MHz and 1800 MHz, the frequency licenses of all mobile operators were amended in order to fulfill the refarming requirements for both bands, in particular to allow the use of LTE and WiMAX technologies.

In July 2011, the CRC approved the transfer of individual rights to use radio frequencies to one of the mobile operators.

In November 2011, the regulator announced an auction procedure for the 3424-3466 MHz band.

⁹ See: <http://cem.bg/cat.php?id=119>

In December 2011, the CRC granted one license for 2x5 MHz and two licenses for 2x8 MHz within the 1800 MHz frequency band for the use of GSM, UMTS, LTE and WiMAX technologies.

The Commission will monitor the implementation by Bulgaria of the provisions of the Radio Spectrum Policy Programme (RSPP)¹⁰ which require Member States to carry out the authorization process by 1 January 2013 in order to allow the use of the 800 MHz band for electronic communications services.

7. CONSUMER INTEREST

7.1 116 HARMONISED NUMBERS FOR SERVICES OF SOCIAL VALUE

In December 2011, the CRC extended by one year the assignment of the harmonized number 116 000. The number 116 111 is operational in Bulgaria since November 2009.

In December 2011, the CRC extended by one year the assignment of the harmonized number 116000 to a foundation having the purpose to set up a national hotline for missing children which must become operational by May 2012. The harmonized number 116 111 is a freephone run by the State agency for Child Protection. The helpline service is operational since November 2009.

7.2 112 EUROPEAN EMERGENCY NUMBER

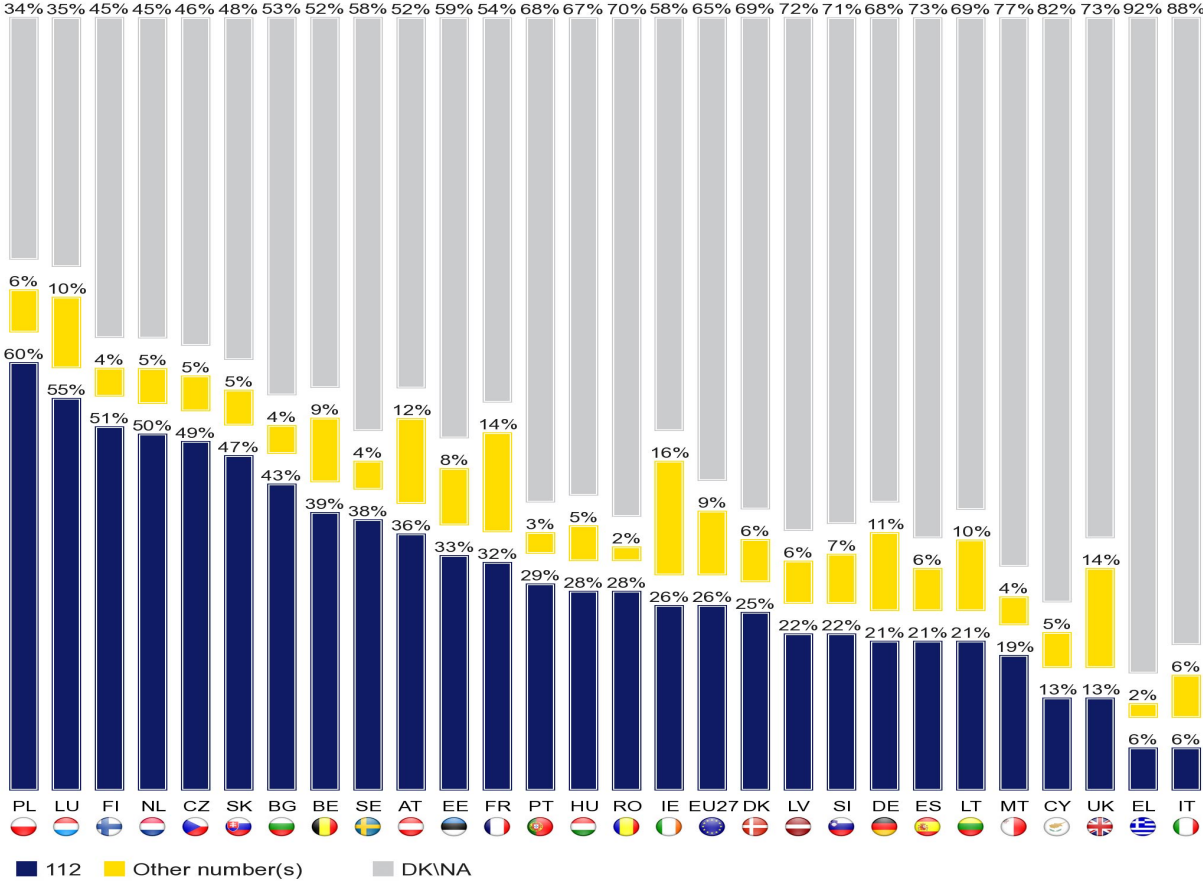
Although the emergency number 112 has been operational in Bulgaria for many years, the level of awareness of 112 as the European emergency number is rather low.

¹⁰ Decision 243/2012/EU of the European Parliament and of the Council of 14 March 2012 establishing a multiannual radio spectrum policy programme

Awareness of 112 as the EU-wide emergency number:

Can you tell me what telephone number enables you to call emergency services anywhere in the European Union?

(Base: all respondents, % by country)



Source : Eurobarometer 2012

112 has been operational in Bulgaria for several years. Whilst 80% of the people know 112 is a number to call in case of emergency in Bulgaria, only 43% are aware that this emergency number can be called in other Member States.¹¹ Since October 2011, all emergency calls to different emergency numbers have been redirected to the 112 operators. Bulgaria has still not adopted special provisions ensuring equivalent access to 112 for disabled users.

7.3 NET NEUTRALITY AND QUALITY OF SERVICE

¹¹ Eurobarometer Flash survey on the European emergency number 112 (February 2012)

Net neutrality was not reported to be an issue in 2011.

Net neutrality was not reported to be an issue in 2011. According to the recent amendments to the LEC, the CRC is empowered to define and impose minimum conditions for the quality of services on the telecom providers.

7.4 CONSUMER COMPLAINTS, TARIFF TRANSPERENCY

A large proportion of complaints was based on problems related to the change of the major mobile operator's billing system (Mobiltel).

Around 4600 complaints have been lodged at the NRA during the reporting year. A large proportion of the complaints are related to delays of invoices caused by the change of the major mobile operator's billing system. Another big proportion of complaints are related to non-availability of detailed invoices or alleged incorrect invoices. Further complaints referred to inadequate service provision, automatic renewal of contracts, problems on number portability and unsolicited calls.

7.5 NUMBER PORTABILITY

In the context of number portability, the time needed for porting fixed and mobile numbers is seven working days

In accordance with the new amendments to the LEC, the porting of numbers shall be carried out within the shortest possible time and the interruption of services should not exceed eight hours. The time needed for portability of fixed and mobile number is seven working days. From January till September 2011, 78 187 mobile numbers and 40 421 fixed numbers have been ported.

7.6 UNIVERSAL SERVICE

The process of launching a designation procedure for a universal service provider has further delay due to the recent LEC amendments and the forthcoming amendments of the

implementing secondary legislation. For the same reason, a decision by the CRC regarding the compensation of the current designated universal service provider (BTC) for the years 2009 and 2010 is still pending.

An act of secondary legislation¹² obliges the CRC to issue a designation procedure for a universal service provider within one month after adoption of the analyses of the retail telephony markets. The recent amendments to the LEC and the secondary legislation as regards Universal Service slow down the process of launching of the designation procedure.

By virtue of LEC, the incumbent is the current universal service provider. In June 2011, the incumbent requested compensation for the net costs of providing universal service in 2010. In October 2011, the CRC opened a tender procedure for the selection of one undertaking which will carry out an examination of the incumbent's system for determination of the net costs and assessment of the net costs for 2009 and 2010. Due to recent amendments to the LEC, the procedure had to be cancelled and a new procedure for independent audit of the incumbent's system - in line with the amended legal provisions has been issued by CRC. This led to a further delay in the compensation procedure.

7.7 EPRIVACY

No major issues on e-Privacy were reported.

The recent amendments to the LEC introduced the data breach notifications requirements under the ePrivacy Directive. The Commission on Personal Data Protection was designated as a competent authority to receive notification from operators about security breaches. According to the relevant transposition provision on the storing of information or gaining of information already stored in the equipment of the user, the recipient should be provided with the opportunity to refuse the storage of or access to information instead of giving its consent as foreseen in the revised ePrivacy Directive. The Commission services are looking into the matter.

¹² Ordinance No. 6 (SG No. 32, 2008)



EUROPEAN COMMISSION
Information Society and Media Directorate-General
Electronic Communications Policy
Implementation of Regulatory Framework

18 June 2012

CYPRUS

2011

Telecommunication Market and Regulatory Developments

CYPRUS

8. MAIN MARKET/COMPETITIVE DEVELOPMENTS

Development of the sector

Although **revenues** in the electronic communications sector reached €580 million in 2010, the level of **investments** remained stable in the mobile market (€32 million) and witnessed a significant reduction in the fixed market (reaching € 42 million in 2010). (*Section 3*)

The incumbent operator (Cyta) still enjoys a very strong position in the **fixed market** (78.5% of all types of call by traffic volume). The national regulatory authority (OCECPR) maintained price regulation in the national retail voice markets. The incumbent's **mobile** arm (Cytamobile-Vodafone) is the most dominant incumbent operator in Europe with a 73.8% market share (losing 3 percentage points in the reporting year), followed by MTN with 25.8%. The reporting year saw the beginning of operations of the first full MVNO (Primetel), hosted on the incumbent's network and expected to increase competition on this market. In the broadcasting market, intermodal competition between digital terrestrial television (DVB-T), cable television and IPTV, is mainly taking place in the domain of content, though there are marked differences in the geographical coverage as well. (*Section 5*)

In the **fixed broadband market**, despite its limited geographical coverage, cable (Cablenet) emerges, with 12% of broadband lines, as the most dynamic competitor of one of the most dominant incumbent operators in the EU (70% of all broadband lines, down from 73.5% a year before), while the main alternative DSL operators which rely on LLU (91.6%) and marginally on bitstream (8.1%) gained only another 1.3 percentage points of the DSL market. Cyprus failed to close the gap with regard to fixed broadband penetration (25.1%) and is still below the EU-27 average in terms of mobile broadband take-up (3.4% for dedicated service cards and 42.7% of all active users). (*Section 4.1*)

While the number of days needed to **port** a fixed or a mobile **number** is steadily decreasing, a considerable reduction was also recorded on the number of fixed transactions (5.8%). The number of mobile transactions substantially increased (16 628 in 2011, compared to 11 623 in 2010). (*Section 7.4*)

Progress in broadband deployment and take-up (*Section 4.2*)

At the end of 2011, Cyprus was close to achieving the DAE target aiming at securing a basic broadband connection (in the order of 2 Mbps) for all EU households by 2013. However, progress in the deployment of high-speed (30 Mbps) and very-high speed broadband (100 Mbps) has so far been negligible, both in terms of coverage and take-up. Cyprus is however addressing broadband with a Digital Strategy, which not only fully endorses the DAE targets for broadband, but is also more ambitious on certain goals, while also integrating take-up targets. The incumbent operator unveiled a first version of its self-financed NGA network deployment strategy, which was not yet finalised at the

end of the reporting period. The analogue switch-off was successfully completed between July and September 2011, paving the way for the granting of the 800 MHz band.

Independence and effectiveness of the NRA

While the OCECPR is perceived as successful in carrying out its mission, the position of the Deputy Commissioner was vacant at the end of the reporting period. A 8.5% reduction of its budget for 2012 was planned by the Government. (*Section 2*)

Implementation of the framework

Although draft laws have been submitted to public consultation during 2011¹³, Cyprus had not yet transposed the revised Regulatory framework by the end of the reporting period. Infringement proceedings were therefore ongoing. Cyprus notified, however, full transposition of the EU 2009 Reform Package on 18 May 2012. The judgement of the Court of Justice on the case of rights of way for the installation of masts and antennae (C-125/09) was still pending¹⁴.

Spectrum management

Although the analogue switch off was completed in 2011, and despite the availability of spectrum in all bands, at the end of the reporting period, the Cypriot authorities had still not set a final date for the assignment of the 800 MHz band to electronic communications services, or for the licensing of another mobile operator. (*Section 6*)

Citizens and consumer protection

While there is no 116 number operating in Cyprus, the necessity of social value numbers appears to be well identified. (*Section 7.1*) Awareness of the European Emergency Number 112 is low. Responsibility for coordination, information and awareness raising on the European Emergency Number 112 has been transferred to the Ministry of Communications and Works. (*Section 7.2*) The incumbent operator was designated in March 2011 as the Universal Service provider, for all elements of the Universal Service, for a period of 3 years. (*Section 7.5*) No major issues regarding consumer complaints or ePrivacy were reported. (*Section 7.7*)

9. NATIONAL REGULATORY AUTHORITIES (NRA)

While the OCEPRR is perceived as successful in carrying out its missions, the position of its Deputy Commissioner was vacant at the end of the reporting period. A 8.5% reduction of its budget for 2012 was planned by the Government.

The Office of the Commissioner for Electronic Communications and Postal Regulation (OCECPR) and the Department of Electronic Communications of the Ministry of Communications and Works (DEC), are perceived as successful in carrying out their

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¹⁴ On 26 April 2012, the Court of Justice of the European Union delivered its judgment confirming that by significantly delaying the granting of rights of way, Cyprus infringed Article 11(1) of the Framework Directive and Article 4(1) of the Authorisation Directive.

respective missions. The two Authorities collaborate closely, as far as the joint authorisation procedure (for the electronic communication networks using frequencies) is concerned, but OCECPR's implication in this area is about to be limited to advice on competition issues in the new law transposing the 2009 EU Reform Package. OCECPR is considered by the market as an independent Regulator.

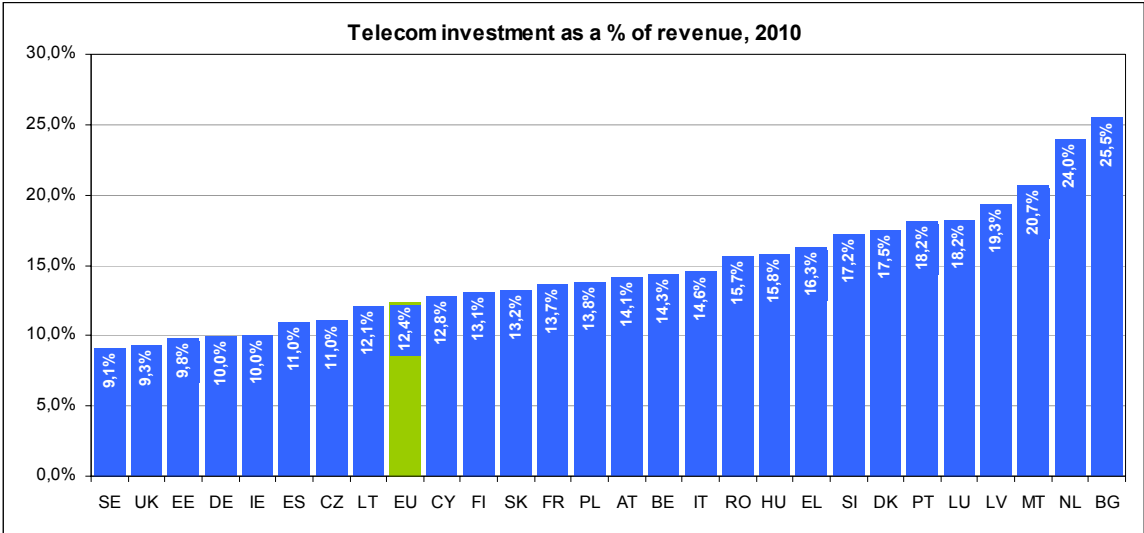
Since 5 October 2011, the position of the OCECPR Deputy Commissioner is vacant. While at the end of the reporting period the Office was still running smoothly, OCECPR's budget will be significantly reduced for 2012, with at least a 8.5% reduction. The Council of Ministers can exercise its right to reduce not only the overall amount of the budget, but also, specific chapters within. Although OCECPR is market financed, its personnel has experienced salary cuts, in line with the general public expenditure cuts.

Though the Regulator has conducted in late 2010 a public consultation on the provisions of the secondary legislation on dispute resolution, providing guidance on its methodology and process, no request for dispute resolution was submitted during the reporting year.

There were six appeals against decisions of the Commissioner during the reporting year. The average duration of appeals is two years. The Supreme Court has notably upheld the decision of the OCECPR on the first round of analysis of the market for wholesale (physical) network infrastructure access at a fixed location.

10. REVENUES AND INVESTMENTS

Although **revenues** in the electronic communications sector reached €580 million in 2010, the level of **investments** remained stable in the mobile market (€32 million) and witnessed a significant reduction in the fixed market (€ 42 million in 2010).



Source: Commission services

The total revenue generated in 2010 by the electronic communications sector increased to €580 million. The fixed sector's revenues amounted to €212 million, while the mobile market's revenue totalled €291 million.

Overall investments in the electronic communications sector were reduced to €74 million. Investments were stable in the mobile sector, however, with €32 million, since the two MNOs are continuing their 3G coverage expansion plans. The investment over revenue ratio in the Cypriot telecom sector for 2010 dropped to 12.8%.

11. BROADBAND

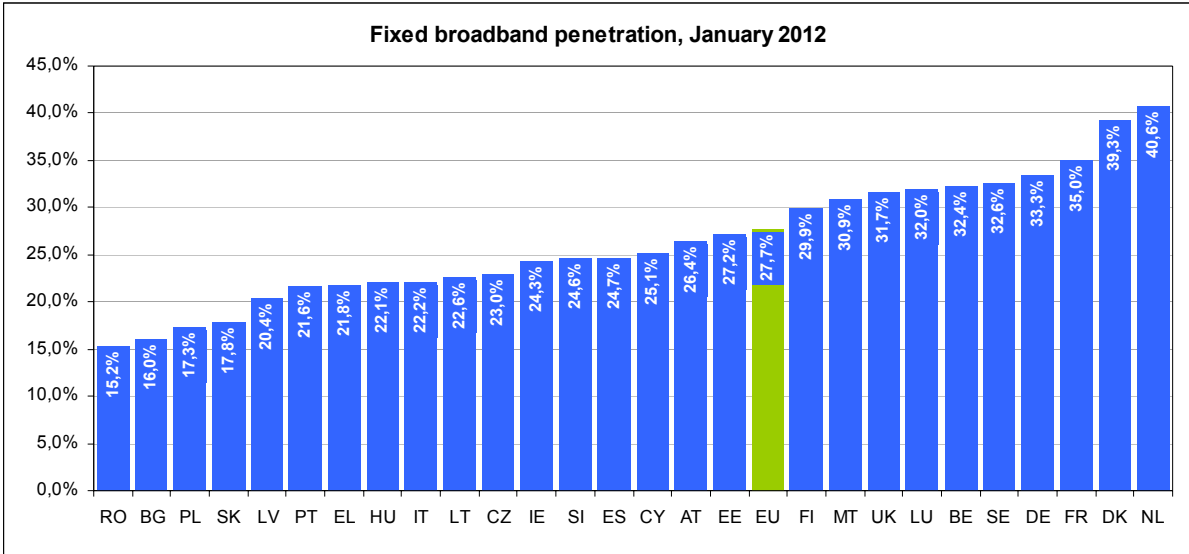
In the **fixed broadband market**, despite its limited geographical coverage, cable (Cablenet) emerges, with 12% of broadband lines, as the most dynamic competitor of one of the most dominant incumbent operators in the EU (70% of all broadband lines, down from 73.5% a year before), while the main alternative DSL operators which rely on LLU (91.6%) and marginally on bitstream (8.1%) gained only another 1.3 percentage points of the DSL market. Cyprus failed to close the gap with regard to fixed broadband penetration (25.1%) and is still below the EU-27 average in terms of mobile broadband take-up (3.4% for dedicated service cards and 42.7% of all active users).

At the end of 2011, Cyprus was close to achieving the DAE target aiming at securing a basic broadband connection (in the order of 2 Mbps) for all EU households by 2013. However, progress in the deployment of high-speed (30 Mbps) and very-high speed broadband (100 Mbps) has so far been negligible, both in terms of coverage and take-up. Cyprus is however addressing broadband with a Digital Strategy for Cyprus, which not only fully endorses the DAE targets for broadband, but also adds specific targets concerning e.g. businesses. The incumbent operator unveiled a first version of its self-financed NGA network deployment strategy, which was not yet finalised at the end of the reporting period.

11.1. Market situation & Regulatory developments

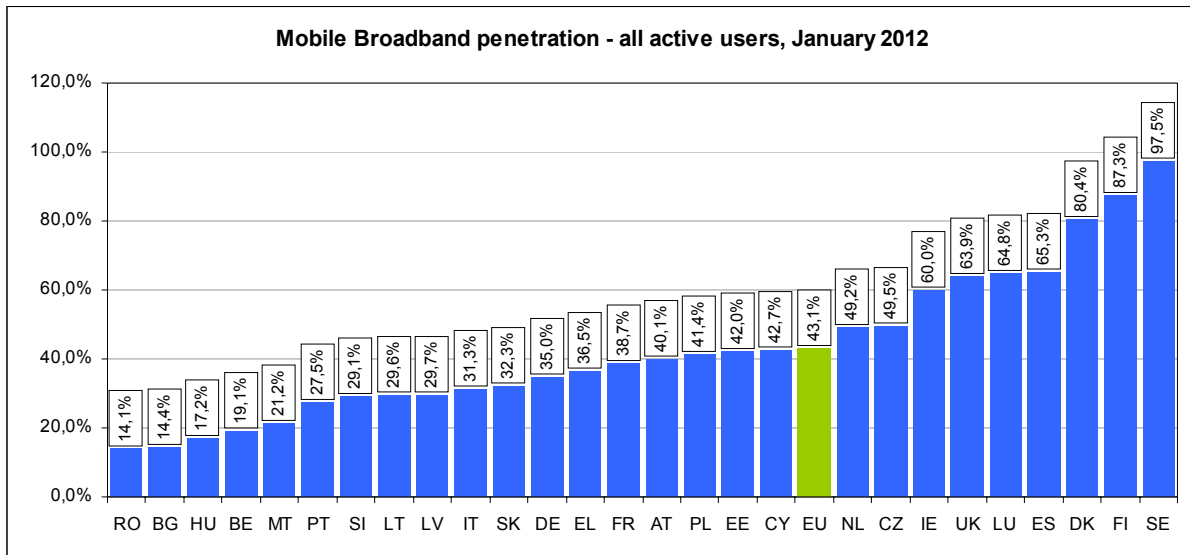
In January 2012, fixed broadband take-up only increased to 25.1% of the population (compared to 24.4% in January 2011), extending its distance from the EU average of 27.7%, since the country progresses slower (0.72%) than the EU average (1.25%). However, when broadband take-up is measured as a percentage of the total number of households, penetration increases, according to data available from the Regulator, to 65%.

Fixed Broadband Penetration Rate, January 2011



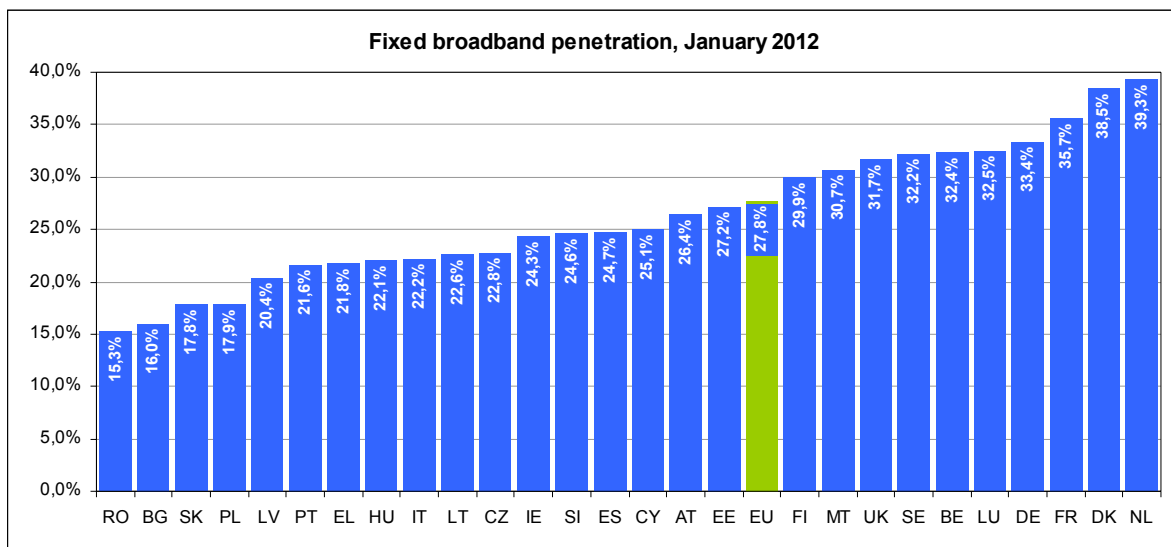
Source: Communications Committee

Mobile broadband begins to capture consumer interest, reaching 3.4% in January 2012, compared to 2% in January 2011 (calculated as the number of dedicated data services via service cards, modems, and USB keys), but is still behind the EU average of 7.9%. All active users taken into account, Cyprus ranks close (42.7%) but still below the EU average (43.1%).

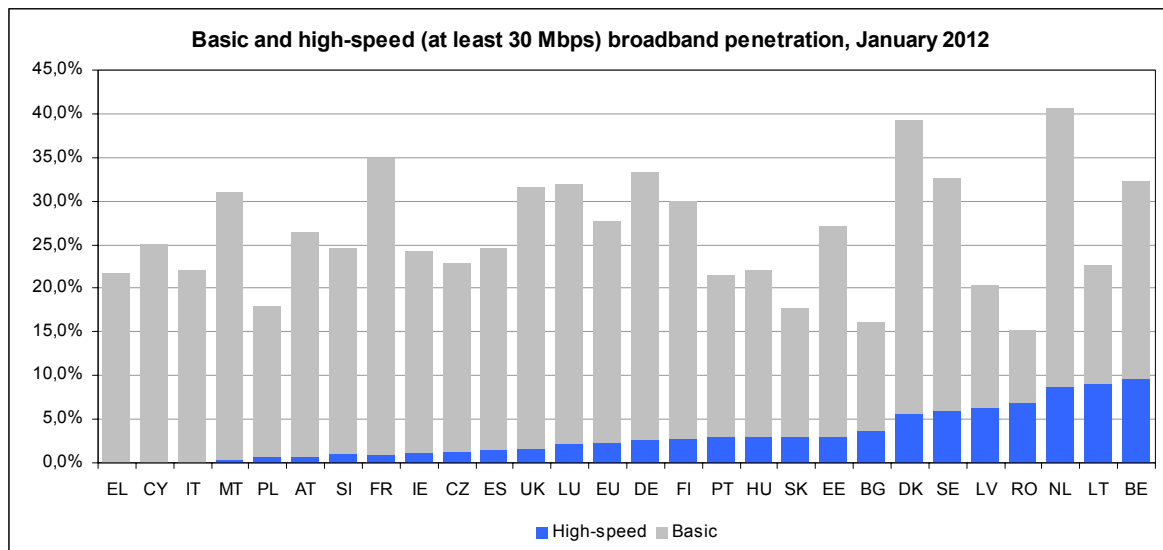


Source: Communications Committee

Fixed broadband coverage is close to 100%, as the incumbent operator extended its DSL coverage to most of the rural areas. Both fixed and mobile NGA networks still have very limited development. The total number of retail broadband lines reached 201 809 in January 2012, of which the incumbent's lines represent 70% (140 976). The xDSL technology is still dominant, albeit decreasing slightly, with 87% of the broadband lines in January 2012, compared to 91% in January 2011 and 94% in January 2010. The dynamics of the cable market is confirmed with broadband lines provided over cable modems now reaching 24 393 lines and representing almost 1/3 of the alternative operator's broadband lines. With 12% of all broadband lines, cable is still behind the EU average of 17%.



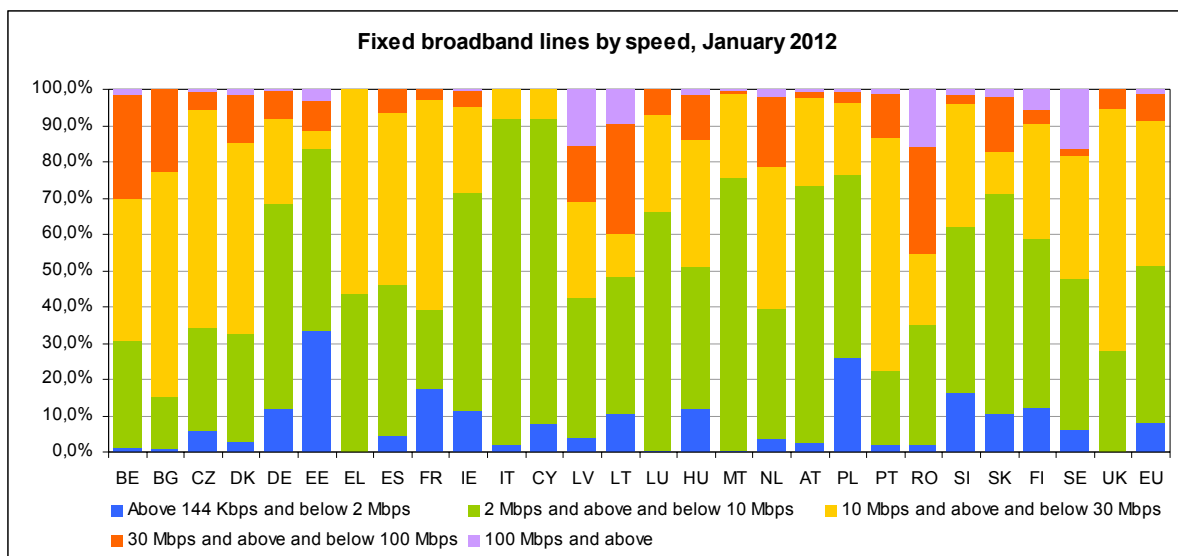
Source: Communications Committee



Source: Communications Committee

The incumbent operator lost a further 4.5% of its market share in the retail broadband market during 2011, but still maintains a very strong presence (70% in January 2012 compared to 74.5% in January 2011). It is the incumbent operator with the third highest market share in the broadband market in the EU. New entrant's share in DSL lines slightly increased from 18.2% in January 2011 only to 20% in January 2012, implying that the incumbent's most dynamic competitor is cable.

In terms of speeds, an important shift occurred during the reporting year, as 83.9% of the broadband lines are now within the speed range of 2 and 10 Mbps. This shift, amounting to an increase of more than 100%, is clearly indicating a speed competition between the DSL operators and the cable network. Increase in the 10 to 30 Mbps ranges was less significant (from 5% to 8.2%). Despite the significant increase in broadband speeds during the reporting year, Cyprus still scores low in high-speed broadband lines (0.04% of lines are above 30 Mbps).



Source: Communications Committee

While OCECPR did not complete the third round review of the market for wholesale physical network infrastructure access at a fixed location, and the market for wholesale broadband access, during the reporting year, it informed the Commission of its intention to notify both markets in the second quarter of 2012. Regulatory remedies from the second round market review on the market for wholesale physical network infrastructure access at a fixed location and the market for wholesale broadband access are producing effects. Electronic submission of applications for local loop unbundling and for bitstream access has streamlined the process, while the obligation to publish Key Performance Indicators has shortened the time necessary for the provision of services. The price for the full unbundling of the local loop decreased to €9.76 (from €11.16 one year before), slightly above the EU average of €9.70. The Regulator is currently updating its Access Network Frequency Plan, in order to fully include the VDSL technology. Regarding the copper phase-out, the Regulator is considering to reduce the migration period, in order to foster fibre take-up.

A new Regulation was issued in January 2012 from the OCECPR, which is amending the existing secondary legislation on rights of way. The Regulation aims to address practical issues which came up in relation to the implementation of the previous decision, and to provide a framework for the deployment of multiple networks in respect of technology neutrality. The Regulator maintains its coordination and mediation role and has the power to resolve disputes arising between the providers.

Alternative providers reported problems regarding the implementation of the costing methodology imposed by the Regulator on the incumbent for collocation in existing ducts. Although the Regulation was upheld by the Supreme Court in its decision of 17 November 2010, the market complains that the incumbent refuses to apply the costing methodology, claiming that it is unenforceable. This situation creates a bottleneck, which makes the deployment of parallel infrastructure in the existing network difficult. The Regulator is looking into this issue with a view to apply the broader competences that the new Regulatory package introduces on this subject as soon as the transposition is completed.

The Cypriot authorities initiated in 2011 a project for the creation of an inventory and mapping of electronic communications facilities and of suitable passive infrastructure, with the aid of a GIS system. The project is still in its early stages. Once the transposition of the 2009 Reform Package is completed, the Regulator envisages issuing secondary legislation regarding in-house wiring, allowing all providers to co-exist inside buildings, while respecting the principle of technology neutrality.

Following complaints from both mobile operators about difficulties incurred with local authorities with regard to antennae and base stations licensing, the DEC, in collaboration with the Ministries of Interior and Health, organized campaigns in order to inform the public and the local authorities of the lack of any danger for the public from authorized antennae and base stations, and developed a webpage publishing the location of all cellular base stations in Cyprus and the relevant electromagnetic radiation measurements undertaken every six months concerning the exposure of the public to these electromagnetic fields. In 2011, the DEC

published an order for the accreditation of undertakings to conduct EMF measurements¹⁵.

11.2. National Plans, private & public investments

On 8 February 2012, the Council of Ministers approved the Digital Strategy for Cyprus. The Strategy fully endorses the DAE targets for broadband, setting additional targets of at least 20Mbps Internet connectivity for 70% of the enterprises by 2013 and at least 100Mbps Internet connectivity for 50% of businesses and households for 2020, and provides for connectivity of Cyprus with high and ultra-high speed networks. Furthermore, it contains measures regarding network and information security, modernisation of the public administration and the provision of public electronic services, digital literacy, promotion of digital entrepreneurship, green ICT and other actions, which are also expected to induce demand for NGA networks. The strategy favours a market based approach for NGA networks funding, without state participation, but allows also the possibility to consider subsidising in-building wiring, if deemed necessary.

The incumbent operator unveiled its NGA network deployment strategy, encompassing the creation of a self-financed FTTH (fibre to the home) network in urban areas using GPON (Gigabit Passive Optical Networking) architecture, and a VDSL based network in rural areas. The current choice of network topology is driven by an estimated 15% to 20% difference in the cost between a P2P (point to point) and GPON architecture, and by the estimated lack of space in the ducts which are close to telephone centres. It will be possible to upgrade the network to P2P, according to demand, and following the copper phase-out, which it would prefer to happen shortly. The finalisation of the incumbent's choice of architecture for FTTH deployment is still pending the completion of financial and implementation studies and an evaluation of the intentions of the Regulatory authority¹⁶. Alternative operators have manifested interest to participate in the project, provided that the incumbent proceeds to a structural separation. The incumbent does not seem however to consider such a solution. Meanwhile, the incumbent is pursuing its VDSL2 deployment.

Although alternative fixed operators have deployed fibre backbone networks, their access networks are still very limited in scope. This is due to the fact that they lack access to finance and subsidies, and because of technical difficulties related to access to buildings and in-building wiring, and also to the high costs for access to ducts. A cable operator is constantly expanding its hybrid fibre coaxial network (DOCSIS 3.0) currently limited to urban areas, whilst benefitting from a collocation agreement with the Electricity Authority of Cyprus.

According to data provided by the Regulator, the leading mobile operator extended its 3,5G network coverage to 85.24% of the population and 57.8% of the territory, which accounts for all urban and suburban areas. The second mobile operator currently covers with 3G 85.32% of the population, and 59.62% of the territory, and is currently updating its network to 3,5G. MNOs are awaiting the re-farming of the 900 MHz band in order to increase their UMTS coverage in rural areas.

¹⁵ In February 2012, the DEC also issued guidelines on the evaluation of the exposition of the public to electromagnetic fields from radio-communications stations which are part of an electronic communications network.

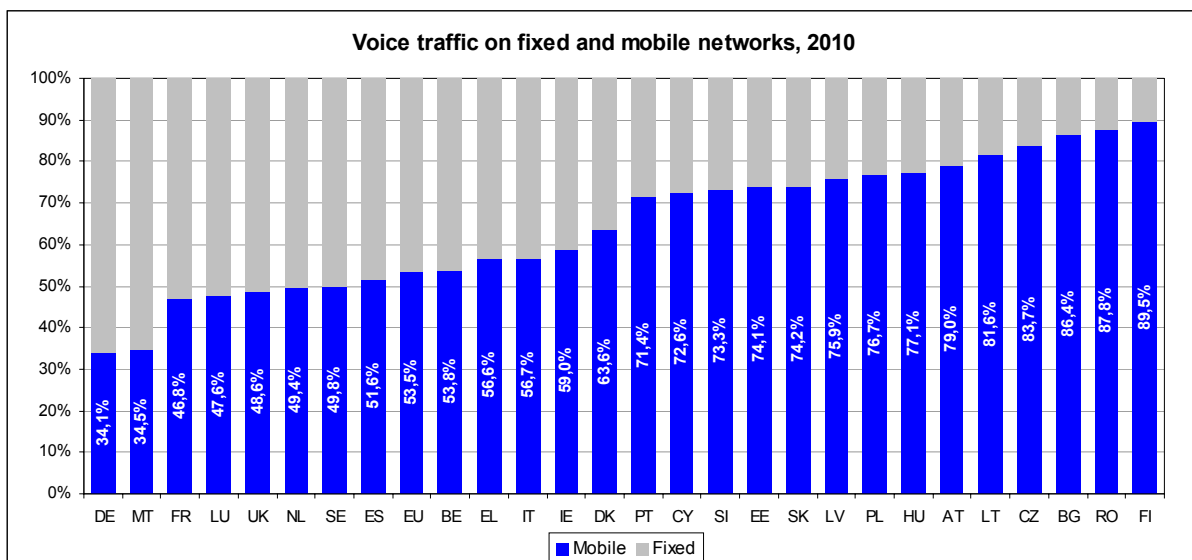
¹⁶ OCECPR launched on 3 April 2012 a public consultation on its Regulatory Strategy towards NGA networks.

12. VOICE AND OTHER ECOMMUNICATION SERVICES

The incumbent operator (Cyta) still enjoys a very strong position in the **fixed market** (78.5% of all types of call by traffic volume). The national regulatory authority (OCECPR) maintained price regulation in the national retail voice markets. The incumbent's **mobile** arm (Cytamobile-Vodafone) is the most dominant incumbent operator in Europe with a 73.8% market share (losing 3 percentage points in the reporting year), followed by MTN with 25.8%. The reporting year saw the beginning of operations of the first full MVNO (Primetel), hosted on the incumbent's network and expected to increase competition on this market. In the broadcasting market, intermodal competition between digital terrestrial television (DVB-T), cable television and IPTV, is mainly taking place in the domain of content, though there are marked differences in the geographical coverage as well.

12.1. Mobile services

Voice traffic on fixed and mobile networks, 2010



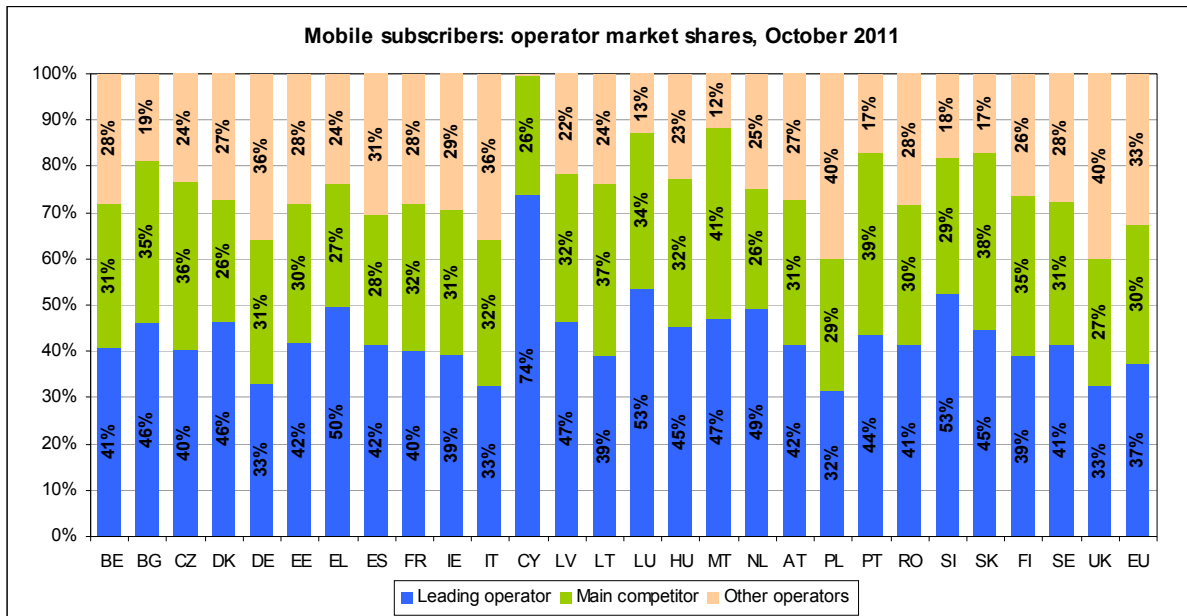
Source: Commission services

Market situation

The mobile sector maintained the lead in terms of revenue generation (€291 million in 2010). The mobile penetration rate (based on the number of active mobile subscribers) in October 2011 was 135.3% (increased by 8.7 percentage points in a year), above the EU average of 127%.

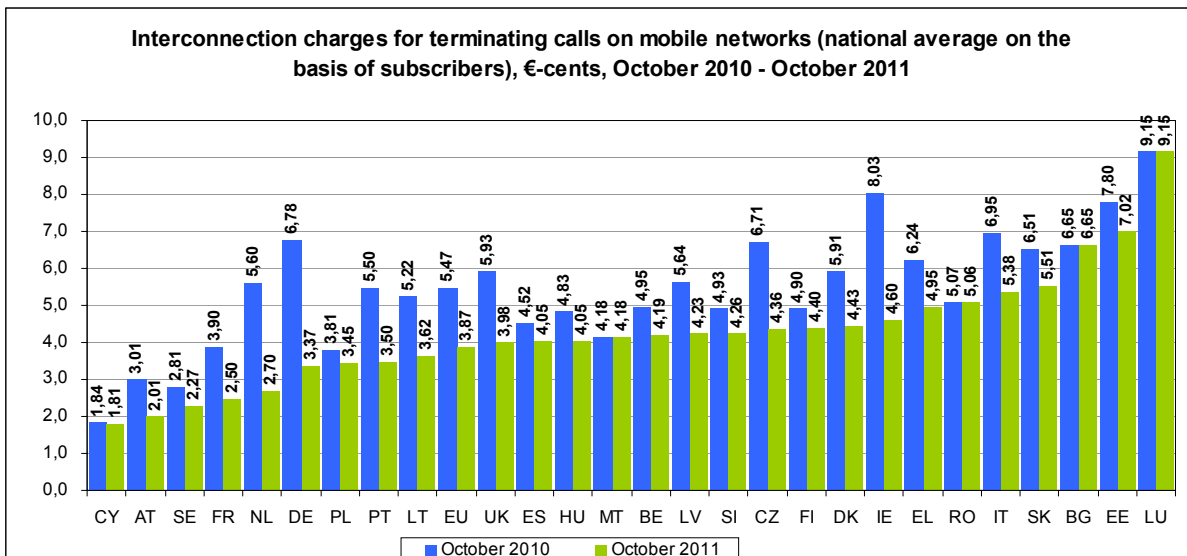
Changes in the market shares of the mobile operators indicate a slow development of competition. The leading operator's (i.e. the incumbent's mobile arm) market share decreased to 73.8% in October 2011, which means a loss of 2.7 percentage points compared to one year before. The second MNO had a market share of 25.8% in October 2011 (23 a year before). Due to its late entry into the market (May 2011), the MVNO had only managed to acquire a 0.4% market share by October 2011. In the beginning of 2012, the MVNO began proposing bundles including mobile (quadruple play).

Operators' market shares at EU level, October 2011



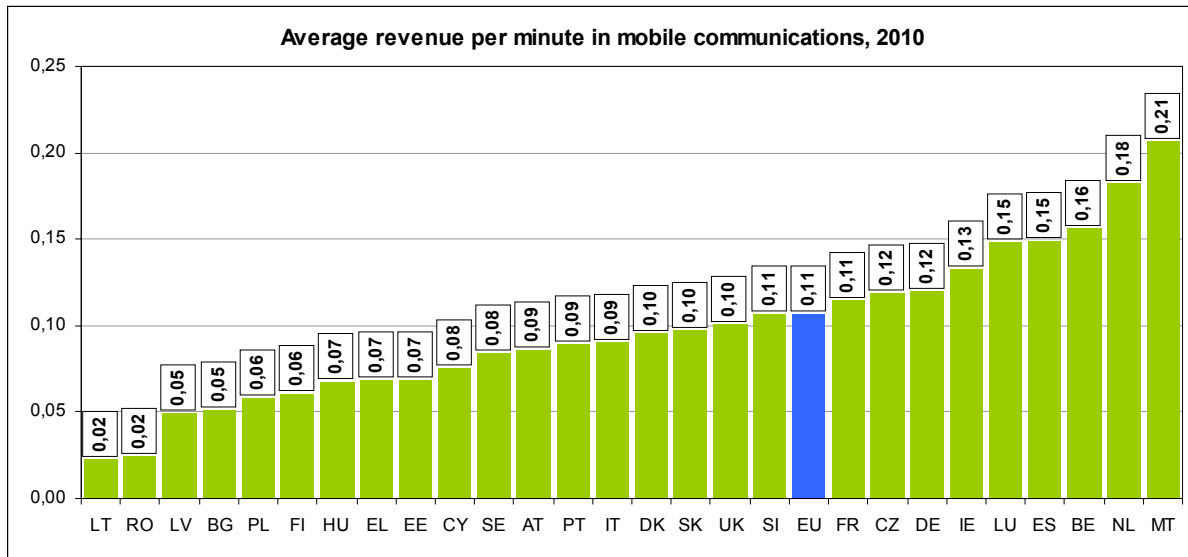
Source: Commission services

Mobile termination rates in Cyprus continue to be the lowest in the EU, and decreased to 1.81 €c in October 2011 from 1.84€c in 2010. In accordance with a three year glide path, the termination rates of the second mobile operator were 25% above the cost-oriented MTRs of the leading operator. This percentage was deemed to decrease to 13% by 1 January 2012.



Source: Commission services

The average revenue per minute for mobile communications rose to €0.08 in 2010, below the EU average of €0.11. The annual average revenue per user decreased to €253 (from €286 one year earlier), but is still above the EU average of €221.



Source: Commission services

Regulatory issues

Following an agreement with the incumbent operator in December 2010, a fixed alternative provider launched MVNO services in May 2011. The agreement was based on the reference offer issued pursuant to regulatory obligations imposed by OCECPR in the market for access and call origination on public mobile telephone networks. However, it seems that a number of wholesale services included in the Reference Offer were not derived according to the Long Run Incremental Cost (LRIC) methodology, thereby causing a margin squeeze in the data and SMS markets. After a public hearing conducted in November 2011, the Regulator proceeded with a modification of the reference offer, and developed a margin squeeze model, based on an equally efficient operator, to establish non-discrimination in wholesale prices.

The two MNOs are complying with the Roaming Regulation. One of the mobile operators makes roaming packages below the Eurotariff available.

12.2. Fixed services

Market situation

Consumers in Cyprus mostly rely on the incumbent for direct access (91% in July 2011). While the incumbent continues to maintain high market shares in this market, which are amongst the highest in the EU, it continues to lose a small market share for all fixed calls (measured by traffic volume), which declined from 80.5% in December 2009 to 78.5% in December 2010. Its market share was 82.1% for all national calls, 84.9% for calls to mobile, and 59.4% for international calls. In October 2011, the costs for call termination at local, single transit and double transit levels were unchanged, compared to October 2010 and were equal to 0.34€c, 0.55€c, and 0.63€c respectively, which all are well below the respective EU averages (0.43, 0.62, 0.84 €c).

Regulatory issues

At the beginning of 2011, the OCECPR completed the second round review of the wholesale markets for call origination on the public telephone network provided at a fixed location, call termination on individual public telephone networks provided at a fixed location and transit

services in the public telephone network provided at a fixed location. In the market for fixed call termination, the Commission invited OCECPR to impose effective access obligations on all network operators and to align its cost accounting methodology with the recommended LRIC model based on the current costs of an efficient operator by the end of 2012. In its final decision, the OCECPR imposed on all operators' obligations to provide access and interconnection, and to allow for collocation and interoperability. Regarding the fixed termination rates, the Commission urged OCECPR to carefully assess the level and duration of asymmetry since, according to its proposal, the asymmetry could go on for an excessively long period. Comments were also made regarding the lack of developments in the market for transit services and the effectiveness of *ex ante* regulation, since price regulation does not provide any incentives for alternative operators to invest in direct interconnection, or to enter effectively on the market for wholesale district transit, or to self-supply their own traffic.

OCECPR also completed its analysis of the retail markets for publicly available local, national, and international telephony services, provided at a fixed location. Though they are no longer warranted for *ex ante* regulation under the 2007 Recommendation, retail price control for national calls was maintained. The Commission, in its comments, urged the Regulator to strengthen its efforts to ensure the full effectiveness of related wholesale remedies, for example through enhanced compliance enforcement, and to establish whether the introduction of naked DSL on the wholesale level has a positive effect on the competitive situation in the retail market for national calls. It also urged the Regulator to re-assess the market for national calls without delay, should competition develop, and to aim for the withdrawal of regulation as soon as the first and/or second criteria are no longer met.

12.3. Broadcasting

Market situation

In the TV broadcasting market, the number of households using Internet protocol television (IPTV) increased to 17.4% in July 2011 compared to 16.7% the previous year. A small decrease of 7.7% was recorded with regard to satellite penetration (amounting to 3.5% in July 2011). This decrease profited the cable television which recorded a record increase, serving 7.2% of the households in July 2011 (4.7% a year before).

Regulatory issues

The digital switch-over was completed smoothly between July and September 2011 in all areas under the effective control of the Republic of Cyprus. 12 UHF channels (6 multiplexers) are being used by the two authorized networks. The state owned network provider was assigned one multiplexer through a negotiation procedure, to broadcast the public television and radio stations with 100% population coverage. The private network's licence (exploiting five multiplexers through an auction procedure) must carry all pre-existing analogue TV stations provided that they had expressed their will to be transmitted by 31 July 2011. The private network must respect a 75% territorial coverage obligation. In September 2011, the OCECPR approved, after modification, the reference offer of the private multiplexer.

The Cypriot authorities have formally requested from ITU the registration in the GE06 plan of another five multiplexers for digital terrestrial television. However, this request has not yet been satisfied, since neighbouring countries objected to Cyprus coordination request and therefore under GE06 these additional multiplexers for the time being cannot be registered.

Content is key for the choice between different platforms. Fierce competition for content between the network providers resulted in complaints to the Competition Authority.

13. SPECTRUM MANAGEMENT

Although the analogue switch off was completed in 2011, and despite the availability of spectrum in all bands, at the end of the reporting period the Cypriot authorities had still not set a final date for the assignment of the 800 MHz band (the digital dividend) to electronic communications services, or for the licensing of another mobile operator.

In April 2011 a call for applications was launched for the granting of rights of use in the 3.4-3.8 GHz and 24.5-26.5 GHz frequency bands through a tender procedure. No network access technology was mandated, thereby leaving a significant scope for the development and provision of different kinds of networks and services. Specifically for the 3.4-3.8GHz bands, the geographical coverage (100% of areas with secondary schools) and quality of service (2Mbps) requirements were set, in order to achieve the DAE targets of 2013. Despite the participation of 3 providers in the public consultation, and two prolongations of the deadline to manifest interest, the auction was cancelled in September 2011, since there was no interested provider. Plans to auction these licences have long been delayed (since 2006), which was a factor that reduced the initial interest of potential bidders in participating in the auction. The reserved price of €850 000, for a spectrum block of 90MHz, for a period of use of fifteen years, was considered by the market too high. This delay inhibited the development of networks of certain access technologies (such as WiMAX) since other kinds of access networks by now are well established in the country (e.g. HSDPA).

Besides the 800 MHz frequency band, which was liberated following the digital switch-over, the 2.6 GHz band is also free and there is available spectrum in all bands. The DEC is considering proceeding with the granting of available rights of use in the 800 MHz, 900 MHz, 1800 MHz and 2.6 GHz bands, along with the re-farming of the 900 MHz and 1800 MHz bands. However, a wide use of the 800 MHz band in the occupied areas for TV broadcasting could hinder the release of the Digital Dividend. In the light of recent developments (Commission Mandate to the CEPT on MCA), the authorization of the 2100 MHz band will be considered at a later stage.

Providers interested in deploying LTE networks have expressed concerns that available spectrum might be assigned only to the incumbent operators. The Commission will monitor the implementation by Cyprus of the provisions of the Radio Spectrum Policy Programme (RSPP)¹⁷ which require Member States to carry out the authorization process by 1 January 2013 in order to allow the use of the 800 MHz band for electronic communications services (Article 6.4) and, subject to market demand, to carry out the authorisation process by 31 December 2012, in order to make the bands covered by Decisions 2008/411/EC (3,4-3,8 GHz), 2008/477/EC (2,5- 2,69 GHz), and 2009/766/EC (900-1 800 MHz) available under terms and conditions described in those decisions (Article 6.2).

The frequency plan was amended twice during the reporting year, in order to implement European Commission Decisions 2010/166/EU on the harmonised conditions of use of radio

¹⁷ Decision 243/2012/EU of the European Parliament and of the Council of 14 March 2012 establishing a multiannual radio spectrum policy programme; <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:081:0007:0017:EN:PDF>

spectrum for mobile communication services on board vessels (MCV services), 2011/251/EU on the harmonisation of the 900 MHz and 1800 MHz bands, and 2011/485/EU on the harmonisation of the 24 GHz range radio spectrum band for time-limited use by automotive short-range radar equipment.

All necessary preparation has been made in Cyprus for the granting of an authorisation to the operators of systems providing mobile satellite services selected by the Commission in accordance with European Parliament and Council Decision No 626/2008/EC. The Department of Electronic Communications has amended the fees for satellite earth stations, mainly in the Ka band, following a public consultation.

14. CONSUMER INTEREST

14.1. 116 - Harmonised numbers for services of social value

While there is no 116 number operating in Cyprus, the necessity of social value numbers appears to be well identified.

According to the latest Eurobarometer, although the Cypriot respondents have a very favourable opinion on the necessity of the 116 social value numbers, 85% of them consider that they are not sufficiently informed. Numbers 116 111 and 116 123 have been assigned to non-profit organisations, but are still not operational. OCECPR is in the final steps of assigning the 116 000 number to a partnership of non-profit organisations.

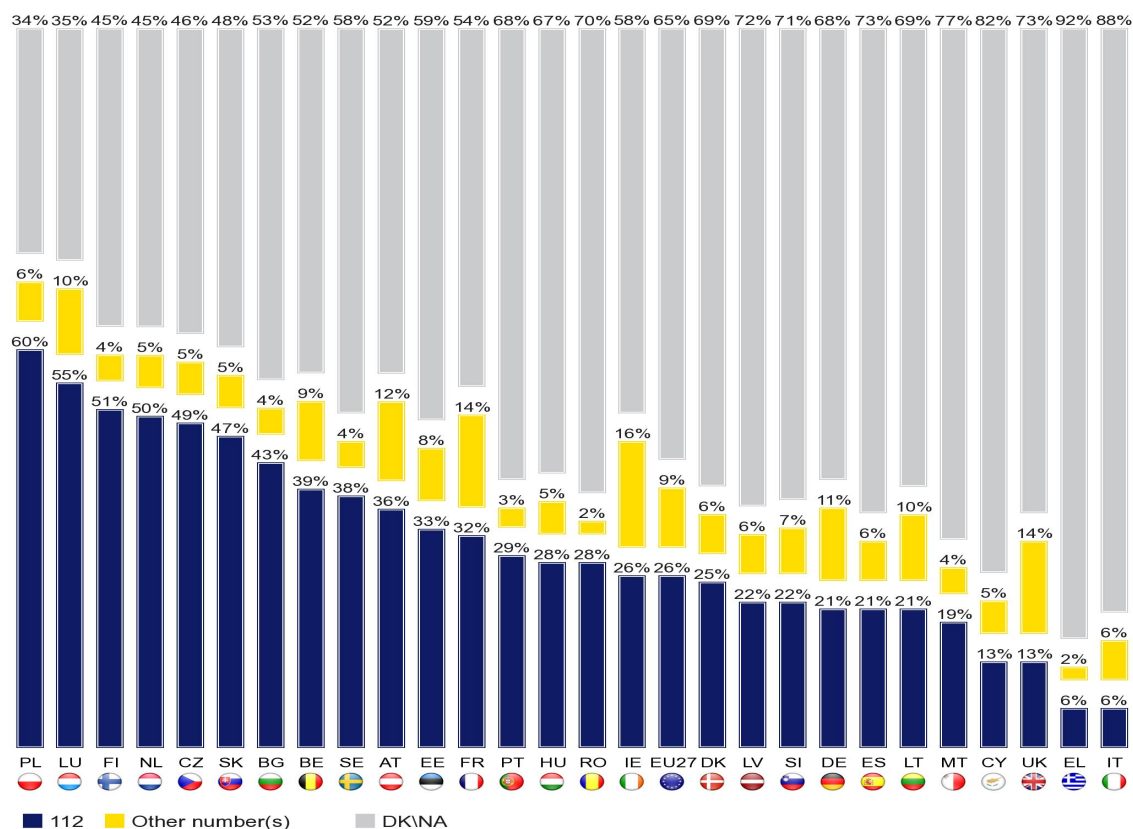
14.2. 112 – European emergency number

Awareness of the European Emergency Number 112 is low. The responsibility for coordination, information and raising awareness on the European Emergency Number 112 has been transferred to the Ministry of Communications and Works.

Awareness of 112 as the EU-wide emergency number:

Can you tell me what telephone number enables you to call emergency services anywhere in the European Union?

(Base: all respondents, % by country)



Source : Eurobarometer 2012

The responsibility for coordination between the different authorities, and for information and awareness raising on the European Emergency Number 112, has been transferred from the Department of Civil Defence to the Ministry of Communications and Works, in a move to relaunch the campaign and improve information and awareness raising. Indeed, according to the most recent Eurobarometer survey, only 13% of the respondents knew that they could reach emergency services anywhere in the EU by calling 112. The Cyprus Police is the PSAP operator. A push system is already in use for mobile calls, and is planned to be extended to fixed calls in 2012.

14.3. Consumer complaints, tariff transparency

No major issues regarding consumer complaints were reported

The OCECPR has handled approximately 100 complaints during the reporting year. According to the statistical data of the Regulator, the main sources of complaints are: the quality of service (20%), billing (19%), premium SMS services (19%) and contractual terms (16%). A number of complaints is solved bilaterally between the providers and the consumers, while other complaints are not founded. Certain complaints are referred to the

Department of Consumer Protection of the Ministry of Commerce. No data is available on their outcome.

14.4. Number portability

While the number of days needed to **port** a fixed or a mobile **number** is steadily decreasing, a considerable reduction was also recorded on the number of fixed transactions (5.8%). The number of mobile transactions substantially increased (16 628 in 2011, compared to 11 623 in 2010).

Around 5 450 fixed number porting transactions took place between January and September 2011, compared to 6 015 fixed number porting transactions for the same period in 2010. The maximum time needed to port a fixed number was ten days in October 2011 (unchanged in 2011), which is below the EU average, and ten days to port a mobile number (compared to the EU average of 10 days). The cost of porting a fixed number in Cyprus remained unchanged, while the price per mobile ported number is the third highest in the EU, amounting to €9. Mobile portability is more often, with 16 628 numbers ported between January and September 2011 (compared to 11 623 a year before). The absence of a common database for the porting of numbers has led to inconsistencies, and the market has expressed the need for a centralised, automated procedure. The absence in the Cypriot market of a Certification Service Provider for eSignature is an additional factor delaying number portability. The portability of numbers of subscribers with unpaid invoices remains an issue.

14.5. Universal service

The incumbent operator was designated in March 2011 as the Universal Service provider, for all elements of the Universal Service, for a period of 3 years.

Following a public consultation, the incumbent operator was designated as the Universal Service provider for all the elements of the Universal Service, for a period of 3 years, starting from 4 March 2011.

14.6. ePrivacy

No major issues regarding ePrivacy were reported

According to the draft law aiming at transposing the amendments to the ePrivacy Directive, the NRA is empowered to receive data breach notifications from the providers.



EUROPEAN COMMISSION
Information Society and Media Directorate-General
Electronic Communications Policy
Implementation of Regulatory Framework

18 June 2012

CZECH REPUBLIC

2011

**Telecommunication Market and
Regulatory Developments**

CZECH REPUBLIC

15. MAIN MARKET & REGULATORY DEVELOPMENTS : **BEST PRACTICES AND CHALLENGES**

Development of the sector

The total revenues and investments of the electronic communications sector followed declining trend in the reporting period. Despite decreasing tendency the mobile segment contributed significantly in the extent of approximately 60% of overall revenues and 60% of the total investment.(synthesis 3)

The growth in fixed broadband penetration is slowing down leaving the penetration (23%) below the EU average. Concerning competition in the fixed broadband market, the share of alternative operators stands at 65.6% and belongs to the highest in EU. The market share of incumbent (o2) has slightly increased to 34.4%. DSL maintains a stable share of 38% in the fixed broadband market with incumbent (o2) being the leading provider. The share of non-DSL broadband lines remains high at 62%, with WLL and cable being the most significant platforms. Take-up of LLU remains below the EU average while bitstream remaining by far the most common form of access. The mobile broadband was growing segment of the broadband market with penetration reaching the level of 49.5% as of January 2012. Take-up of very high speed broadband is still limited and NGA network deployment is focused on local investments projects. (first part of synthesis 4)

Mobile voice communication accounted for 83.7% of all voice traffic which belongs among the highest shares across EU. There are currently 4 mobile network operators operating in the mobile market in Czech Republic - three of them (o2,T-mobile, Vodafone) operate on GSM+UMTS technology while fourth operator (Mobilkom) offering services oriented mainly at the provision of data based on CDMA technology, for the moment without presence of any MVNO. Fixed line voice markets have continued to decline over the year reflecting both the effects of the fixed-to-mobile substitution and structural changes in the market. Regulation of termination markets is not yet in line with the EC Recommendation. (synthesis 5)

Number portability continues to be used extensively. It appears that the transposition of the EU law provision on number portability is rather limited in scope, particularly as concerns the timing requirements for the national procedures implementing number portability.(synthesis 7.5)

Progress in Broadband deployment and take-up

The government has approved in 2011 the national broadband strategy "Digital Czech" which aims at enhancing faster broadband throughout the country. The strategy sets short-term targets related to broadband deployment, one of these targets should ensure delivering of national coverage at minimum speed of 2Mbps till 2013. The Czech Republic does not have nation-wide public broadband deployment project for the moment. Nevertheless government has confirmed to take necessary steps to enhance absorption of Structural funds for broadband deployment and to increase use of EIB loans. (second part of synthesis 4)

Independence and effectiveness of the NRA

The reduction of the number of the Czech Telecommunication Office (CTO) functional positions continued in the reporting period, further staff reductions will be likely connected to transfer of some responsibilities of CTO towards a civil court. (synthesis 2)

Implementation of the framework

The revised regulatory framework for electronic communications was transposed into national legislation by means of Act No. 468/2011 Coll., which amends the Electronic Communications Act¹⁸ in particular. The amended Act No. 468/2011 Coll. came into force on January 1, 2012. Primary legislation has been complemented by secondary legislation.

Spectrum management

The multi-band auction for the 800 MHz, 1800 MHz and 2.6GHz frequency bands is planned for the end of 2012. Czech Telecommunication Office (CTO) has officially commenced auction process by announcing public consultation on detailed auction rules at the end of March 2012. The digital switchover was completed on 11/11/2011.(synthesis 6)

¹⁸ Act No. 127/2005 Coll. on Electronic Communications and on Amendments to certain related Acts (the Electronic Communications Act), as later amended and some other Acts. .

Citizens and consumer protection

Availability of 116 harmonised numbers has been improved/increased as the number 116 000 for missing children was assigned in November 2011.(7.1) European emergency number 112 is in operation alongside four specific national emergency numbers, the ratio of hoax/false calls to the total number of calls still appears very high accounting to 70 % of total calls.(7.2) No major issues on net neutrality were reported.(7.3) CTO has currently introduced the new initiative on tariff transparency – the first website tariff calculator.(7.4) The national authorities declared they had no intention to extend the scope of national universal service obligations to broadband connections. Net costs for providing of the universal service in 2010 were reimbursed from the state budget.(7.6) The Constitutional Court of the Czech Republic has taken a decision in April 2011 to annul part of the Act on Electronic Communications, so the obligation to retain traffic and location data and to make this data available to competent authorities ceased its legal effect .(7.7)

16. NATIONAL REGULATORY AUTHORITIES (NRA)

The reduction of the number of the Czech Telecommunication Office (CTO) functional positions continued in the reporting period, further staff reductions will be likely connected to transfer of some responsibilities of CTO towards a civil court.

The Chairman of the Board of the CTO¹⁹ was re-appointed in 2010 for a period of another three years. He was also confirmed as a member of the Board from 2010 till 2015. The term of office for one member of the Board expired in November 2011. Furthermore, the term of office for next one member of the Board will expire in June 2012. The Government has appointed the new member of the Board since 15. 3. 2012.

In line with the government policy on the medium-term expenditure for the years 2010 to 2012²⁰, the reduction of the number of functional positions continued. The average number of employees in CTO was approximately 444 at the end of 2010, which represents a decrease of 0.7% compared to the previous year.

Further staff reductions will be likely connected to transfer of some responsibilities of CTO towards a civil court. Currently CTO is resolving subscriber disputes, including disputes related to a payment obligation. The disputes related to a payment obligation represent majority of all subscriber disputes and the number of submitted proposals to decide in this

¹⁹ CTO has a five-member Council appointed for five year's term. The members and the Chairperson of the Council are appointed and withdrawn by the Government of the Czech Republic on proposal submitted by the Minister of Industry and Trade of the Czech Republic. The Council members' term of office is five years.

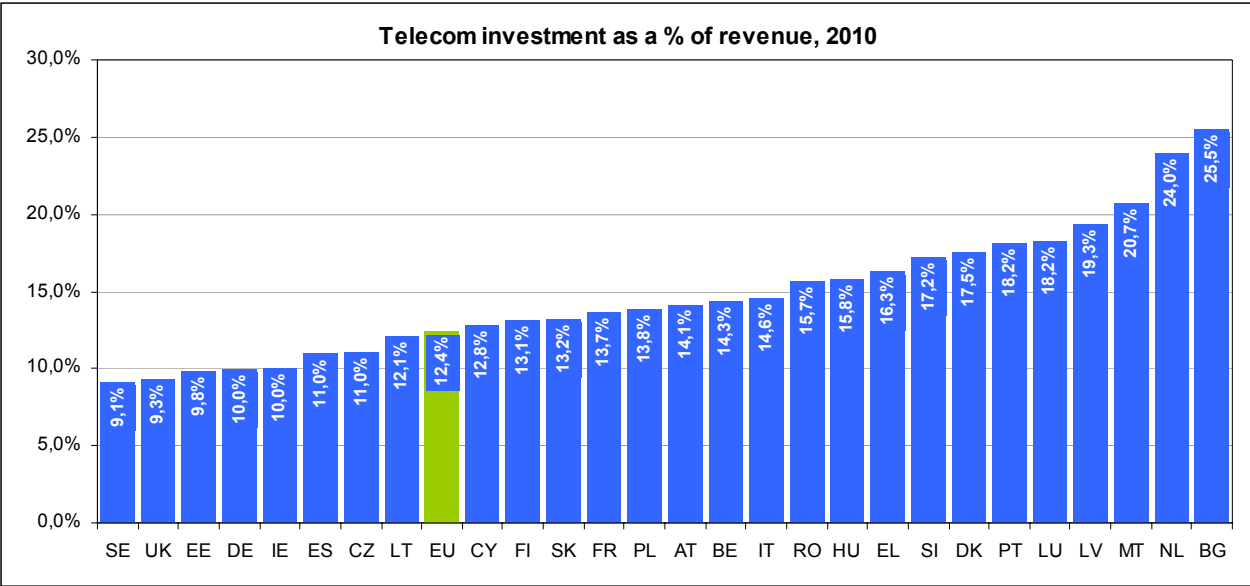
²⁰ The Resolution of the Government of the Czech Republic No. 715 of 8 June 2009

field is continuously increasing. There was 150 000 proposals submitted in 2010 which means enormous administrative burden. Furthermore it was considered that these disputes have more civil character and do not necessarily relate with performance of regulation and control in electronic communications sector. The transfer of disputes related to a payment obligation to a civil court will mean releasing of capacities for performance of regulation, on the other hand possible reduction of approximately 100 employees from 2013.

The number of operator disputes submitted to CTO was relatively low; the regulator has faced a number of court appeals against its decisions, in particular in relation to universal service. CTO has published annual report for 2010 and is continuing in good practice of monthly monitoring reports on the market and price developments. CTO's budget resources, derived from a separate budget line from the state budget, remained stable for 2011.

17. REVENUES AND INVESTMENTS

The total revenues and investments of the electronic communications sector followed declining trend in the reporting period. Despite decreasing tendency the mobile segment contributed significantly in the extent of approximately 60% of overall revenues and 60% of the total investment.



Source: Commission services

The total revenues of the electronic communications sector declined to €5.099 billion as of 31 December 2010 and represents drop of 7.1% compared to previous year. The mobile segment

contributed significantly in the extent of approximately 60% of overall revenues (€2.994 billion). The fixed sector generated € 1.867 billion.

Investments followed the same trend as revenues and experienced a decrease to €563 million as of 31 December 2010, which represents a slight fall of 2.3% compared to previous year. This drop of overall investments was mainly driven by lower investments of alternative operators and of incumbent in the fixed segment. It has been estimated that nearly 60% of the total investment has been made by mobile operators.

18. BROADBAND

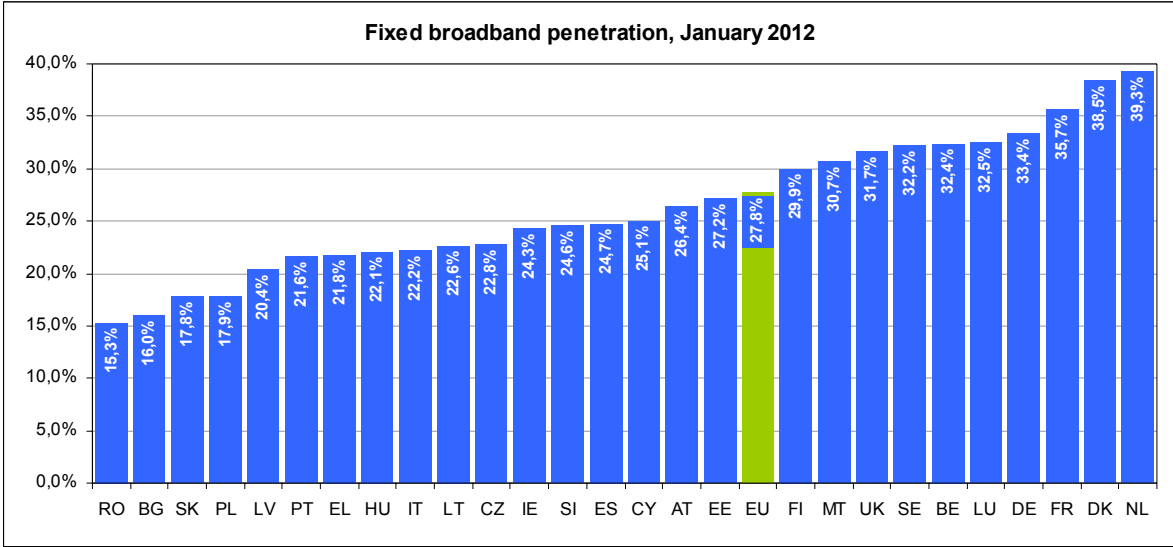
The growth in fixed broadband penetration is slowing down leaving the penetration (23%) below the EU average. Concerning competition in the fixed broadband market, the share of alternative operators stands at 65.6% and belongs to the highest in EU. The market share of incumbent (o2) has slightly increased to 34.4%. DSL maintains a stable share of 38% in the fixed broadband market with incumbent (o2) being the leading provider. The share of non-DSL broadband lines remains high at 62%, with WLL and cable being the most significant platforms. Take-up of LLU remains below the EU average while bitstream remaining by far the most common form of access. The mobile broadband was growing segment of the broadband market with penetration reaching the level of 49.5% as of January 2012. Take-up of very high speed broadband is still limited and NGA network deployment is focused on local investments projects.

The government has approved in 2011 the national broadband strategy "Digital Czech" which aims at enhancing faster broadband throughout the country. The strategy sets short-term targets related to broadband deployment, one of these targets should ensure delivering of national coverage at minimum speed of 2Mbps till 2013. The Czech Republic does not have nation-wide public broadband deployment project for the moment. Nevertheless government has confirmed to take necessary steps to enhance absorption of Structural funds for broadband deployment and to increase use of EIB loans.

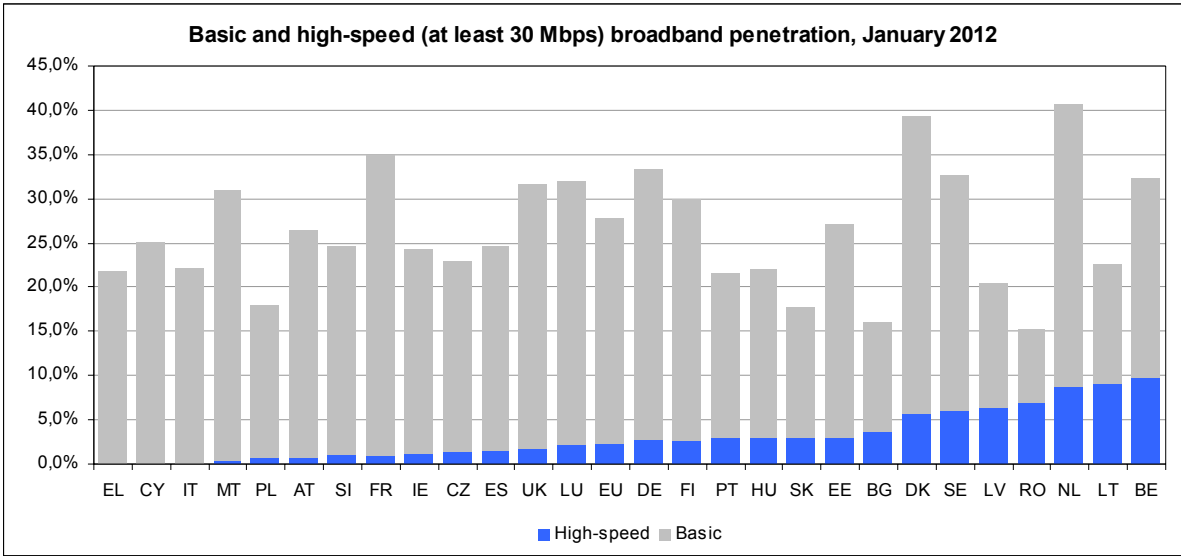
4.1 Market Situation & Regulatory developments

The fixed broadband market continued to grow, although the pace of fixed broadband lines growth is slowing down. The fixed broadband penetration reached approximately 23% as of January 2012, representing an increase in penetration rate of 1.6% in the reporting period. However, the Czech Republic still continues to lag behind the EU average penetration rate for fixed broadband (27.7%). Concerning competition in the fixed broadband market, the share of alternative operators stands at 65.6% and belongs to the highest in EU. The market share of incumbent has slightly increased to 34.4%. DSL technology maintains a stable share of 38% in the fixed broadband market with incumbent being the leading provider. The share of non-DSL broadband lines remains high at 62%, with WLL and cable being the most significant

platforms. Nevertheless it can be observed ongoing trend of slight decline of DSL and WLL platforms in favour of other technologies as FTTx.

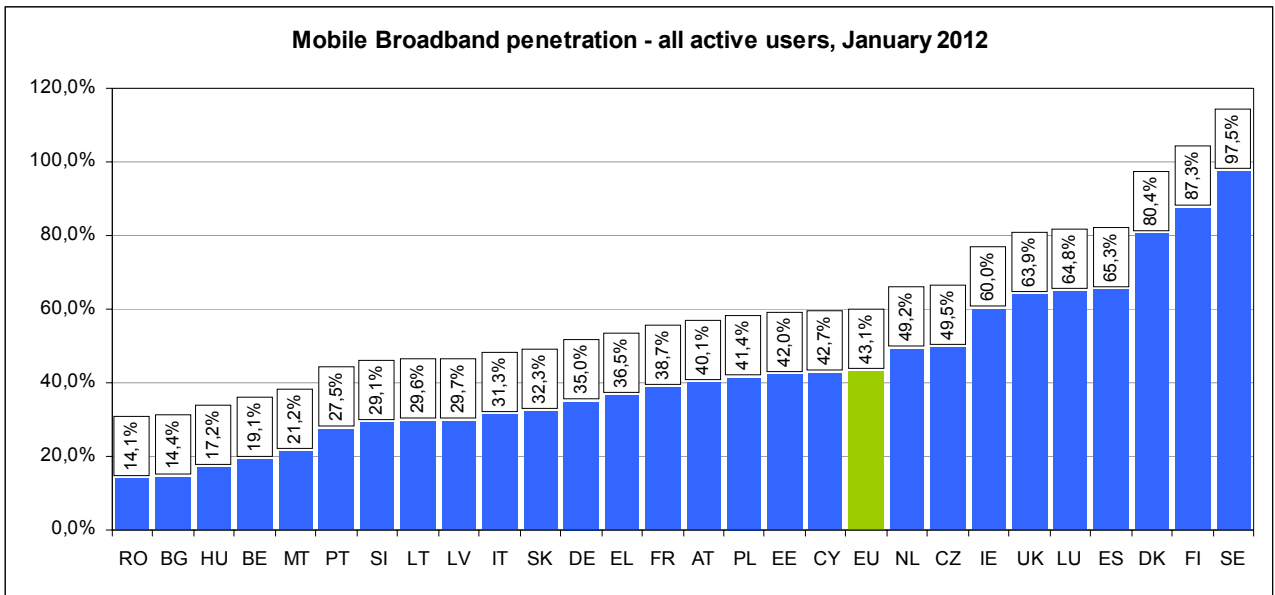


Source: Communications Committee



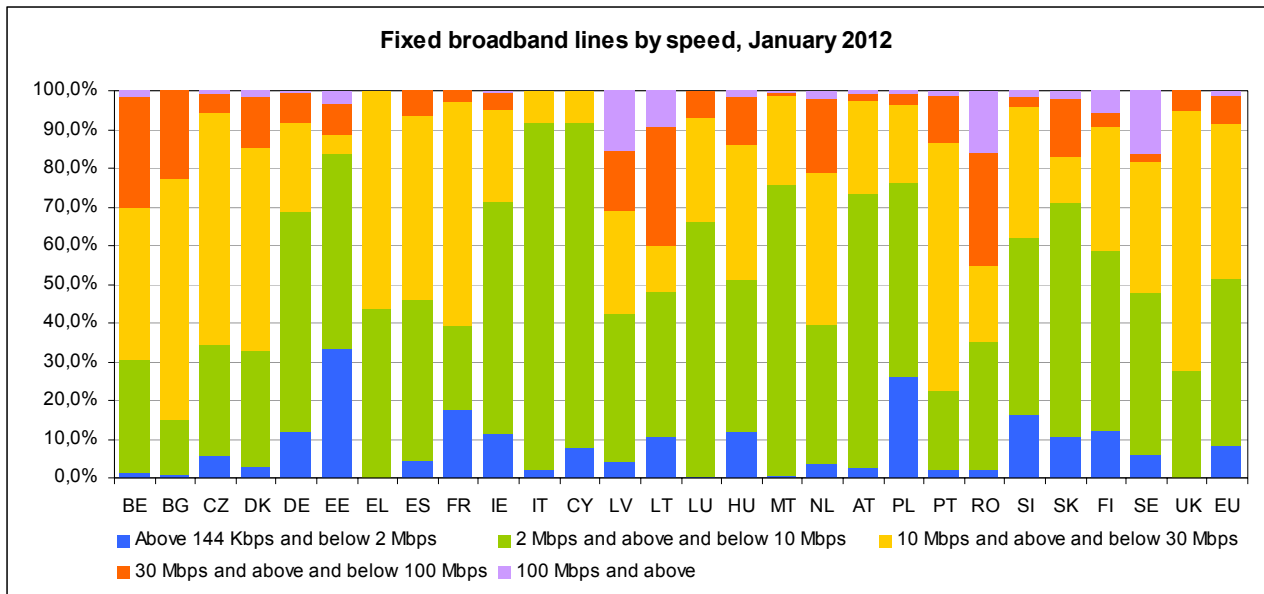
Source: Communications Committee

Mobile broadband was growing segment of the broadband market. The mobile broadband penetration reached 49.5% as of January 2012 which is slightly over the EU average of 43.1%, penetration of mobile broadband use on large screen (dedicated data service cards, modems, keys) was 6.1% in the Czech republic.



Source: Communications Committee

The speeds delivered over fixed broadband lines showed downward trend. The take-up of very high speed broadband lines is still limited, 4.5% of fixed broadband connections were at least 30 Mbps and only 0.3% at least 100 Mbps, compared to the EU average of 7.2% and 1.3% respectively. The most common achieved speed is between 10Mbps and 30Mbps and accounts for 61.4% of all lines.



Source: Communications Committee

There is an increase in the take up of bundled services, however bundled offer penetration (double play, triple play) stands at rather low level of 3.4 % compared to EU average of 22.2%, as of July 2011.

NGA network deployment remains still limited and mainly focused on local investments projects. The incumbent has not yet significantly invested in NGA roll-out, so far the investments were local in the extent, mainly applied FTTB and VDSL technologies. For years 2011-2012 the incumbent has announced roll-out plans expecting approximately 100 000 homes passed (one fourth connected). WLL and cable providers are the main market players building FTTx networks (mostly as FTTB) as upgrades of their existing networks. Nor these investments are on a nation-wide scale, and thus in general fibre deployment is relatively low, with FTTx retail lines representing only a marginal part of total retail fixed broadband lines.

The share of unbundled lines (full LLU) continued to be below the EU average. For full LLU, 34.3% of new entrants' DSL lines are unbundled compared to 69.1% in the EU and for Share Access (SA) the figure is only 1.1%. Bitstream is by far the most common form of access at 64.2% as of January 2012.

The last adjustment of LLU pricing was performed at the end of 2010 representing reduction of average monthly costs of full LLU by 7.43% and of average monthly costs of shared access

(SA) by 14.45%. The total average monthly cost for the full LLU is €11.07 and €2.76 for the SA .

For the market for wholesale physical network infrastructure access the latest market review followed by adoption of remedies was carried out in 2010. Fibre was included in the market definition, transparency and accounting separation obligations were imposed on incumbent's fibre network. The incumbent is also obliged to inform in advance about the intention of copper-fibre replacement, the set of information requested in this context is defined. CTO applies price regulation²¹ on copper networks alongside a number of other obligations, such as access, non-discrimination, transparency and accounting separation. CTO has recently (2/2012) announced launching of 3rd review of the market. In this context, it would be important to address access remedies for fibre in particular.

Currently in the wholesale broadband access market the incumbent is subject to the obligations of access, non-discrimination, transparency and accounting separation. Price regulation is not mandated for the moment. These obligations are applied on copper networks, as fibre is not included in market definition.

4.2 National Plans, private & public investments

In January 2011, the government has approved so called "Digital Czech" strategy²². This national broadband strategy aims at decreasing of digital divide between countryside and cities. The strategy describes current state of play in relation to access to broadband and points out, that 10 % of municipalities do not have any access to broadband (with minimum download speed of 2 Mbps and more) and 20% of municipalities have choice only of one provider. In this context Digital Czech introduces following targets²³: i) national coverage at minimum speed of 2Mbps till 2013; ii) coverage in the cities at minimum speed of 10Mbps till 2013; iii) faster broadband connections in rural areas till 2015 with speed corresponding to 50% of the average speed available in urban areas, iv) broadband connection at minimum speed of 30Mbps for at least 30% of subscribers in urban areas.

Following tools have been identified in the strategy in order to achieve above mentioned targets: i) establishment of a register of passive infrastructure to facilitate reduction of infrastructure deployment costs; ii) setting of development criterions in the allocation of digital dividend to support broadband deployment in less populated areas; iii) assessing of the possibility to reduce the fees for the rights of use of frequencies (taking into account

²¹ Price caps based on LRIC for monthly fees.

²² The Resolution of the Government of the Czech Republic No. 50 of 19 January 2011

²³ All speeds are minimum download speeds in nominal terms.

transmission capacity); iv) reduction of administrative burden by means of simplification of the procedure for permits and rights of way accompanied with /by revision of the Construction Act; v) launching of a new web portal www.digitalnicesko.cz to share best practice and to exchange information on legislative measures, new technologies and possibilities of EU funding; vi) assessing of the possibilities to finance broadband deployment, including Structural funds, EIB financial mechanism etc.

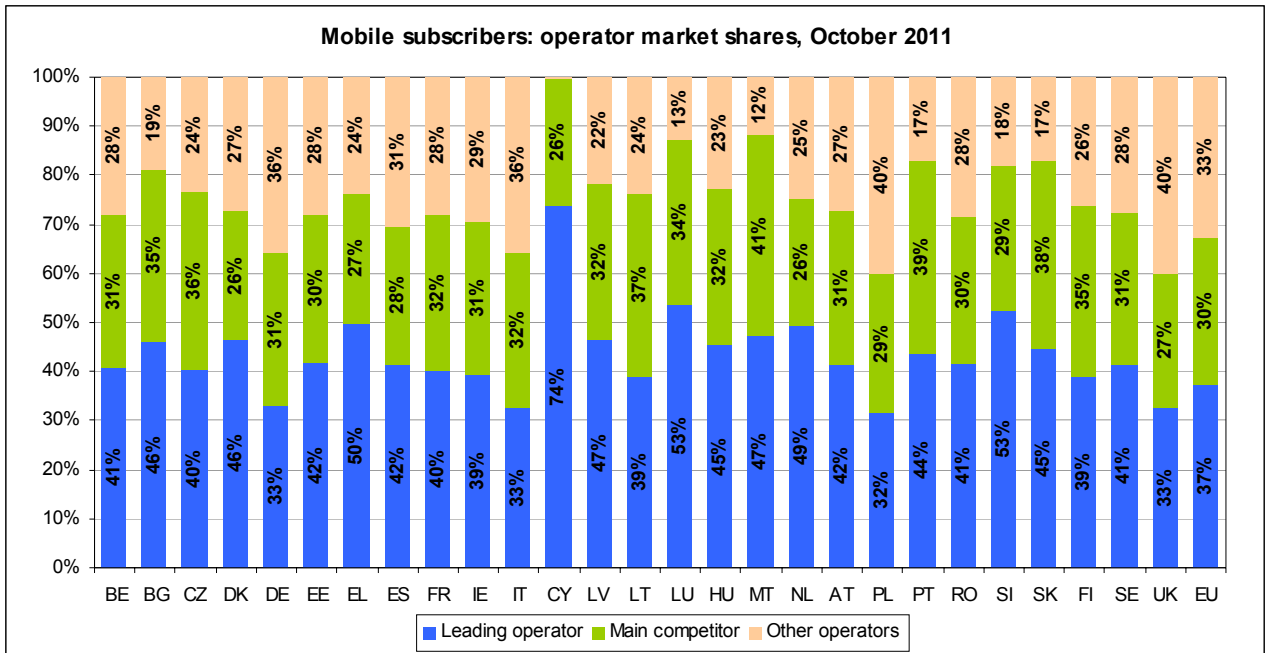
Due to current financial constraints of the state budget the Czech Republic does not have nation-wide public broadband deployment project. Thus the effort is aimed at non-financial support, in particular at creating suitable conditions to promote private investments. Nevertheless government has confirmed to take necessary steps to enhance absorption of Structural funds for broadband deployment and to increase use of EIB loans.

19. VOICE AND OTHER ECOMMUNICATION SERVICES

Mobile voice communication accounted for 83.7% of all voice traffic which belongs among the highest shares across EU. There are currently 4 mobile network operators operating in the mobile market in Czech Republic - three of them (o2, T-mobile, Vodafone) operate on GSM+UMTS technology while fourth operator (Mobilkom) offering services oriented mainly at the provision of data based on CDMA technology, for the moment without presence of any MVNO. Fixed line voice markets have continued to decline over the year reflecting both the effects of the fixed-to-mobile substitution and structural changes in the market. Regulation of termination markets is not yet in line with the EC Recommendation.

5.1 Mobile services

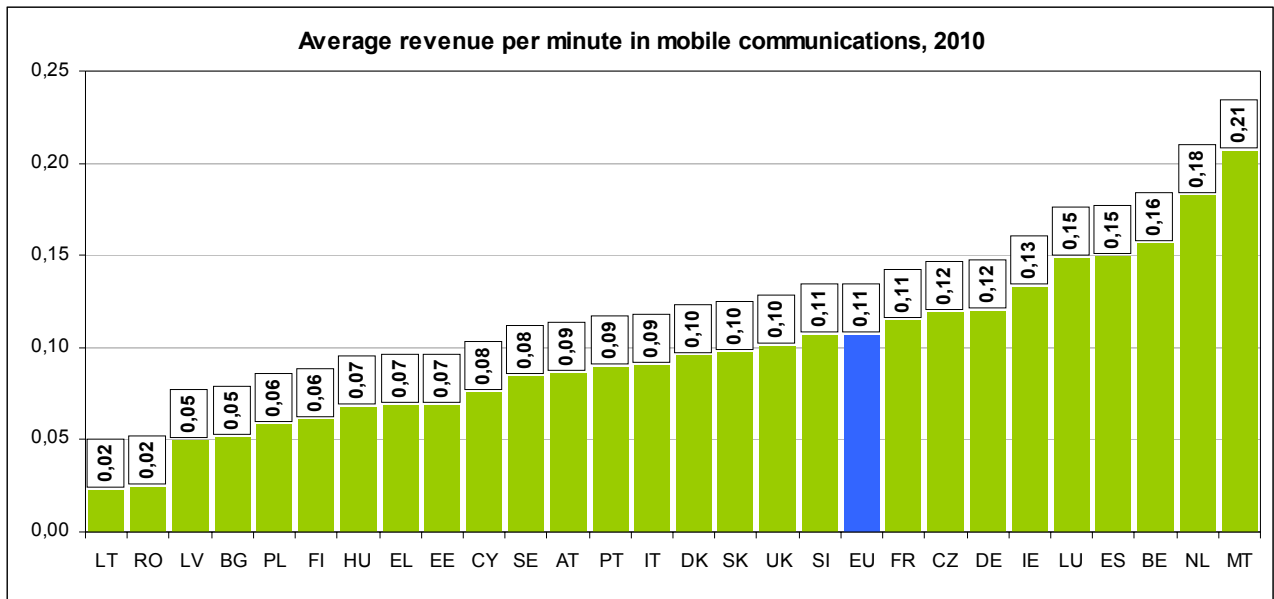
The mobile penetration rate continued to increase, although in a slowing pace, and reached a level of 128.5% in 2011. There are currently 4 mobile network operators operating in the mobile market in Czech Republic - three of them operate on GSM+UMTS technology while fourth operator offering services oriented mainly at the provision of data based on CDMA technology, for the moment without presence of any MVNO. The competition situation in the mobile markets stayed rather unchanged with two largest MNOs (o2 and T-Mobile) having a stable comparable market share (by subscription) around 38%. The remaining market share was divided between the other two MNOs (Vodafone and Mobilkom).



Source : Commission services

The average revenue per minute in mobile voice communication stood at €0.12²⁴, compared with the EU average of €0.11. Czech mobile average revenue per user (ARPU) has declined over last four years and reached a level of €172 (end of 2010). Concerning traffic volume mobile voice communication accounted for 83.7% of all voice traffic which belongs among the highest shares across EU. More than half of mobile subscribers opt for post-paid packages..

²⁴ Due to a definition change no comparison can be made with previous years.

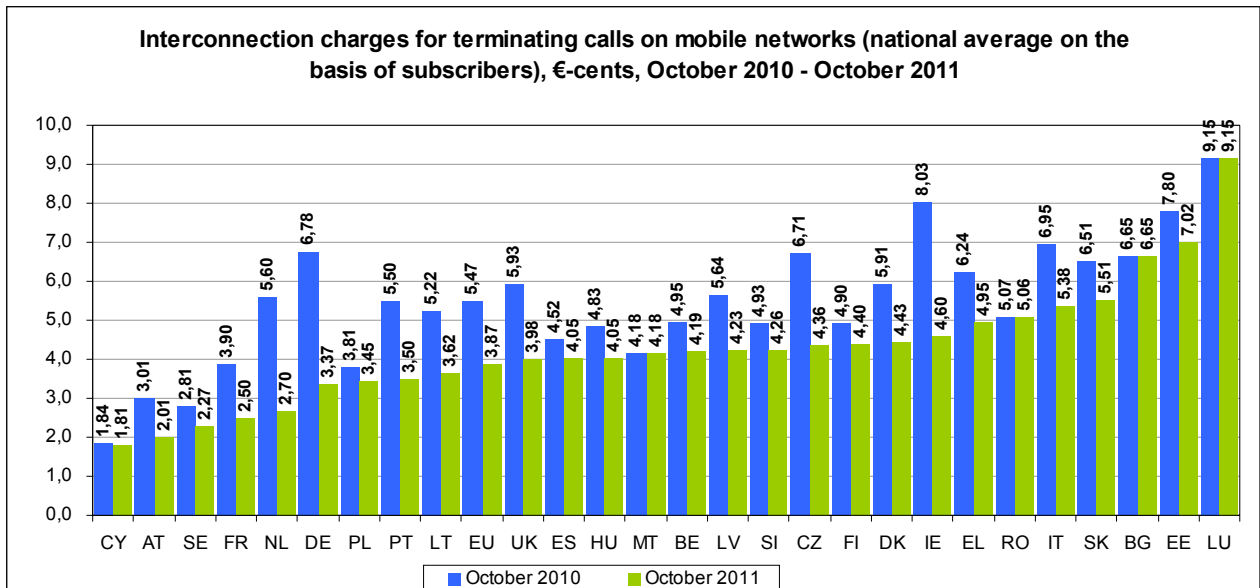


Source : Commission services

Regulation of the market for voice call termination on individual mobile networks is currently based a 2010 decision. Three main mobile network operators are subject to a full set of remedies (access, non-discrimination, transparency, accounting separation)²⁵. Price regulation was also imposed introducing glide path valid until July 2011. Following this glide path the average mobile termination rates (MTR) were reduced between October 2010 and October 2011 by 35% to the latest level of €0.0436, remaining above EU average of €0.0387. Retail prices do reflect above mentioned decreases in MTRs only in limited scope.

Currently the price caps for termination rates are set on the basis of historical costs (FAHC). CTO will publish a decision on prices for MTRs still for coming year 2012. CTO intends to implement LRIC model as of 2013. CTO confirmed that final works on model development are being carried out.

²⁵ The fourth operator was mandated only with the obligation of non-discrimination and transparency without need to publish reference offer.



Source : Commission services

CTO performs continuous monitoring of compliance with the requirements of the Roaming Regulation with satisfying results. CTO has reported one complaint on involuntary roaming on the borders with Poland. This case is being currently investigated in cooperation with the Polish NRA. In this context CTO has published on web site a recommendation for end-users how to prevent involuntary roaming in the border areas.

5.2 Fixed

Fixed line revenue and traffic have continued to decline over the year reflecting both the effects of the fixed-to-mobile substitution and structural market changes. As of December 2010 voice traffic on fixed networks was around 16.3% of all voice traffic continuing the decreasing trend from previous year. The incumbent's market share (measured by traffic volume) in the fixed telephony market, taking into account all types of calls, is around 60% in 2010 which represents a fall of 1% from the previous year. Fixed voice is taken-up mainly as part of a bundle. Approximately 20% of subscribers used an alternative provider for voice telephony services (national calls only) as of July 2011 which is up 4 percentage point on the previous year. VoIP operators' market share by traffic volume was estimated at 16.9% in 2010.

Full set of remedies is being implemented on incumbent in the fixed origination and termination market including price regulation. The last decision on price caps for termination and origination has been made as late as in April 2010. Lighter obligations are imposed on 23 alternative operators assigned with significant market power in the fixed termination market,

only obligation of non-discrimination and transparency. There is neither price regulation nor access obligation mandated for alternative operators as it was suggested by European Commission. The fixed interconnection charges remain continuously high over the EU average.

The CTO intends to implement a pure bottom-up LRIC model for fixed termination market since 2013 and thus align the latter with the EC's Termination rates Recommendation. In this context CTO confirmed that final works on model development are being carried out. It is also expected that CTO will launch next round of market review of retail access market in the second quarter of 2012.

Regarding the market for wholesale terminating segments of leased lines, the CTO published the results of the market review at the end of 2010. Only the segment of leased lines having speed lower or equal to 2Mbps, was found non-competitive. The obligations were imposed in connection with provision of services by means of classical circuits and based on Ethernet. Access, transparency, non-discrimination and accounting separation obligations were mandated in 2011. Previously imposed price regulation has been withdrawn.

5.3 Broadcasting

Broadcasting revenues totalled almost €176 million as of December 2010. At an overall level, broadcasting revenues make up 3.4% of overall electronic communications sector revenues in the Czech Republic. The household penetration of satellite TV remains high and currently accounts for 42.4%. The use of cable TV keeps the stable trend. The take-up of IPTV is rather marginal and stands at 3.8%.

The transition to the terrestrial digital television broadcasting has been completed in November 2011 with the exception of two small regions where analogue switch-off is planned in June 2012. Four broadcasting networks are in operation, one network being used for the distribution of statutory public broadcasting (public multiplex), whilst remaining three multiplexes are for commercial use.

In terms of coverage, whilst the first two digital broadcasting networks have reached the coverage of almost 100% of the population, the third network covers 96.3 % and the fourth network approximately 22 % of the population. Long time Trial test of DVB-T2 was realized during 2011 to study technical aspects of DVB-T2 for large area SFN opportunity.

20. SPECTRUM MANAGEMENT

The multi-band auction for the 800 MHz, 1800 MHz and 2.6GHz frequency bands is planned for the end of 2012. Czech Telecommunication Office (CTO) has officially commenced auction process by announcing public consultation on detailed auction rules at the end of March 2012. The digital switchover was completed on 11/11/2011.

In January 2011, the government approved a policy plan for the future use of spectrum. The government has confirmed the plans to release the digital dividend by the end of 2011 for the use of mobile broadband and agreed method of assigning available frequencies in 800 MHz, 1800 MHz and 2.6 GHz bands in the auction-based tender.

In September 2011, the CTO published basic principles of auction for the assignment of rights to use radio frequencies in the above mentioned bands. The possibility to use format of auction was enabled by the above mentioned – Act No. 486/2011 Coll. The SMRA auction will be used. The spectrum allocations are planned to be valid for 15 years. CTO intends to release in total of 30 MHz of paired spectrum in 800 MHz band and 24.8 MHz of paired spectrum in 1800 MHz band. There will be offered 70 MHz of paired spectrum in 2.6 GHz band while in the unpaired part of the same band 45 MHz. In order to prevent spectrum fragmentation it is suggested to introduce minimum amount of spectrum that needs to be acquired. Spectrum caps will be applied to facilitate competition and support potential new entrants. The starting prices for the spectrum auction will be set and determined mainly by a benchmarking exercise against international prices from auctions abroad.

CTO has officially commenced auction process by announcing public consultation on detailed auction rules at the end of March 2012. After termination of public consultation (5/2012) CTO will proceed with evaluation of comments and will announce final conditions (6/2012). CTO will subsequently announce call for applications, make their assessment and invite eligible participants. Training and workshops will be organised by CTO for possible participants. The multi-band auction is expected to be completed in the fourth quarter of 2012.

21. CONSUMER INTEREST

7.1 116 - Harmonised numbers for services of social value

Availability of 116 harmonised numbers has been improved as the number 116 000 for missing children was assigned in November 2011.

The number 116 000 for missing children has been assigned in November 2011 to the Missing Children Czech Republic o.s. However, the number is not operational yet. The

number 116 111 for child helplines is operated by Safety Line Association since June 2008.

Despite their availability and the fact that applications for provision of the services may be submitted, none of the other numbers dedicated for harmonised services of social value (i.e. 116006 for victims of crime, 116117 for non-emergency medical service and 116123 for emotional support) has been assigned yet. There is no indication by when could these remaining services of social value be operational.

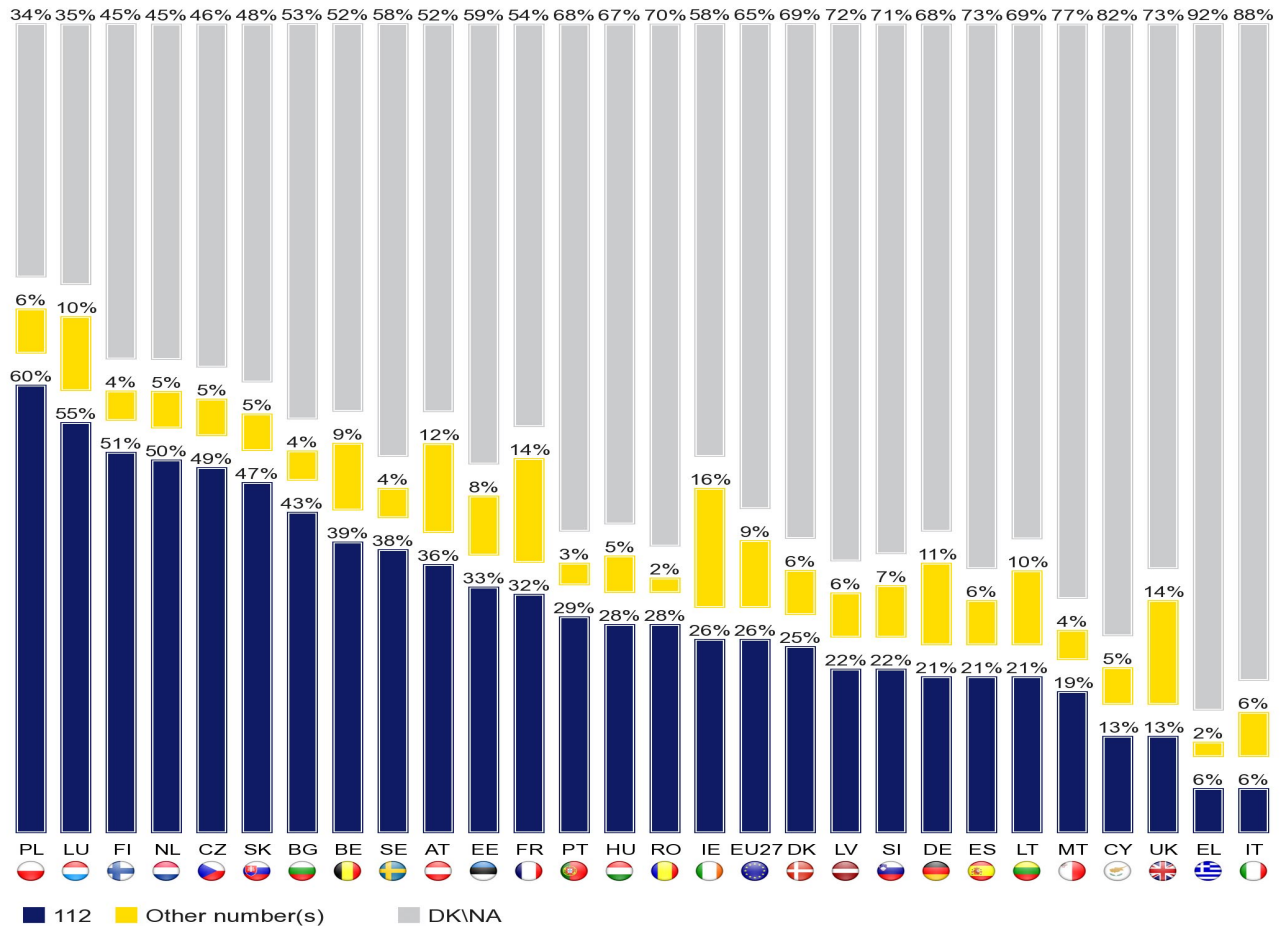
7.2 112 - European Emergency Number

European emergency number is in operation alongside four specific national emergency numbers. The ratio of hoax/false calls to the total number of calls still appears very high accounting to 70 % of total calls.

Awareness of 112 as the EU-wide emergency number:

Can you tell me what telephone number enables you to call emergency services anywhere in the European Union?

(Base: all respondents, % by country)



Source : Eurobarometer 2012

Alongside 112, there are four specific national emergency numbers (i.e. fire department, rescue/ambulance, police and metropolitan police) in operation. The volume of emergency calls during the first nine months in 2011 was around 7 million calls. 62% of total emergency calls in the same period have dialled specific national numbers instead of 112. The only alternative mean to voice communication for access to 112 for disabled end-users is the text relay.

As regards call response time, all emergency calls have been answered within 20 seconds. As regards the use foreign languages, most of the PSAPs are able to handle calls directly in English. In some PSAPs, the availability of service in English depends on linguistic resources of the PSAPs. Some PSAPs are able to handle the calls in German, French, Polish or Russian.

The ratio of hoax/false calls to the total number of calls still appears very high accounting to 70 % of total calls.

Automatic pull method is used to provide fixed caller location and a centralised comprehensive fixed caller location database has been established. As regards providing mobile caller location, the push method is used.

A wide range of promotional activities has been put in place in order to inform citizens about 112 as the European emergency number including promotional activities on the occasion of the 112 Day on the 11 February, various media campaigns and awareness campaigns with focus on children and youth.

7.3 Net neutrality & quality of service

No major issues on net neutrality were reported.

No concerns related to net neutrality have been recorded. VoIP traffic is not being blocked. Fair user policy is applied by most of mobile operators, rarely in fixed networks as well.

CTO is preparing a new proposal for the measure of general nature laying down the service quality parameters to be measured, and the content, form and manner of publishing information on the current prices, quality and conditions of the provision of publicly available electronic communication services related prices and special measures for disabled users.

7.4 Consumer complaints, tariff transparency

CTO has currently introduced the new initiative on tariff transparency – the first website tariff calculator.

CTO continues to provide a quality handling service to consumers. CTO has received more than 1700 consumer complaints during 2011. The complaints are mostly related to incorrect invoicing, quality of service, consumer contracts, number portability and the receipt of TV signal related to the switchover to digital broadcasting. CTO cooperates with the Office for the Protection of Personal Data on matters related to unsolicited commercial communications.

Czech Commercial Inspection deals with issues related to misleading advertising. CTO commenced division of consumer complaints also on the basis of service provider against whom is the complaint raised. CTO plans revision of consumer complaints evidence in general in order to better utilize the data in the future (comparison with EU data).

The quality of service and tariff transparency is monitored on regular basis by CTO. CTO has currently introduced the new initiative on tariff transparency – the first website tariff calculator, www.tarifomat.cz, was approved by CTO as a transparent tool for consumers to compare the offers on the market and to assess which offers provide best value (in terms of price, features, services, etc) for their specific usage. For the moment it is limited to the mobile communication services.

7.5 Number portability

Number portability continues to be used extensively. It appears that the transposition of the EU law provision on number portability is rather limited in scope, particularly as concerns the timing requirements for the national procedures implementing number portability.

The amount of number ported is increasing. In the period from January to September 2011 around 243 124 mobile numbers and 603 152 fixed numbers were ported. The wholesale charges for porting a number has declined and stood at €11 on average for mobile numbers and at €16 for fixed numbers. The end-users porting a mobile number are either not charged at all or are subject to a symbolic price of 1CZK.

It appears that the transposition of the EU law provisions on number portability is rather limited in scope, particularly as concerns the timing requirements for the national procedures implementing number portability. The primary legislation sets out time limits only for the loss of service, which can not exceed one day. The time limit for the period from concluding the porting agreement to number activation is specified in the secondary legislation. The public consultation introducing new proposal for the measure of general nature related to number portability has been launched in November 2011. Following comments from the public consultation and practical experience CTO decided to redraft a new version.

CTO was performing a monitoring exercise in order to assess compliance of operators with obligations related to number portability, in administrative proceedings penalties were imposed on three mobile network operators.

7.6 Universal service

The national authorities declared they had no intention to extend the scope of national universal service obligations to broadband connections. Net costs for providing of the universal service in 2010 were reimbursed from the state budget.

Universal service obligations are limited to the provision of public payphones, access for disabled persons to PATS and special prices plans. The incumbent was re-designated with obligation to provide public payphones services until March 2012. Because of the ongoing decline in the use of public payphones, CTO decided to gradually lower the number of obligatory payphones until 2012. The incumbent was also mandated with obligation to provide access for disabled persons to PATS at the same level of quality as enjoyed by other end-users, in particular by providing special terminal equipment. During 2011 CTO launched a review of this partial service in order to determine scope of this obligation in the future. Currently the designation is lasting until July 2012. The provision of special tariffs for people with special social needs has been imposed on the incumbent until July 2014.

The following components of universal service - connection and access at a fixed point to the public network, directories and directory enquiry services, complementary services – remain out of scope of universal service obligation as they are considered to be available in the market under normal commercial conditions. The national authorities declared they had no intention to extend the scope of national universal service obligations to broadband connections. Concerning funding of universal service, the decision on determination of net costs for 2009 was issued only in October 2011. Net costs for providing of the universal service in 2010 were reimbursed from the state budget.

7.7 ePrivacy

The Constitutional Court of the Czech Republic has taken a decision in April 2011 to annul part of the Act on Electronic Communications, so the obligation to retain traffic and location data and to make this data available to competent authorities ceased its legal effect.

Article 5(3) of the ePrivacy Directive ("cookies") was transposed into the Act on Electronic Communications, the competent authority for monitoring the implementation being the Office for Personal Data Protection. According to the rules, information may not be stored on or retrieved from a person's terminal equipment unless the individual has been given clear and comprehensive information about why this is being done and has given her/his consent. The provision does not specify how the information is to be provided or consent is to be obtained.

The Office for Personal Data Protection also deals with issues related to spam, spyware and malware.

CTO is in charge of dealing with issues related to unsolicited marketing call. In two occasions, penalties have been imposed in this area during 2011. CTO is also the authority to deal with issues relating to the protection of traffic and location data and security and integrity of networks and services. The Constitutional Court of the Czech Republic has taken a decision²⁶ in April 2011 to annul part of the Act on Electronic Communications²⁷, so the obligation to retain traffic and location data and to make this data available to competent authorities ceased its legal effect.

²⁶ Decision No.94/2011

²⁷ Articles 97 Para 3 and 4 of the Electronic Communications Act and the Decree No. 485/2005 Coll., on the extent of operational and localisation data, time-period of their keeping and the form and method of their transfer to bodies authorized to their use.



EUROPEAN COMMISSION
Information Society and Media Directorate-General
Electronic Communications Policy
Implementation of Regulatory Framework

18 June 2012

GERMANY

2011

Telecommunication Market and Regulatory Developments

GERMANY

1. MAIN MARKET & REGULATORY DEVELOPMENTS:

BEST PRACTICES AND CHALLENGES

Development of the sector

Both sector **revenues and investment** declined between 2009 and 2010 by 2% and 3.3% respectively, but are still at substantial levels at €60 billion and €6 billion respectively. While revenues in the mobile sector increased by 3.3%, revenues in the fixed sector declined by 3.6%. 53% of the total investment was made by competitors. In 2011, the incumbent (Deutsche Telekom, DT) decreased its net debt by 5.1% to €40 billion. [Section 3]

Competition in the **fixed market** was slowly increasing in 2011 with around 100 players competing. The incumbent's (DT) market share for fixed access lines is still estimated at 65% comparing to the EU average of 70%. However, the market share of competitors (e.g. Vodafone, United Internet and Telefonica) increased by 6.7% mainly because of attractive bundles of voice and DSL broadband services at the level of €20-30 per month. [Section 5a].

In the fixed **broadband market** DT still held a share of 45% of fixed broadband lines compared to an EU average of 43%. However its main competitors including cable operators (mainly Kabel Deutschland and Unity Media) gained a significant share of new fixed broadband customers – as reported by market players around 50% of new customers chose cable. With a fixed broadband penetration of 33% Germany holds the fourth best rank compared to an EU average of 28%. [Section 4a]

The main trend in the **mobile market** was the take-up of mobile data services driven by smart phone and tablet usage and mobile data bundles in the order of €5-10 per GByte data volume. This was reflected in revenues for mobile data (18 % of total mobile revenues comparing to 16% a year ago as reported by market players). The competition situation in the mobile markets stayed rather unchanged. The two largest MNOs (DT and Vodafone), which were the first entrants historically, had a stable revenue market share of each 30%. The remaining market share was divided between the other two MNOs (Telefonica O2 and E-Plus) and service providers acting as resellers (mainly Freenet and Drillisch), which had a significant share in the order of 15%. [Section 5b]

Number portability in mobile and fixed networks was usually done within the one-day requirement. The number of transactions for change of provider was exceeding 4 million with regard to fixed numbers and doubled with regard to mobile numbers to nearly 1 million. [Section 7.5]

Progress in broadband deployment and take-up

In 2011, good progress was made towards the goals of the 2009 German **broadband strategy**, which is roughly in line with the DAE coverage targets (there is no take-up target). Coverage of basic broadband in rural areas was enhanced to 93% of households with the roll-out of LTE networks in line with license requirements– putting DE in one of the leading positions in the EU. Cable operators continued to upgrade their fixed line networks to offer data rates of up to 100 Mbps reaching coverage of 52 % of the population as reported by market players. While the speed of more than 30% of broadband connections exceeded 10 Mbps (compared to EU average of 47%), the number of subscriptions to the highest-speed connections of 100 Mbps remained marginal. Even though offers for 100 Mbps lines started in the order of €40 per month, most consumers were not willing to pay €10 more or considered lower data rates as sufficient for current use.

With regard to potential **cost reduction in civil engineering**, the content and usability of infrastructure maps were further enhanced – setting Germany as the most advanced Member State in that respect. A major step towards **interoperability** of broadband wholesale access was achieved with a sector agreement under coordination of the NRA in the *NGA forum*. [Section 4b]

Independence and effectiveness of the NRA

The regulatory discretion, i.e. independence in assessment and judgment, of the NRA as required by the framework was confirmed by the German Bundesverfassungsgericht (BVerfG).

Regulatory decisions on NGA wholesale access were issued timely by the NRA (Bundesnetzagentur), but with potential for improvement with regard to cost modelling. [Section 2]

Implementation of the framework

Germany has not transposed the revised EU telecom framework²⁸ within the deadline set by the EU Legislator (25 May 2011) mostly due to discussions on issues like broadband universal service and specific consumer protection measures. The law was adopted in February 2012 and entered into force in May 2012.

While for several years the number of infringement cases against Germany had illustrated divergent views on critical issues (such as limited discretion of the NRA, non-regulation of new markets, and non-notification of regulatory measures), the situation improved dramatically and 2011 may be seen as a turning point as all pending cases had been closed or were about to be closed by the end of the year.

Spectrum management

With regard to spectrum management, the NRA decided not to redistribute any 900 MHz spectrum leading to the situation that the smallest operator (E-Plus) will not be able to economically roll-out nation-wide mobile broadband networks until the licenses expire

²⁸ Directive 2009/136/EC of the European Parliament and of the Council of 25 November 2009 OJ L 337, 18.12.2009, p.11 and Directive 2009/140/EC of the European Parliament and of the Council of 25 November 2009 OJ L 337, 18.12.2009, p.37

for all four operators (DT, Vodafone, Telefonica O2, E-Plus) in 2016. However, it published its general approach with regard to the reallocation of the usage rights for this band beyond its expiry. An appropriate set up by the NRA of the authorisation procedure concerning this band, including spectrum caps, would be key to prevent a lessening of competition in the German mobile market over the next 10-20 years. [Section 6]

Citizens and consumer protection

Availability of 116 harmonised numbers has been good in Germany, while awareness levels remained very low at 10%. [Section 7.1]

112 is the historic national emergency number, but the level of awareness of 112 as the European emergency number is one of the lowest in the EU. [Section 7.2]

With regard to net neutrality, one mobile operator continued to block VoIP services. [Section 7.3]

There were still cases reporting service interruptions up to several weeks due to technical difficulties when changing the fixed line provider. [Section 7.4]

No major issues on Universal Service were reported. [Section 7.6]

No major issues on e-Privacy were reported. [Section 7.7]

2. NATIONAL REGULATORY AUTHORITIES (NRA)

The regulatory discretion, i.e. independence in assessment and judgment, of the NRA as required by the framework was confirmed by the German Bundesverfassungsgericht (BVerfG).

Regulatory decisions on NGA wholesale access were issued timely by the NRA (Bundesnetzagentur), but with potential for improvement with regard to cost modelling.

The procedural practice concerning the wholesale broadband markets has been improved. For example, the time duration from the finalisation of the market analysis to the adopted remedies concerning the market for wholesale (physical) infrastructure network access has decreased to seven months.

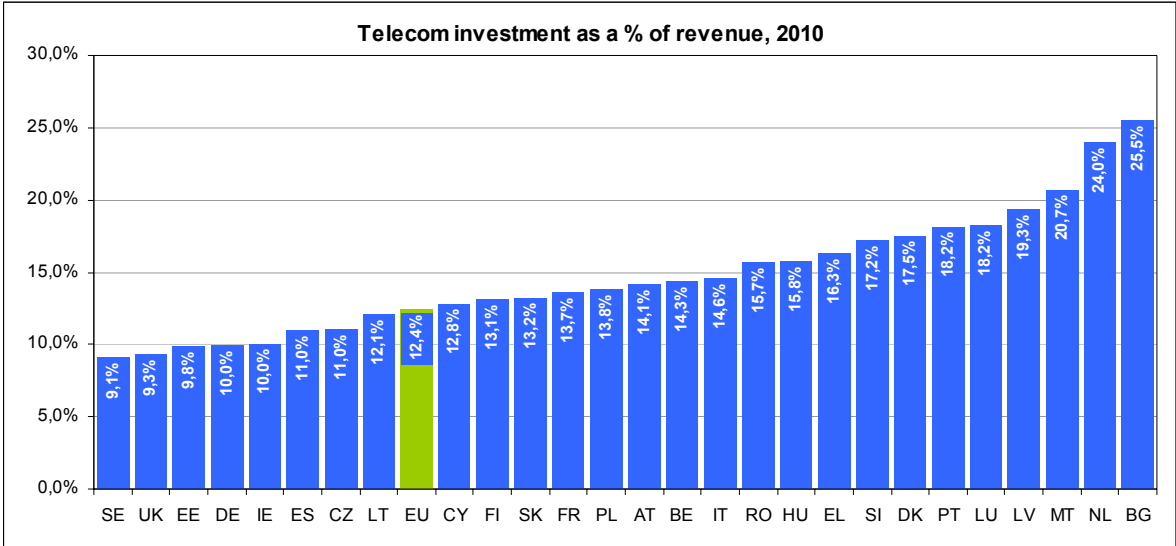
The revised German Telecommunications Act contains new provisions explicitly enabling the NRA to adopt market definition, market analysis and remedies together in one step. This can be seen as a high potential towards more effective regulation based on the latest market situation.

In January the NRA met its legal obligation for cooperation at EU level by notifying the draft measure on MTRs following the infringement procedure²⁹ against Germany for the failure to notify the Commission and other NRAs of the draft regulatory measures determining the level of MTRs and the related cost methodology. However, the regulatory practice concerning mobile termination rates by applying new rates retroactively from the expiry date of the former rates to the final decision in February 2011 again led to regulatory uncertainty among market players.

The German Bundesverfassungsgericht (BVerfG) decided in December 2011 not to retain the constitutional complaints filed by the four German mobile network operators against the NRA's regulatory decisions concerning the market of voice call termination on individual mobile networks. This decision had been pending since summer 2008. It confirms that the NRA has extensive scope of discretion both with reference to market definition and market analysis. It pointed out that the NRA's discretion can be checked by the court only for errors of judgement. This led to the closure of the infringement case against Germany on the extent of the discretion given to national regulatory authorities by the EU telecoms framework³⁰.

3. REVENUES AND INVESTMENTS

Both sector revenues and investment declined between 2009 and 2010 by 2% and 3.3% respectively, but are still at substantial levels at €60 billion and €6 billion respectively. While revenues in the mobile sector increased by 3.3%, revenues in the fixed sector declined by 3.6%. 53% of the total investment was made by competitors. In 2011, the incumbent (Deutsche Telekom, DT) decreased its net debt by 5.1% to €40 billion.



Source : Commission services

²⁹ The infringement procedure (Case 2009/2227) has been closed by the Commission in April 2011
³⁰ The infringement procedure (Case 2004-2221) has been closed by the Commission in March 2012

The total turnover of the German telecommunications sector amounted to €59.2 billion at the end of 2010, a decline of 2% on the previous year. Fixed sector revenue was €29.4 billion (€30.5 billion in 2009), and mobile sector revenue was €24.7 billion (€23.9 billion in 2009).

The total investment in the telecommunications sector was €5.9 billion or 10% of revenues at the end of 2010 representing a decrease by 3.3%. 53% of this total investment has been made by competitors. The total value of investment by fixed telecommunications operators (including the incumbent) was €3.9 billion and by mobile operators was €2 billion.

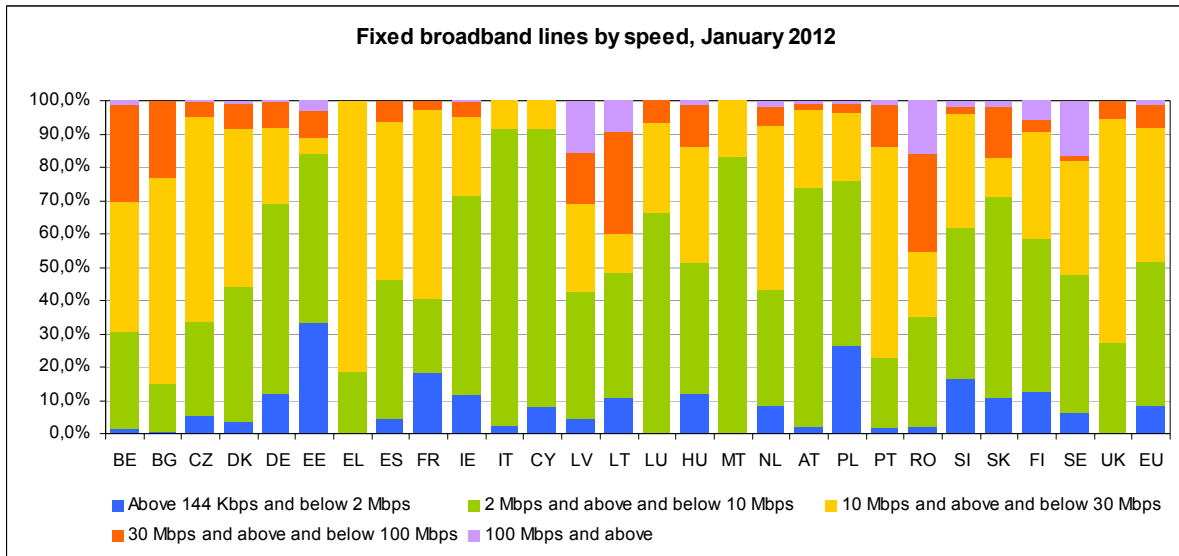
4. BROADBAND

In the fixed broadband market DT still held a share of 45% of fixed broadband lines compared to an EU average of 43%. However its main competitors including cable operators (mainly Kabel Deutschland and Unity Media) gained a significant share of new fixed broadband customers – as reported by market players around 50% of new customers chose cable. With a fixed broadband penetration of 33% Germany holds the fourth best rank compared to an EU average of 28%.

In 2011, good progress was made towards the goals of the 2009 German broadband strategy, which is roughly in line with the DAE coverage targets (there is no take-up target). Coverage of basic broadband in rural areas was enhanced to 93% of households with the roll-out of LTE networks in line with license requirements– putting DE in one of the leading positions in the EU. Cable operators continued to upgrade their fixed line networks to offer data rates of up to 100 Mbps reaching coverage of 52 % of the population as reported by market players. While the speed of more than 30% of broadband connections exceeded 10 Mbps (compared to EU average of 47%), the number of subscriptions to the highest-speed connections of 100 Mbps remained marginal. Even though offers for 100 Mbps lines started in the order of €40 per month, most consumers were not willing to pay €10 more or considered lower data rates as sufficient for current use.

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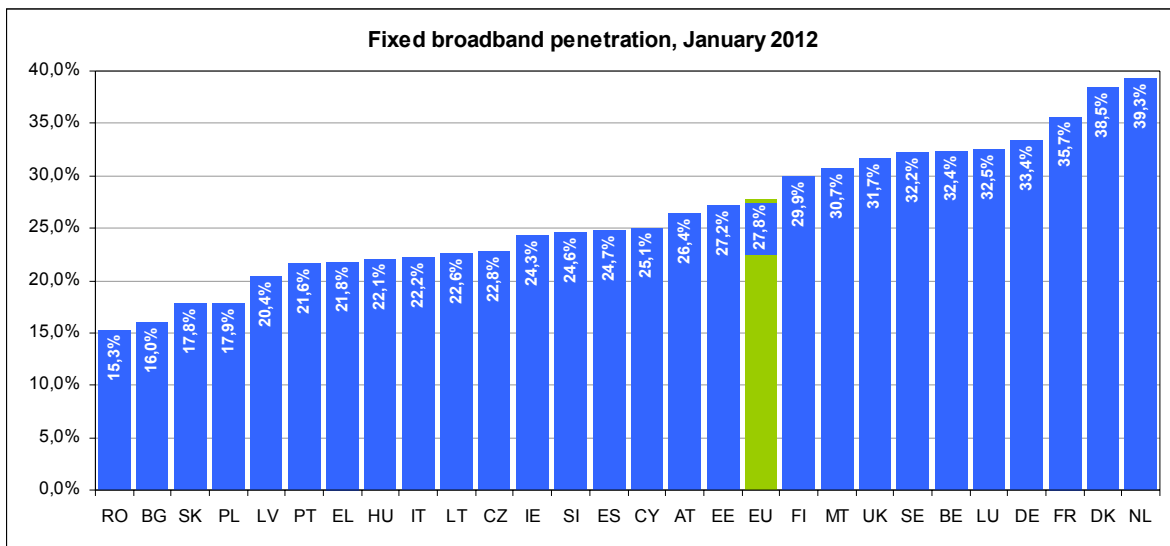
Fixed broadband lines in the EU Member States by speed [start with the penetration graph]



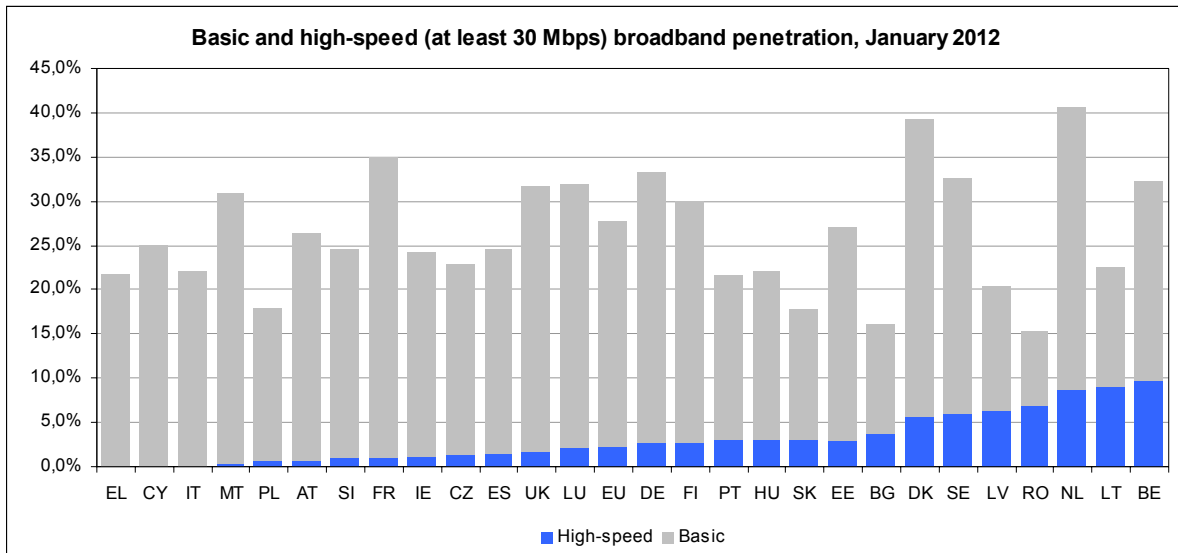
Source: Communications Committee

4.1 Market Situation & Regulatory developments

Growth in broadband access lines continued during 2011 with a growth rate of 4.2%, resulting in 33.3% of the population having a broadband subscription in January 2012, which is above the EU average of 27.8%.



Source: Communications Committee



Source: Communications Committee

The market share of competitors including cable operators continued to increase to 55% in January 2012. In particular, broadband lines based on technologies other than DSL, mainly cable continued to grow during 2011 to a share of 13% of lines as of January 2012. As an alternative to triple-play services over cable, household penetration for triple play services containing IPTV with telecoms operators increased by 42% to 3.6% of the households from mid-2010 to mid-2011.

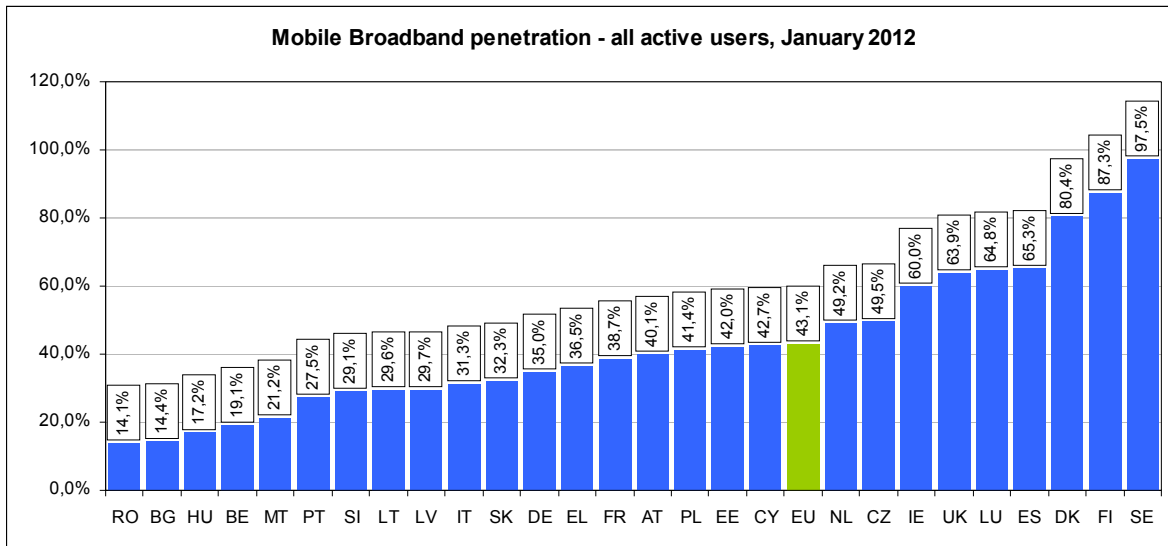
52% of the DSL broadband lines are provided by the incumbent, in addition 6% of the DSL broadband lines are provided by service providers based on resale. 6% of alternative DSL lines are provided based on DSL bitstream and 82% on DSL LLU.

As of January 2012, 159,535 broadband lines were active broadband lines based on FTTH/FTTB, while 671,000 lines (2.5%) were based on VDSL. 5.4% of the broadband lines were triple-play subscriptions, whereas nearly all the rest were dual-play by mid-2011.

FTTH/FTTB deployments were carried-out by several market players. While the incumbent continued to focus on FTTH in most cities, city carriers deployed FTTB in larger ones, whilst several municipalities continued FTTH projects in smaller cities and rural areas. In August the incumbent announced that it will create a subsidiary to deploy a FTTH network with the first objective to cover 160,000 households in ten cities by the end of 2011.

Broadband cable operators continued upgrading their infrastructure with the transmission technology DOCSIS 3.0 with the aim of offering high-speed broadband services with data rates of up to 100 Mbps to 60% of households by the end of 2012.

The three mobile operators that obtained licences for 800 MHz spectrum in 2010 made progress in deploying mobile broadband networks with downlink peak data rates exceeding 50 Mbps based on the LTE standard. In seven federal states the coverage obligations with regard to rural areas were met at the end of 2011, so that all three operators were able to start to freely roll-out LTE networks in these states including in urban areas.



Source: Communications Committee

With regard to regulation, several decisions were adopted concerning the fixed broadband markets.

In March 2011 the NRA adopted the final decision concerning the market for wholesale (physical) infrastructure network access covering market analysis and remedies. Concerning access to the fibre loop no ex-ante price regulation was imposed. Instead fibre access prices are subject to ex-post price control by the NRA.

In the same decision the NRA decided to reintroduce remedies with regard to access to dark fibre, which had been annulled by the Federal Administrative Court in 2010. The NRA improved the justification for the imposition of obligations concerning access to dark fibre representing an important access obligation concerning the market for wholesale (physical) infrastructure network access.

In June 2011, based on the same market analysis, the NRA set the price for the access to the unbundled copper line to €10.08 and for the access to street cabinets to €7.17, which represents a decrease of 1.2% and 9.5% respectively.

The copper access prices are based on current cost accounting and 22% lower than those proposed by the incumbent. Competitors criticised the prices as too high and the cost methodology applied as inadequate.

In May 2011 the NRA defined a reference offer the incumbent has to comply with concerning the access of competitors to cross-connects, the intermediate node between the fibre connection from the core network and the copper line to the households typically installed at the edge of smaller communes to allow for higher data rates.

4.2 National Plans, private & public investments

Progress was made on all four action pillars of the German broadband strategy – the use of synergies in infrastructure roll-out, supporting spectrum policy, growth-oriented regulation, and financial support measures.

The revised German Telecommunications Act contains a number of amendments to facilitate the deployment of broadband infrastructure. These include the possibility for access to passive infrastructure, supporting synergies for the deployment of ducts, symmetric access obligations concerning in-house infrastructure, and access to utilities infrastructure such as energy, water and railway infrastructure. Moreover, the new provisions allow for the upgrade of buildings with NGA infrastructure without the agreement of the owner and for the cost-efficient deployment of fibre in pavements using "microtrenching".

In October the infrastructure atlas managed by the NRA went into the second phase. Authorised users can access information voluntarily provided by more than 500 undertakings on the geographic location of existing infrastructures that may be used for broadband deployment. Beyond these voluntary contributions, the revised German Telecommunications Act introduces obligations to provide information for infrastructure mapping.

In 2011, the federal broadband office, established in 2010 focused on consulting on relevant technologies and funding, spreading of best practice and information on model projects, establishment of guidelines, and networking among relevant actors. In close cooperation with the federal broadband office competence centres at federal state level have been established and extended.

The federal broadband atlas, the database containing detailed information, including maps, on end-user broadband availability on federal and state level, has been further developed. Reports on broadband connectivity are updated twice a year.

The NGA forum, the expert group managed by the NRA and representing the German telecoms sector, agreed on two guidelines with regard to open access to NGA networks. In May a principle document was published concerning technical and operational aspects of wholesale access to NGA networks. In October the NGA forum agreed on a requirement specification of an NGA wholesale access product based on layer-2 bitstream. On this basis a broad variety of different market actors, including local and regional infrastructure providers, can realise NGA services across networks nationwide in a competition environment.

As for the forth action pillar, the Government extended the state-aid framework for passive infrastructure, the so-called duct framework after Commission approval in June. The initial framework had been approved by the Commission in 2010 up to the amount of €600 million. The amendment provides for the possibility to fund passive infrastructure also in areas with existing broadband infrastructure by at least two operators, but where deployment of NGA infrastructure without additional funding is uneconomical.

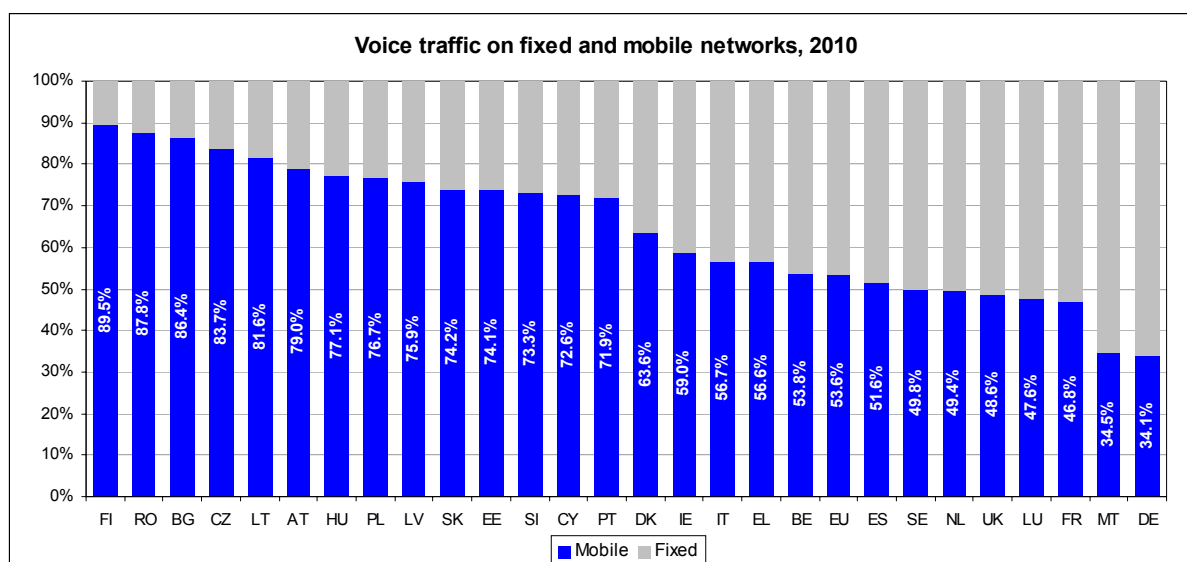
5. VOICE AND OTHER E-COMMUNICATION SERVICES

Competition in the fixed market was slowly growing in 2011 with around 100 players competing. The incumbent's (DT) market share for fixed access lines is still estimated at 65% comparing to the EU average of 70%. However, the market share of competitors (e.g. Vodafone, United Internet and Telefonica) increased by 6.7% mainly because of attractive bundles of voice and DSL broadband services at the level of €20-30 per month.

The main trend in the mobile market was the take-up of mobile data services driven by smart phone and tablet usage and mobile data bundles in the order of €5-10 per GByte data volume. This was reflected in revenues for mobile data (18 % of total mobile revenues comparing to 16% a year ago). The competition situation in the mobile markets stayed rather unchanged. The two largest MNOs (DT and Vodafone), which were the first entrants historically, had a stable revenue market share of each 30%. The remaining market share was divided between the other two MNOs (Telefonica O2 and E-Plus) and service providers acting as resellers (mainly Freenet and Drillisch), which had a significant share in the order of 15%.

5.1 Mobile services

Voice traffic on fixed and mobile networks, 2010



Source: Commission services

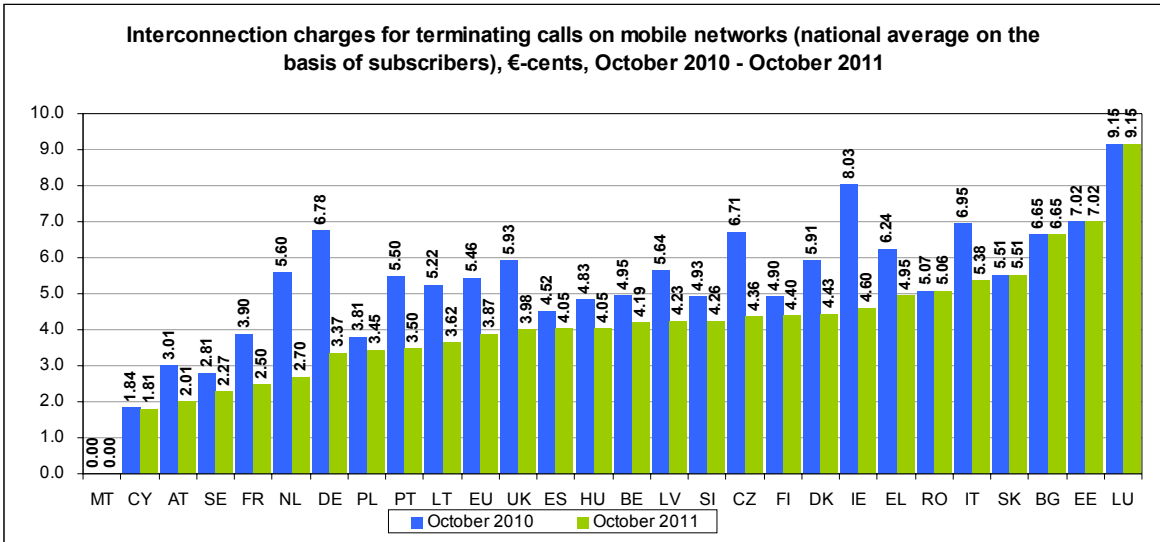
Market situation

The mobile penetration rate increased to 121%³¹ as of October 2011. Compared to October 2010 the proportion of pre-paid mobile users increased to 49%. The mobile broadband penetration rate in terms of active users accessing data services via dedicated devices including smart phones and tablets was 35% and via dedicated data modems, cards or keys was 6.6% in January 2012 (up from 4% in January 2011).

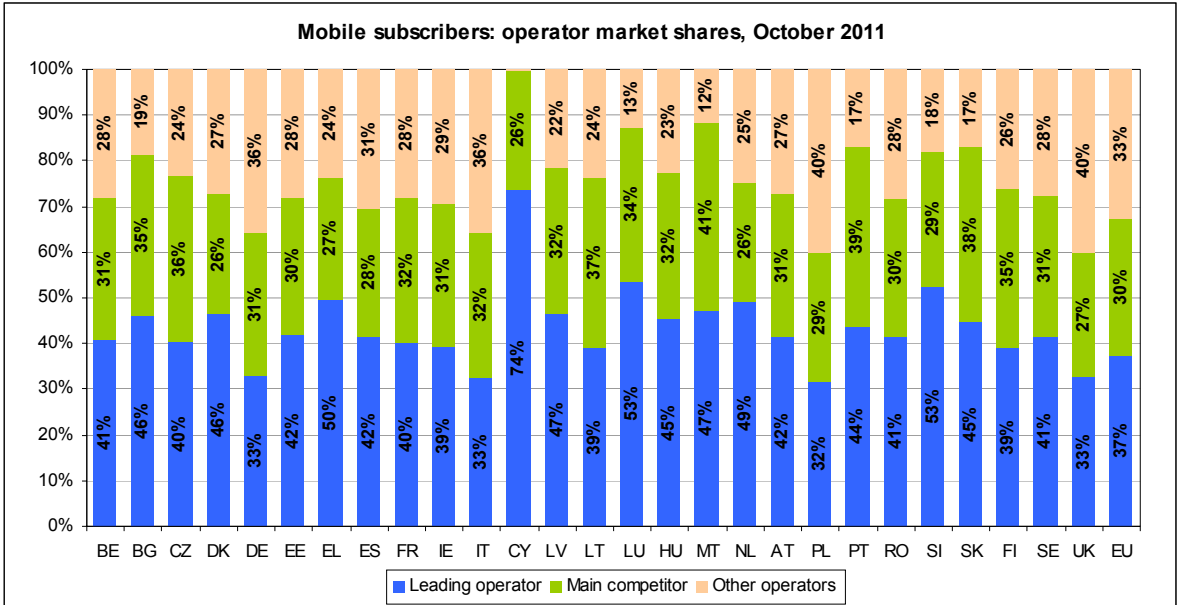
³¹ Based on active subscribers

Mobile sector revenue and was shared between the two larger MNOs with 33% and 31% respectively and the other MNOs, the other service providers and MVNOs with the remaining 36%. The average revenue per user from 2009 has decreased slightly to €191 in 2010.

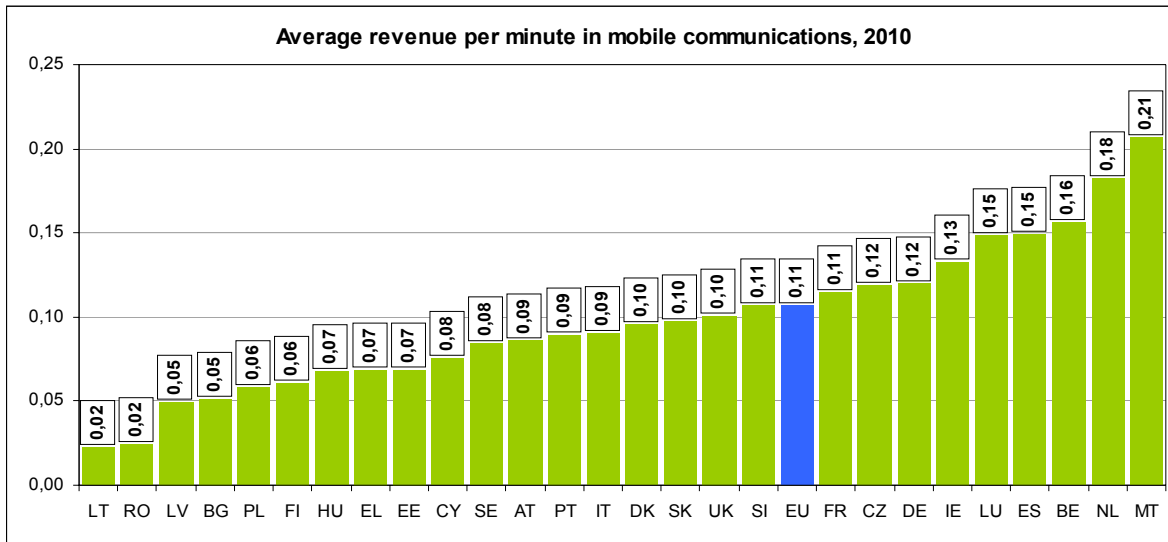
In this period, the average price per minute of mobile calls remained at €0.12. In 2010, the main growth in the mobile sector can be found in mobile data services. It was estimated that the growth in mobile data services accounted for 60% of non-voice revenues and 18% of total mobile revenues.



Source: Commission services



Source: Commission services



Source: Commission services

Regulatory issues

In February 2011, the NRA adopted the final decision setting the regulated call termination rates on mobile networks. The new MTRs are reduced to a range of €3.36 – 3.39 cent/min, representing a reduction of ca. 50%. The cost methodology to determine the rates is based on a fully distributed cost model taking into account the operators' real cost including investment in spectrum and infrastructure.

Roaming Regulation

The provisions of the amended Roaming Regulation were reportedly applied by all operators. Whereas several operators introduced new roaming tariffs in 2011, the average retail roaming prices for voice and SMS were still just below the retail caps.

Considering the currently unregulated data roaming services the average price in Germany for EU-wide data roaming continued to follow a downward trend. German operators introduced new data roaming tariffs in 2011. However, the average price for EU-wide roaming remained above €1.50/MB as of July 2011.

5.2 Fixed

Market situation

As of July 2011, the proportion of telephone subscribers using direct access to an operator other than the incumbent increased from 33% to 36%. The total number of alternative operators offering public voice telephony through direct access was 190, 83 of which used LLU and 17 of which used shared access.

The use of alternative operators' services for national and international calls increased slightly to 40% and 41%, respectively, in the period July 2010 - July 2011.

Regulatory issues

In September 2011 the NRA decided on the remedies concerning the market for fixed call origination and termination by means of which the rates of the incumbent were approved with a decrease in the order of 15% for the most important rates, by relying on benchmarking. They are applied retroactively from 1 July 2011 and valid until 30 November 2012.

Further, in December 2011, the NRA notified the market definition and SMP analysis concerning the markets for terminating segments of leased lines while notification of remedies in abstract form was last undertaken 2007. New charges have been approved preliminarily and are in force since November 2011.

5.3 Broadcasting

Market situation

The overall situation in the retail broadcasting markets remained stable. The number of IPTV subscriptions increased by more than 42% from mid-2010 to mid-2011 and reached a share of 3.6% of all households.

6. SPECTRUM MANAGEMENT

With regard to spectrum management, the NRA decided not to redistribute any 900 MHz spectrum leading to the situation that the smallest operator (E-Plus) will not be able to economically roll-out nation-wide mobile broadband networks until the licenses expire for all four operators (DT, Vodafone, Telefonica O2, E-Plus) in 2016. However, it published its general approach with regard to the reallocation of the usage rights for this band beyond its expiry. An appropriate set up by the NRA of the authorisation procedure concerning this band, including spectrum caps, would be key to prevent a lessening of competition in the German mobile market over the next 10-20 years.

The NRA adopted the final decision concerning the assessment of the competitive situation with regard to the 900 MHz frequency distribution in November 2011. The NRA concluded that the distribution of spectrum following the 800 MHz auction and the opening of the 900 MHz band to systems other than GSM is not likely, at least for the time being, to give rise to competitive distortions in the mobile markets concerned. Against this background the NRA decided not to redistribute any spectrum between the German mobile network operators until the expiry of the 900 MHz spectrum usage rights in 2016. However, the NRA indicated that it is planning to address possible competition issues in the framework of the reallocation of these rights beyond 2016.

In this regard the NRA published in July an outline document for public consultation containing the general framework conditions with regard to the related authorisation procedure, which was intended to ensure legal certainty of the market players in view of the expiry mentioned above. However, no considerations with regard to spectrum caps have been included at this stage. Following this consultation the standard demand assessment procedure concerning this authorisation procedure was launched to clarify the question if there is spectrum scarcity in these bands.

In December the NRA approved the request of the smallest MNO for the right to use its 900 MHz frequencies for UMTS nation-wide. The other three MNOs, which had obtained 800

MHz frequencies in the 2010 spectrum auction, did not request the usage of their 900 MHz frequencies for systems other than GSM.

7. CONSUMER INTEREST

7.1 116 - Harmonised numbers

Availability of 116 harmonised numbers has been good in Germany, while awareness levels remained very low at 10%.

The number 116000 - the hotline for missing children is operational since August 2011 and the number 116117 - non-emergency medical call services has been assigned for operation in 2012³². The remaining harmonised numbers had been assigned and were operational already before 2011. Awareness of 116 numbers in general remained low in Germany at a level of 10%, which at the lower end in comparison to other EU countries.

7.2 112 - Emergency number

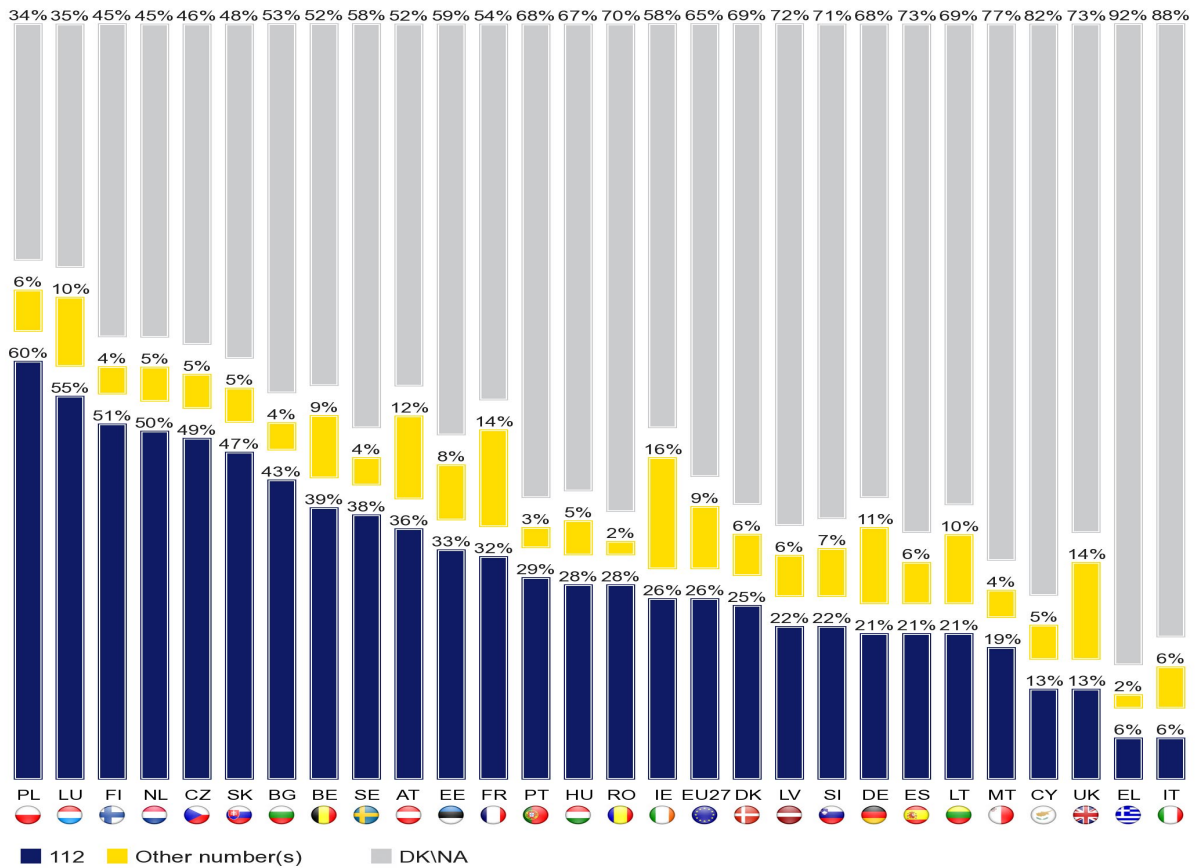
112 is the historic national emergency number, but the level of awareness of 112 as the European emergency number is one of the lowest in the EU.

³² The number 116117 - non-emergency medical call services is operational since April 2012

Awareness of 112 as the EU-wide emergency number:

Can you tell me what telephone number enables you to call emergency services anywhere in the European Union?

(Base: all respondents, % by country)



Source : Eurobarometer 2012

112 has been operational in Germany for many years. Whilst 76% know 112 is a number to call in case of emergency in Germany, only 21% are aware that this emergency number can be called in other Member States. The German authorities have reported in 2011 their intention to introduce in 2012 a push system for immediate transmission of caller location information with the call itself without human intervention necessary.

7.3 Net neutrality & quality of service

With regard to net neutrality, one mobile operator continued to block VoIP services.

During 2011 one MNO has been continuing to technically block voice-over-IP (VoIP) services over its mobile networks, unless the user had subscribed to a special tariff option contractually allowing for this application. This tariff has been justified *inter alia* by potential resource bottlenecks for session identifiers in the case of a high number of parallel data sessions.

In October, in the context of the political debate on Internet policy the "Enquête Commission on Internet and Digital Society" published the first interim report on net neutrality. However, no common position was agreed by the members. Instead different positions that could not reach a majority were outlined.

The revised German Telecommunications Act contains general provisions on net neutrality intended to transpose the new requirements set out in the telecom rules. In addition, the new provisions enable the ministry of economics to adopt ordinances setting the general approach towards net neutrality.

7.4 Consumer complaints, tariff transparency

There were still cases reporting service interruptions up to several weeks due to technical difficulties when changing the fixed line provider.

Consumer complaints in 2011 were focused on contractual relations, billing, change of provider, and unsolicited calls. Certain complaints have also been directed to the Commission. The number of complaints referring to difficulties when changing a fixed or broadband provider has increased during certain periods in 2011 inter alia due to technical difficulties and weather conditions. Again periods of up to several weeks and even months without telephony services or a broadband connection have been reported. The NRA is still following-up on individual cases to reduce any period of interruption to a minimum.

The revised German Telecommunications Act contains new rules intended to accelerate the change of provider inter alia by limiting service interruption and porting of numbers to one working day and providing for compensation for end customers in case of delays in the change of provider. Additionally BNetzA has prepared further measures in order to solve quickly complaints where – in spite of the new legal provisions – service interruptions occur. For this purpose all active providers shall establish a single contact point for switching providers to which BNetzA can forward customer complaints for fast solutions. It is planned to lift this obligation after the revised telecommunications act will have entered into force.

7.5 Number portability

Number portability in mobile and fixed networks was usually done within the one-day requirement. The number of transactions for change of provider was exceeding 4 million with regard to fixed numbers and doubled with regard to mobile numbers to nearly 1 million.

In 2011, the average period for having a phone number ported and operational was three working days, both for fixed and mobile numbers. However, where notification of contract cancellation is timely, consumers normally have their numbers ported to their new provider without any delay. No wholesale charges are applied for porting fixed numbers and the retail price charged by the incumbent operator is no longer regulated.

7.6 Universal service

No major issues on Universal Service were reported.

No undertaking has been designated for the provision of universal service. The authorities have not intervened as they consider that the market provides the necessary services.

In the context of the review of the German Telecommunications Act a political discussion on extending the scope of Universal Service to access to broadband connections took place. However, proposed provisions to impose obligations to provide a nationwide broadband service with a certain speed have not been retained.

7.7 ePrivacy

No major issues on e-Privacy were reported.

In the context of transposition of the new framework, the German co-legislators concluded that an amendment of the German Media law is not necessary to comply with the provisions on Cookies in the e-Privacy Directive. Further, with regard to the retention of traffic data by telecoms providers for billing purposes a political discussion took place, but no amendments of the German law were made in this regard.

In December 2011 the law on blocking access to child pornography content via communication networks (Zugangerschwerungsgesetz) has been repealed.

The revised German Telecommunications Act contains new rules on the notification of a personal data breach and on the notification of a breach of security or loss of integrity that has had a significant impact on the operation of networks or services.



EUROPEAN COMMISSION
Information Society and Media Directorate-General
Electronic Communications Policy
Implementation of Regulatory Framework

18 June 2012

DENMARK

2011

Telecommunication Market and Regulatory Developments

22. DENMARK

23. 1.MAIN MARKET & REGULATORY DEVELOPMENTS:

24. BEST PRACTICES AND CHALLENGES

Development of the sector

While the total **revenue** generated by the Danish electronic sector remained stable in 2011, overall **investments** decreased and the annual growth receded by 0.4%. The investment over revenue ratio in the Danish telecom sector for 2011 was 17.5%, well above the EU average of 12.4% and the investment growth decreased by 14.6%, well below the 3.2% EU average. (*Section 3*)

Regarding the **broadband market**, Denmark is one of the countries with the highest broadband penetration in the EU. The fixed broadband penetration rate has increased in comparison with 2011 and places Denmark in second position in the EU. As of January 2012, TDC had a 60% market share in broadband lines, in comparison with 62.3% in January 2011. Mobile broadband penetration has slightly increased. (*Section 4.1*)

The voice traffic on **fixed market** has decreased from 41% of the total voice volume in 2009 to 36.4% in 2010. The incumbent's (TDC) market share remains robust with a small decrease from 67.2% in December 2009 to 67% in December 2010 (all types of calls by traffic volume). Alternative operators continued to express their concerns about the incumbent's dominance in the fixed market. Regarding the **mobile market**, the main mobile network operator's market share amounted to 46.3% in 2011, while its main competitor's amounted to 26.2% and other competitors' equalled to 27.5%. The availability of bundled offers is reported to have stimulated competition on the Danish market. (*Section 5*)

Regarding **number portability**, the obligation to port numbers in one day is respected and the porting process has been facilitated in practice by an agreement within the operators. The total accumulated volume of ported mobile numbers, which was 354.968 in 2010, was 482.415 in 2011. The total accumulated volume of ported fixed number increased from 133.212 to 169.934 over the same period. (*Section 7.5*)

Progress in broadband deployment and take-up

At the end of 2011, Denmark was moving towards achieving the DAE target aiming at securing a basic broadband connection (in the order of 2 Mbps) for all EU households by 2013. The broadband strategy announced in June 2010 is carried on by the new government which was appointed in October 2011. It aims at achieving a coverage objective of 100 Mbps or more per all households or enterprises by 2020. Market players are intensifying their efforts to reach the 2020 coverage objective of 100 Mbps or more per all households or enterprises. Although the fixed broadband penetration rate has slightly decreased in 2011, it remains, together with the mobile broadband penetration

rate, one of the highest in Europe. (Section 4.2)

Independence and effectiveness of the NRA

The new government which was appointed following the elections on 15 September 2011 decided to discontinue the Danish NRA, *IT- og Telestyrelsen* (NITA), and to restructure its responsibilities. A new agency called the Danish Business Authority (DBA or "*Erhvervsstyrelsen*") was created as of 1 January 2012. (Section 2)

Implementation of the framework

In order to transpose the revised regulatory framework, the Electronic Communications Act or "*Lov om elektroniske kommunikationsnet og -tjenester*" (Law on Electronic Communications networks and services) was adopted on 3 March 2011, and entered into force on 25 May 2011, within the deadline set by the EU legislator. Secondary legislation was subsequently adopted, thereby completing the process by 25 May 2011. Only the transposition of Article 5(3) of the ePrivacy Directive was delayed following a public consultation on the Executive Order on Information and Consent Required in Case of Storing or Accessing Information in End-User Terminal Equipment which was finally adopted on 9 December 2011.

The Commission opened infringement proceedings in January 2011 on the financing of additional mandatory universal services, such as maritime emergency services in Denmark and Greenland, ISDN, and leased lines, which are not within the scope of Universal Service as defined in the Universal Service Directive (USD). The Commission expressed its concerns regarding the compatibility of the Danish legislation with the EU rules in a reasoned opinion sent to the Danish authorities in September 2011. A constructive dialogue followed and in January 2012 the Danish authorities provided the Commission with a draft legislation aiming at addressing its concerns. The Act entered into force by 1 April 2012.

Spectrum management

With regard to spectrum management, the Danish Frequency Plan was amended in 2011 to implement various European Commission decisions. Additional demand for spectrum for mobile use is expected in the coming years in Denmark. (Section 6)

Citizens and consumer protection

Availability of 116 harmonised numbers has been good in Denmark, while awareness levels remained very low at only 1%. (Section 7.1) 112 is the historic national emergency number and the level of awareness of 112 as the European emergency number stands at 50%. (Section 7.2) The number of complaints received in 2011 by the private Telecommunications Complaint Board is comparable to the number of complaints received in 2010. (Section 7.4) With regard to Net Neutrality, consumer protections associations and representative of the electronic communication sector established a Net Neutrality forum and adopted in this context a Code of Practice in September 2011. (Section 7.3) Regarding Universal Service, the Commission opened infringement proceedings in January 2011 on the financing of additional mandatory universal services. A constructive dialogue followed and in January 2012 the Danish authorities provided the Commission with a draft legislation aiming at addressing its concerns. The Act

entered into force by 1 April 2012. (*Section 7.6*) No major issues on e-Privacy were reported (*Section 7.7*).

25. 2. NATIONAL REGULATORY AUTHORITIES

The new government which was appointed following the elections on 15 September 2011 decided to discontinue the Danish NRA, *IT- og Telestyrelsen* (NITA), and to restructure its responsibilities. A new agency called the Danish Business Authority (DBA or "*Erhvervsstyrelsen*") was created as of 1 January 2012.

The closure of NITA followed a Resolution by Her Majesty the Queen of 3 October 2011, according to which NITA's responsibilities were transferred to four ministries, namely the Ministry of Business and Growth (telecom and internet regulation, as well as the administration of frequencies), the Ministry of Defence (protection of critical IT infrastructure, as well as the state's notification service for internet threats, GovCert), the Ministry of Finance (IT policy, including cases concerning digital communication with businesses and the public) and the Ministry of Economic Affairs and the Interior (certain tasks concerning IT modernisation and conditions related to digitalisation).

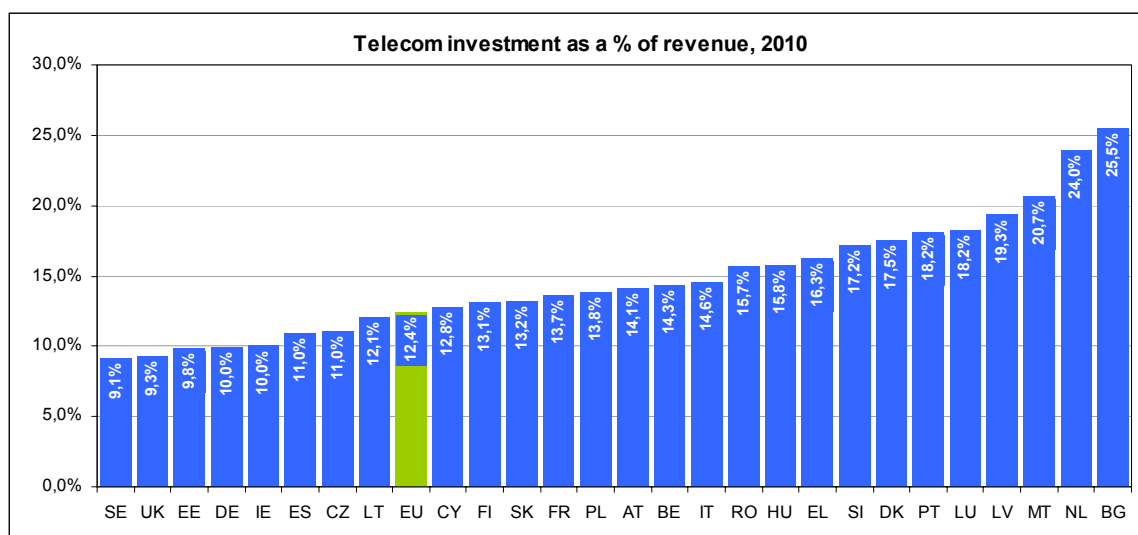
Within the Ministry of Business and Growth, a new agency called the Danish Business Authority ("*Erhvervsstyrelsen*") was created as of 1 January 2012. During the transitory period, the tasks of the NRA were performed by the Danish Telecommunications Authority ("*Den danske telemyndighed*").

This restructuring was unexpected for the sector and generally described as little transparent. The former head of NITA was finally appointed Director General Telecom in the new structure. The Commission is monitoring this issue.

The Danish NRA issued five decisions on substance concerning dispute settlement proceedings in 2011.

26. 3. REVENUES AND INVESTMENTS

While the total **revenue** generated by the Danish electronic sector remained stable in 2011, overall **investments** decreased and the annual growth receded by 0.4%. The investment over revenue ratio in the Danish telecom sector for 2011 was 17.5%, well above the EU average of 12.4% and the investment growth decreased by 14.6%, well below the 3.2% EU average.



Source: Commission services

The total revenue generated by the Danish electronic communications sector in 2010 equalled to €5.446 billion, almost the same as the revenues generated during the preceding year. (5.466 in 2009)

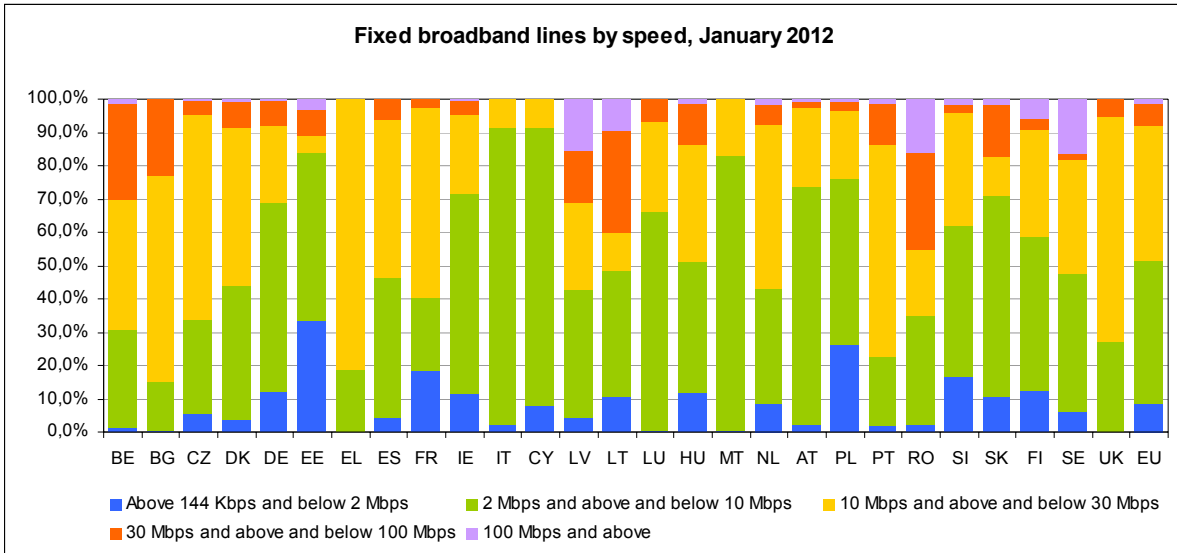
Between 2009 and 2010, the growth in revenues generated by the electronic communications sector decreased by 0.4%.

Overall investments in the electronic communications sector totalled €956 million which represents a significant decrease in comparison with the preceding year (€1.119 billion). The investment over revenue ratio in the Danish telecom sector for 2011 was 17.5%, well above the EU average of 12.4% and the investment growth decreased by 14.6%, well below the 3.2% EU average increase.

27. 4. BROADBAND

Regarding the **broadband market**, Denmark is one of the countries with the highest broadband penetration in the EU. The fixed broadband penetration rate has increased in comparison with 2011 and places Denmark in second position in the EU. As of January 2012, TDC had a 60% market share in broadband lines, in comparison with 62.3% in January 2011. Mobile broadband penetration has slightly increased.

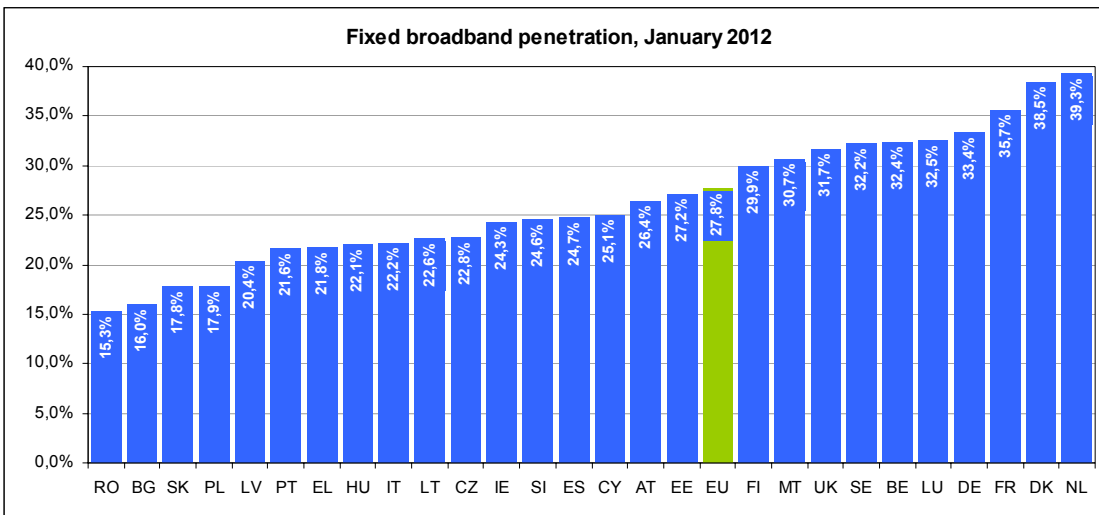
At the end of 2011, Denmark was moving towards achieving the DAE target aiming at securing a basic broadband connection (in the order of 2 Mbps) for all EU households by 2013. The broadband strategy announced in June 2010 is carried on by the new government which was appointed in October 2011. It aims at achieving a coverage objective of 100 Mbps or more per all households or enterprises by 2020. Market players are intensifying their efforts to reach the 2020 coverage objective of 100 Mbps or more per all households or enterprises. Although the fixed broadband penetration rate has slightly decreased in 2011, it remains, together with the mobile broadband penetration rate, one of the highest in Europe.



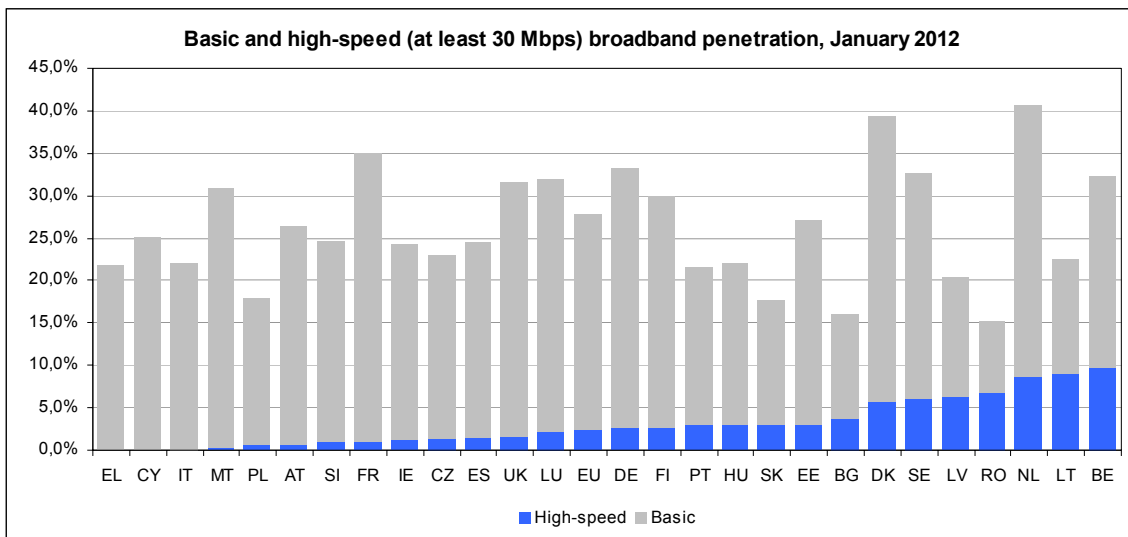
Source: Communications Committee

4.1 Market situation and regulatory developments

While Denmark is still one of the countries with the highest broadband penetration in the EU, the fixed broadband penetration rate has increased in comparison with 2011. It stands now at 39.3% in January 2012, while it stood at 38.6% in January 2011. The EU average, which stands at 27.7% in January 2012, places Denmark in second position in the EU. Denmark increased the total number of broadband lines to 2.185 million in January 2012 compared to 2.138 million in January 2011. As of January 2012, the incumbent had a 60% market share in broadband lines, in comparison with 62.3% in January 2011. Mobile broadband penetration has slightly increased. While the penetration rate was 15.2% in January 2011 (calculated on the basis of dedicated service cards/modems/keys only), it stands now at 16.4% in January 2012, still significantly higher than the EU average (8.1% in January 2012). The mobile broadband penetration rate for dedicated devices was 80.4% in January 2012 well above the EU average of 43.1%. The number of active users of mobile broadband in Denmark amounted to 4.471 million in January 2012.



Source: Communications Committee

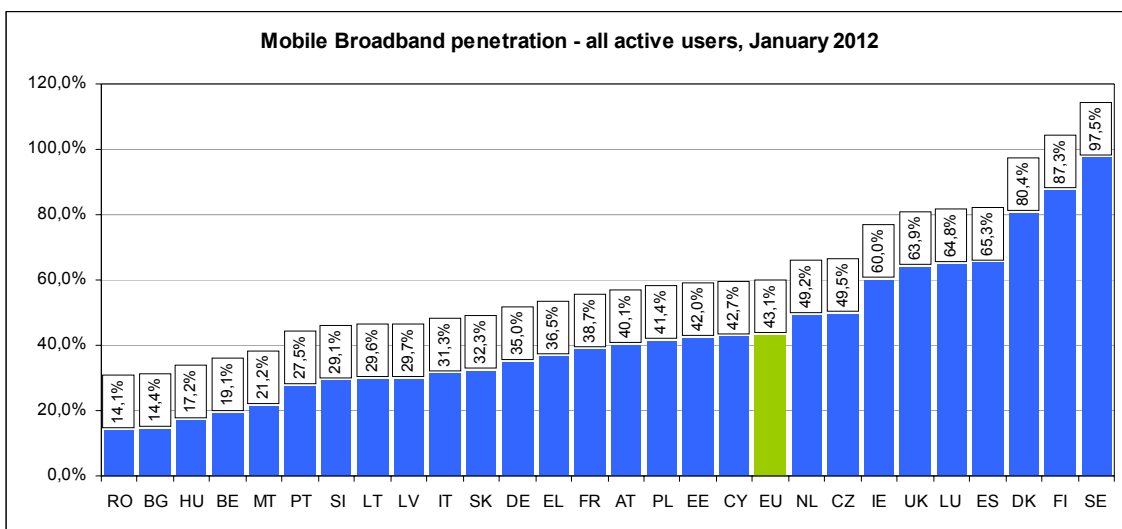


Source: Communications Committee

In terms of retail prices, the Danish regulator reports that prices have dropped significantly in the last ten years: 90% for a 2 Mbps fixed broadband connection between 2001 and 2011, 32% for 10 and 20 Mbps fixed broadband connections between 2009 and 2011, and 51% for mobile broadband connections with an advertised speed of at least 3 Mbps and an included data consumption of 5 GB between 2010 and 2011.

In January 2012, the DSL lines shares in fixed broadband represent 55%, which is below the EU average of 76%, and the cable broadband lines share represented 26% in January 2012, above the EU average of 17%.

In terms of speed, 29.6% of the lines delivered 2 Mbps and above, 52.9% of the lines delivered 10 Mbps and above, 13.1% delivered 30 Mbps and above and 1.5% delivered 100 Mbps and above in January 2012.



Source: Communications Committee

In April 2011, the Danish NRA set prices for wholesale access to broadband products over the incumbent's fibre and cable television networks. 2012 charges for unbundled access to copper loops and bitstream services as well as wholesale access to broadband products over the incumbent's fibre and cable television networks were consulted at EU level in November 2011.

The third review of the wholesale broadband access markets is foreseen in the first semester of 2012.

The National Competition Authority (NCA) is analysing a complaint filed by one operator regarding the pricing of multicast, alleging that it is very difficult to provide IPTV due to the high multicast prices. Currently, the incumbent and one other operator offer triple play (voice, broadband and IPTV) over the copper network in Denmark. The content provider owned by the energy companies also provides IPTV, but with a very small market share.

The complaint regarding the prices set for broadband lines that are supplied to the Danish Government as part of a public call for tender, alleging a margin squeeze or predatory pricing was not yet decided by the NCA at the end of the reporting period.

The mandatory membership and payment to local cable TV associations as mentioned in previous reports is still considered by most operators to constitute a significant barrier to fibre roll-out, and to competition. An amendment to the law was adopted in September 2011. According to the new text, Danish local authorities may not impose mandatory membership and payment to local cable TV associations for housings built after September 2011. Any imposed membership that existed before September 2011 remains in force, however. In January 2012 Denmark approved a proposal according to which the compulsory affiliation to cable distribution networks in local planning guidelines will cease completely three years after the amendment, which is expected to be put before the parliament in the last half of 2012, enters into force. The current proposal does not offer the opportunity for earlier withdrawal.

The Danish NRA is having constructive ongoing dialogue with all parties involved in the deployment of digital infrastructure, in order to promote rights of way and facility sharing.

4.2 National Plans, private & public investments

The Danish broadband strategy is more ambitious than the target set out in the Digital Agenda for Europe (DAE), and aims at achieving a coverage objective of 100 Mbps or more per all households or enterprises by 2020. This ambitious plan was announced by the government on 1 June 2010. No policy change seems to be expected following the appointment of the new government in October 2011. The Danish regulator monitors broadband development in an annual report.

Privatised electricity utility companies have been intensifying their efforts to invest in the roll-out of FTTH (Fibre to the Home) networks, with around 700 000 homes reported passed

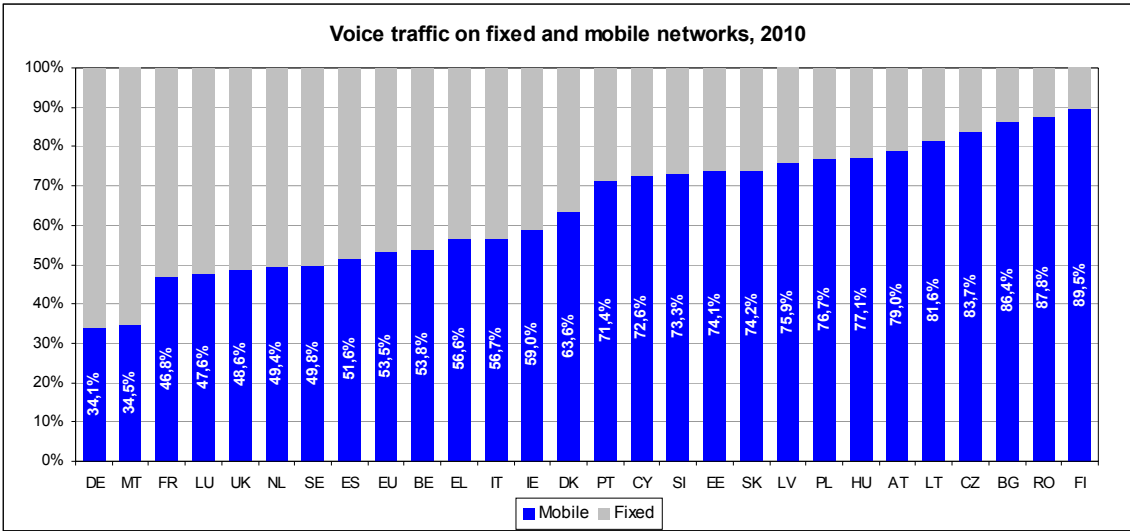
in 2011 out of a total of 2.5 million of households in Denmark. The efforts originally focused on densely populated areas and the deployment in metropolitan areas is due to start in the near future. The DAE target of internet speed for all at 30 Mbps or above is being delivered as a minimum speed by the Danish electricity utilities companies over fibre to the home.

In addition, the incumbent continues its strategy of upgrading its network for VDSL, and of rolling out fibre to the street cabinet, in combination with the fibre network acquired due to the take-over of a fibre operator in the Copenhagen area in 2009.

28. 5. VOICE AND OTHER ECOMMUNICATIONS SERVICES

The voice traffic on **fixed market** has decreased from 41% of the total voice volume in 2009 to 36.4% in 2010. The incumbent's (TDC) market share remains robust with a small decrease from 67.2% in December 2009 to 67% in December 2010 (all types of calls by traffic volume). Alternative operators continued to express their concerns about the incumbent's dominance in the fixed market. Regarding the **mobile market**, the main mobile network operator's market share amounted to 46.3% in 2011, while its main competitor's amounted to 26.2% and other competitors' equalled to 27.5%. The availability of bundled offers is reported to have stimulated competition on the Danish market.

5.1 Mobile services



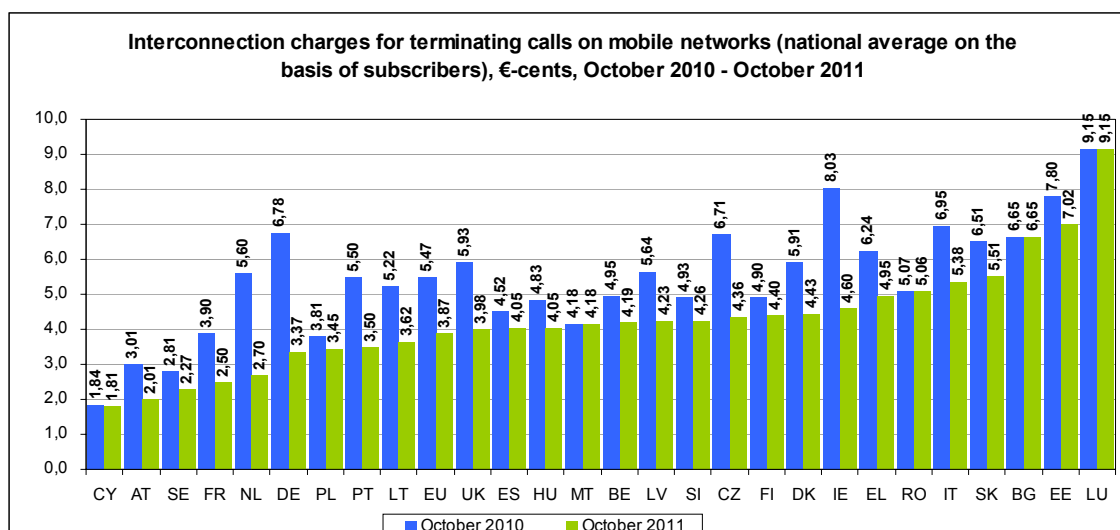
Source: Commission services

Market situation

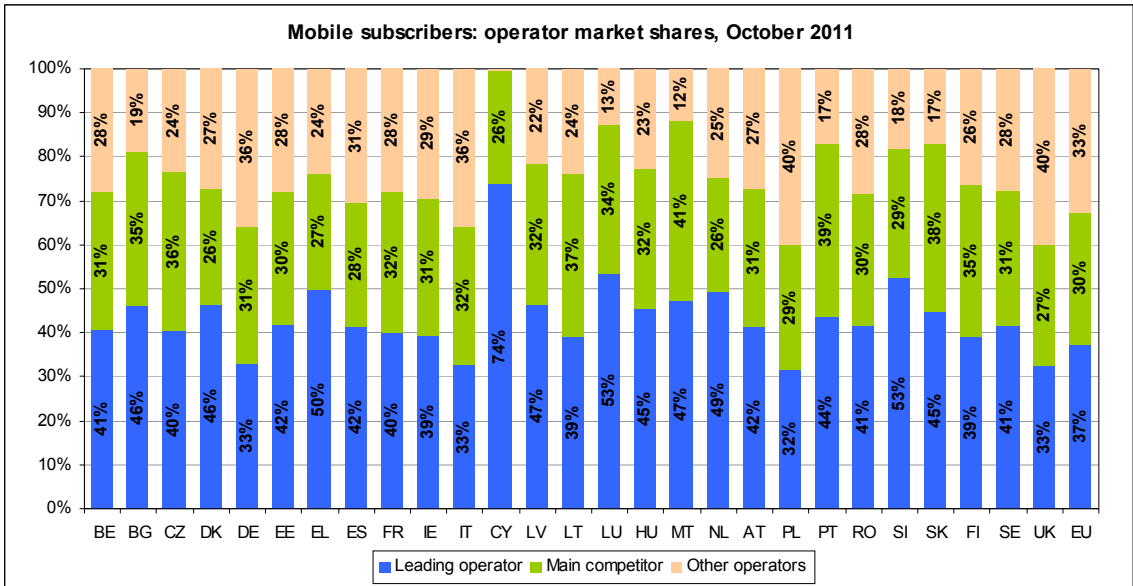
The mobile telephony revenues increased from €2.221 billion in 2009 to €2.273 billion in 2010. The average revenue per user in 2010 amounted to €240, slightly above the EU average of 221.

The mobile penetration rate, which stood at 146.6% as of October 2011 in comparison with 140.8% in 2010, is still well above the EU-27 average of 122.7%. The total number of subscriptions slightly increased in 2011 with a total of 8.150 million in October 2011 compared with 7.829 million in 2010. The volume of traffic on mobile networks equalled 63.6% in 2010. Pre-paid users still represent a small share of the market with 10%. The main mobile network operator's market share amounted to 46.3% in 2011, while its main competitor's amounted to 26.2% and other competitors' equalled to 27.5%.

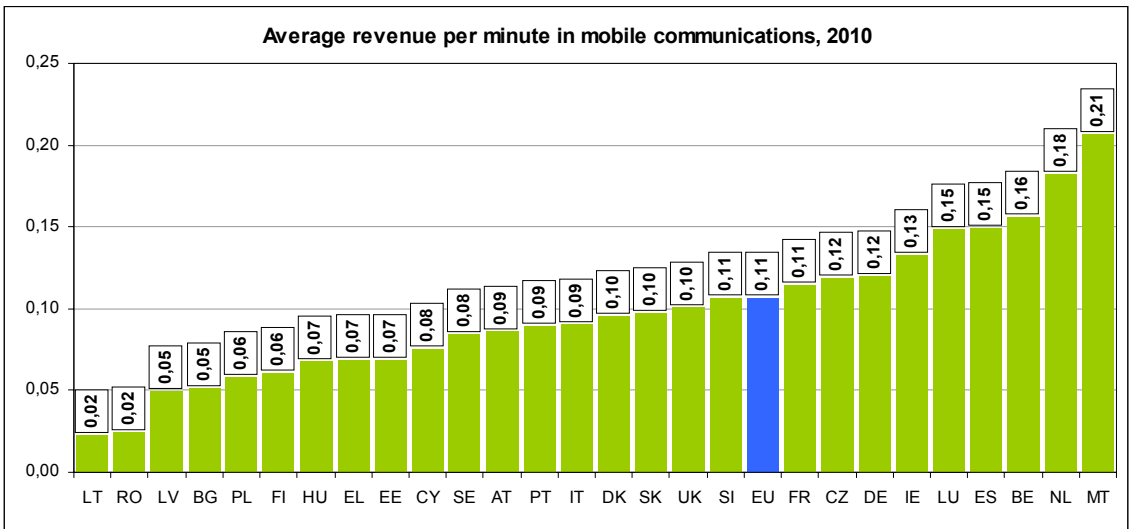
In late 2011, two main operators started offering LTE to end-users in geographically limited areas. The incumbent acquired a reseller in the mobile market. The availability of bundled offers is reported to have stimulated competition on the Danish market. According to the Danish regulator data traffic from mobile devices rose 73.8% in 2011. In particular, data traffic from cell phones almost quadrupled in the same period.



Source: Commission services



Source: Commission services



Source: Commission services

Regulatory issues

Symmetric regulation on voice mobile termination rates was introduced in May 2011, with a rate of 0.33 DKK per minute. Until May 2011, the three main mobile operators had a rate of 0.44 DKK per minute while one alternative operator had a rate of 0.51 DKK per minute. In November 2011, the rates for 2012 were set. The current level of 0.33 DKK per minute will be maintained until March 2012, when the price will be reduced to 0.23 DKK per minute. In 2011, the Danish NRA regulated also the SMS termination services on the individual mobile networks of the operators and designates them as having a significant market power (SMP) in their respective markets. The Decision imposed accordingly a set of remedies, including price control which applies only to those operators which compete on the Danish retail market, while termination tariffs between Danish and operators that are not competing on the Danish retail market are based on free commercial agreements. The Decision imposed a rate

of 0.16 DKK per SMS as of August 2011 and of 0.12 DKK per SMS as of March 2012. The Commission expressed its concerns as to the limited scope of the regulated SMS termination prices, which were applicable only to operators competing on the Danish retail market, and therefore may not be in line with EU principles, namely the non-discrimination principle. In April 2012, the Danish NRA decided to issue new draft measures in order to amend the price control obligation. Consequently, the regulated SMS termination prices are also going to apply to operators not active on the Danish retail market. In accordance with the Framework Directive, a public consultation on the new draft measures was launched on 10 April 2012

Roaming Regulation

While alternative roaming packages have developed and retail prices for data roaming slightly decreased in 2011, average roaming prices paid by consumers remain relatively high according to consumer's association. The operators are reported to comply with the Roaming Regulation. The largest mobile operators have implemented bill shock measures for roaming outside the EU.

5.2 Fixed

Market situation

The fixed telephony revenues decreased from €1.807 billion in 2009 to €1.699 billion in 2010. The voice traffic on fixed networks has decreased from 41% of the total voice volume in 2009 to 36.4% in 2010.

The incumbent's market share remains robust with a small decrease from 67.2% in December 2009 to 67% in December 2010 (all types of calls by traffic volume). Alternative operators continued to express their concerns about the incumbent's dominance in the fixed market and stressed that the decline in its market share has been very small in the preceding years.

The total of subscribers using an alternative operator for direct access in July 2011 amounted to 16.3%. The market share by traffic volume of VoIP operators increased from 21% in 2009 to 28% in December 2010.

The interconnection charges for terminating calls on the incumbent's fixed network are well above the EU average of 0.46 €cent per minute, with 0.24 €cent per minute in October 2011, while it was 0.25 in October 2010, which places Denmark in second position in the EU.

The penetration rate for bundled offers (subscriptions/population) has increased from 11.4% in 2010 to 13.8% in July 2011 which represents a negative growth of 64%.

Regulatory issues

The market for call termination on individual public telephone networks provided at a fixed location (market 3) was regulated with a new decision in January 2011, and symmetric prices were imposed on four out of 20 providers which were found to have significant market power. Three operators complained to the Telecommunications Complaints Board which stated that the Danish regulator should assess whether the current infrastructure in the fixed market (and to some degree the transit market) would not justify the setting of asymmetrical termination rates. Against that background, the Danish Business Authority is preparing new market decisions for this market ³³.

5.3 Broadcasting

Market situation

Cable is still the leading television platform in Denmark. The household penetration of terrestrial TV, which following the digital switchover in 2009 is fully digitalized, slightly increased in 2011 with a 70.7% rate, in comparison with 69.5% in 2010. IPTV has significantly increased with a penetration rate of 3.2% in 2011, in comparison with 0.8% in 2010 while fewer Danish subscribers were using satellite TV during 2011 (9.2% of TV households in July 2011 compared to 10.2% a year earlier). The revenues from fixed and mobile IPTV (Pay-TV) increased from €53 million in 2009 to €89 millions in 2010.

The NCA published a report on the marketing of TV channels to end-users on the Danish market. It concluded that regulation could be a solution to enhance competition; since market players do not seem to have incentives to implement an *à la carte* system but prefer stick to the current sale of bundled offers.

29. 6. SPECTRUM MANAGEMENT

The Danish Frequency Plan was amended in 2011 to implement various European Commission decisions. Additional demand for spectrum for mobile use is expected in the coming years in Denmark.

The Danish Frequency Plan was amended in September 2011 inter alia to implement Commission Decision 2011/485/EU of 29 July 2011 amending Decision 2005/50/EC on the harmonisation of the 24 GHz range radio spectrum band for the time-limited use by automotive short-range radar equipment in the Community.

³³ Draft decisions were subject to public consultation from February until April 2012.

In March 2011, service and technology neutral use was inserted in the 410-430 MHz, 24.5-26.5 GHz and 40.5-43.5 GHz bands.

A report published in 2011 estimates that additional demand of at least 600 MHz for wireless broadband services is foreseen in Denmark by 2025. A public consultation following this report showed that the mobile network operators and other representatives of the Danish electronic communication industry agreed on this future need, while broadcasters found it premature to identify the exact need for spectrum and what particular frequency bands would be required. The Danish Frequency Strategy has identified additional 900 MHz of spectrum that could be considered suitable for broadband services in Denmark by 2020 and adopts an internationally coordinated approach towards releasing the necessary spectrum.

The 800 MHz band will be released in 5 blocks – one block of 2x10 MHz and four blocks of 2x5 MHz – in an auction in June 2012. A coverage obligation will be imposed for selected postcodes of 3 coverage areas, in order to enable the coverage obligation to be met by a single licensee in each coverage area. The license duration is 22 years so that its expiry corresponds to that of the 900 MHz band (in 2034).

A joint venture, aiming at sharing a radio access in order to get better coverage, is contemplated by two operators. The Multi-Operator Core Network which would be created in this way, and which would allow frequency pooling, has been approved by the NCA on the condition that the two operators in the joint venture are not allowed to bid as separate units in future spectrum auctions including the 800 MHz auction.

Regarding Mobile Satellite Systems (MSS), the general rules on enforcement of conditions and regulations laid down by the Act n° 475 of 12 June 2009 on Radio Frequencies apply. The possibility for the two selected MSS operators to provide services is laid down in the Danish Frequency Plan. An authorisation was issued to one of the two selected MSS operators June 2010 for MSS satellite Component and Terminals.

30. 7. CONSUMER INTEREST

7.1. 116 - Harmonised numbers for services of social value

Availability of 116 harmonised numbers has been good in Denmark, while awareness levels remained very low at only 1%.

The 116 000, 116 111 and 116 006 numbers have been assigned by the Danish NRA to two operators, one of which is TDC. Both the 116 000 number, which is a hotline for missing children, and the 116 111 number, which is a child helpline, are operational. However, the

116 006 number, which is a helpline for victims of crime, is not yet operational, and the short number has been transferred to TDC.

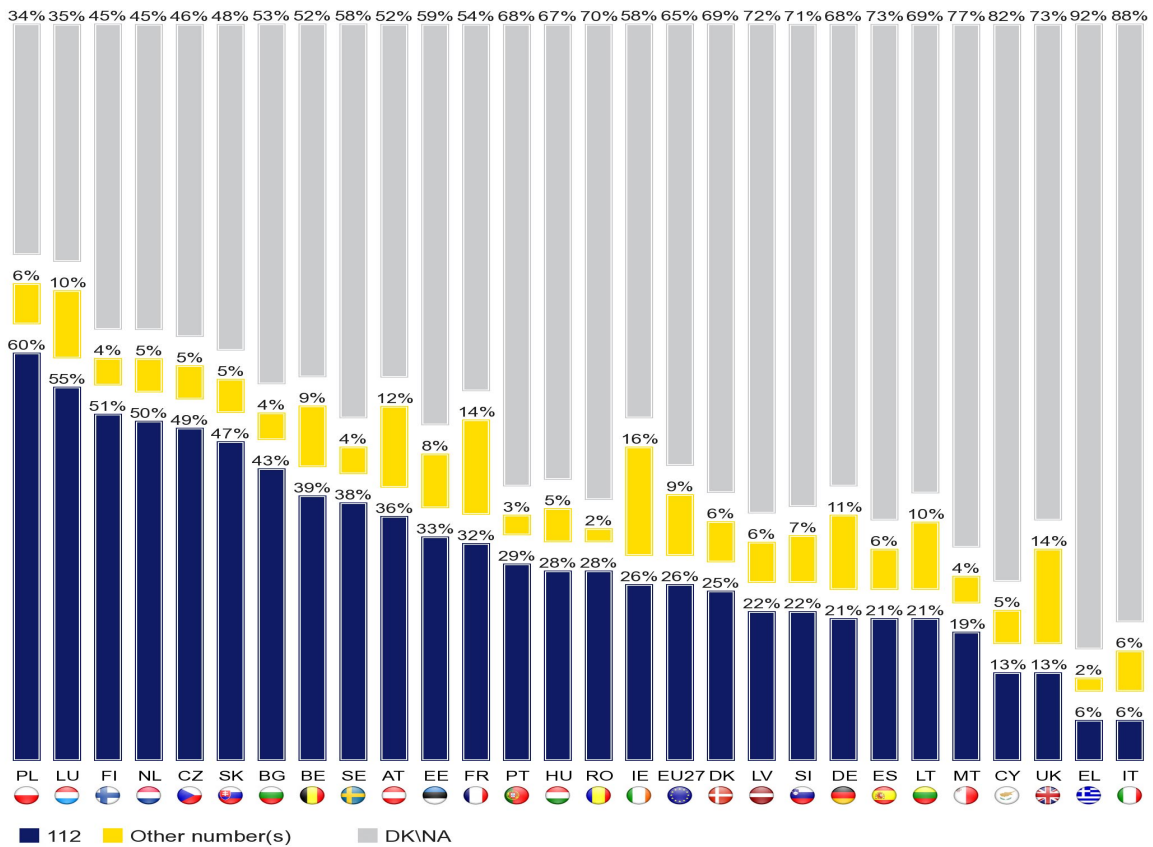
7.2. 112 – European Emergency number

112 is the historic national emergency number and the level of awareness of 112 as the European emergency number stands at 50%.

Awareness of 112 as the EU-wide emergency number:

Can you tell me what telephone number enables you to call emergency services anywhere in the European Union?

(Base: all respondents, % by country)



Source : Eurobarometer 2012

Danish population's knowledge of 112 as the EU-wide emergency number amounts to 25%, placing the country in the 18th position in the EU. 112 has been the only emergency number available since 1992. Caller location information is available from both fixed and mobile networks, with the push forward technology applying for the provision of caller location information to public safety points (PSAPs) as soon as a call is received. Location

information is now required for all operators. Enforcement for nomadic VoIP calls awaits necessary technical standards passing through ETSI. 112 services can also be contacted by means of SMS. In practice, deaf and hearing impaired can contact the PSAP by sending an SMS to an unlisted phone number which can be read and answered by the PSAP. The Danish regulator has not received any complaints regarding the 112 number in Denmark during the reporting period.

7.3. Net neutrality and Quality of service

With regard to Net Neutrality, consumer protections associations and representative of the electronic communication sector established a Net Neutrality forum and adopted in this context a Code of Practice in September 2011.

The EU regulatory framework provisions on net neutrality have been implemented in the Electronic Communication Act "*Lov om elektroniske kommunikationsnet og -tjenester*".

In May 2011, consumer protections associations and representative of the electronic communication sector established a Net Neutrality forum. In this context, a Code of Practice was adopted in September 2011. It identified certain principles intended at keeping the Internet open and non-discriminatory, while at the same time processing Internet traffic in the most beneficial manner for customers, taking into account the platform on which the traffic is processed. The Net Neutrality forum aims at developing these principles and addressing any problems raised. The Danish regulator participated in the initiative as an observer. No problems regarding net neutrality have been identified so far.

7.4. Consumer complaints, tariff transparency

The number of complaints received in 2011 by the private Telecommunications Complaint Board is comparable to the number of complaints received in 2010.

The number of complaints received in 2011 by the private Telecommunications Complaint Board ("*Teleankenævnet*") is comparable to the number of complaints received in 2010 (548). The largest category of complaints concerns billing and, more particularly, data downloads. A slight rise in the number of complaints received concerning defective and flawed products was reported. The Danish Business Authority collects data from providers and publishes them, to promote private interactive price guides. Several private price guides on the Danish market gives the end user the possibility to compare prices.

With the stated intent of improving transparency and consumer confidence, the telecommunications industry has introduced factsheets for mobile and fixed subscriptions, and there is also a sector agreement on the marketing of broadband speeds. The Danish Business Authority runs a broadband price guide, which makes it possible to search for available broadband offers, sorted by post number/zip code.

The Danish Business Authority is in ongoing dialogue with the telecommunication industry as well as consumer stakeholders on possible initiatives to improve tariff transparency in the Danish market.

7.5. Number portability

Regarding **number portability**, the obligation to port numbers in one day is respected and the porting process has been facilitated in practice by an agreement within the operators. The total accumulated volume of ported mobile numbers, which was 354.968 in 2010, was 482.415 in 2011. The total accumulated volume of ported fixed number increased from 133.212 to 169.934 over the same period.

The obligation to port numbers in one day is respected and the porting process has been facilitated in practice by an agreement within the operators. It is reported that the end-users can make an agreement with the receiving operator to get an individual porting date. The new legislation is reported to be working well in practice and very few complaints are reported from end-users. The total accumulated volume of ported mobile numbers, which was 354.968 in 2010, was 482.415 in 2011. The total accumulated volume of ported fixed number increased from 133.212 to 169.934 over the same period

7.6. Universal service

Regarding Universal Service, the Commission opened infringement proceedings in January 2011 on the financing of additional mandatory universal services. A constructive dialogue followed and in January 2012 the Danish authorities provided the Commission with a draft legislation aiming at addressing its concerns. The Act entered into force by 1 April 2012.

The Commission opened infringement proceedings in January 2011 on the financing of additional mandatory universal services, such as maritime emergency services in Denmark and Greenland, ISDN, and leased lines, which are not within the scope of Universal Service as defined in the Universal Service Directive (USD). The Commission expressed its concerns regarding the compatibility of the Danish legislation with the EU rules in a reasoned opinion sent to the Danish authorities in September 2011. A constructive dialogue followed and in

January 2012 the Danish authorities provided the Commission with a draft legislation aiming at addressing its concerns. The Act entered into force by 1 April 2012.

7.7 ePrivacy

No major issues on e-Privacy were reported.

The Executive Order on Information and Consent Required in Case of Storing or Accessing Information in End-User Terminal Equipment, implementing Article 5(3) of the ePrivacy Directive into Danish law, entered into force on 14 December 2011. A public guidance paper relating to the Executive Order was published the same day. While this is a non-binding text, the guidance paper aims at supporting service providers and others in the practical implementation of, and compliance with, the provisions of the Executive Order. Article 13 of the ePrivacy Directive is implemented in the Danish Marketing Practices Act and in the Danish Act on Certain Consumer Contracts. The EU provisions on personal data breach notification are transposed in the Electronic communications Act, and in the Executive Order on Information Security and Emergency Preparedness for Electronic Communications Networks and Services. Notification of personal data breaches is to be made to the Danish Business Authority.



EUROPEAN COMMISSION
Information Society and Media Directorate-General
Electronic Communications Policy
Implementation of Regulatory Framework

18 June 2012

ESTONIA

2011

Telecommunication Market and Regulatory Developments

ESTONIA

31. MAIN MARKET & REGULATORY DEVELOPMENTS: BEST PRACTICES AND CHALLENGES

Development of the sector

Despite the economic downturn and the decrease in **revenues** in recent years, operators continued to develop their networks to enable faster broadband connections. However, current **investments** level with approximately €68 million is still far from the two years old result of €96 million. – *Section 3*

The growth slowdown in **fixed broadband** penetration could be noticed already for the third consecutive year in Estonia, and with a penetration rate of 27.2% Estonia has dropped below the EU average of 27.7%. The declining rate of growth in fixed broadband lines may be explained by the increasing popularity of mobile broadband services and the overall growth in broadband is taken over by mobile. The **mobile broadband** penetration rate, measured by all active users, reached 42%. As of summer 2011 all three mobile network operators (EMT, Elisa and Tele2) offer packages with unlimited data volume at around 11€/month applying reasonable usage principles. – *Section 4.1*

With a relatively high proportion of mobile traffic from the total volume of voice traffic – 74.1% in 2010 and with three strong players – EMT, Elisa and Tele2 - the Estonian **mobile market** could be characterised by intense competition. The market share, by subscribers, of the leading operator EMT dropped to 42% in October 2011. The second operator (Tele2) and the third market player (Elisa) changed their market positions in mobile communications.

As regards the **fixed voice market**, in general the market is mature and continues decline gradually with the fixed penetration rate of 25% reflecting the continuous trend of fixed-to-mobile substitution. Moreover, fixed voice traffic accounted for only 25.9% of total voice traffic in 2010, which is well below the EU average of 46.5%. In many cases the fixed voice service is considered by end-users as a complementary service offered together with broadband and broadcasting services, either on very favourable conditions, or often for free on-net usage. – *Section 5*

As regards **number portability**, in Estonia it took on average, 10 working days to port a fixed number, and 8 days for a mobile number. – *Section 7.5*

Progress in broadband deployment and take-up

In 2011, good progress was made towards the goals of the Estonian broadband strategy, EStWin, aiming to build a country-wide broadband network capable of delivering 100 Mbps connections to the majority of Estonian households and businesses by the end of 2015.

Fixed infrastructure-based competition continues to be based on alternative infrastructures rather than the use of the regulated wholesale products of the fixed incumbent. DSL technology represents 39% of all fixed broadband subscriptions, and DLS market is dominated by the incumbent operator (Elion) with the remarkable market share of 99.8%. While the incumbent operator is pioneering FTTx deployment in the country, its market share is 44% in this market segment. Cable operators, which were mainly present in cities, were able to offer the highest speeds of up to 150 Mbps at competitive prices. With approximately 66.5% of all fixed broadband subscriptions had a download speed of at least 2 Mbps, the most popular bandwidth is the range of 2-10 Mbps (50.3%); yet, the biggest gap compared with the EU average remains in the range of 10-30 Mbps – 4.9% compared to the EU level of 40.5%. Some operators upgraded the speeds of their end-user packages while the prices remained the same, despite increase in speed. – *Section 4*

Independence and effectiveness of the NRA

The lack of effective structural separation of regulatory functions in the field of electronic communications from activities associated with ownership or control of providers of electronic communications networks or services has been an issue in Estonia in 2011. – *Section 2*

Implementation of the framework

Estonia was among the first Member States to notify the full transposition of the new EU regulatory framework for electronic communications into national legislation. The amendments to Electronic Communications Act were adopted on 22 February 2011 with an entry into force on 25 May 2011. – *ad hoc*

Spectrum management

In 2011, the Estonian NRA conducted an auction for unused spectrum in the 1800 MHz frequency band. The coordination agreement between Estonia and Russia of August 2011 has opened up the way for the construction of mobile networks using the 800 MHz spectrum. In addition, Estonia still faces the challenge of coordinating frequencies in this band with Latvia. – *Section 6*

Citizens and consumer protection

Two harmonised numbers for harmonised services of social value, 116111 (Child helplines) and 116 000 (Hotline for missing children) were operational in Estonia in 2011. – *Section 7.1* 112 is operating well in Estonia and its awareness remains relatively high. In September 2011, an action plan for full transition to the single emergency number 112 by the end of 2014 was approved. – *Section 7.2* The majority of consumer complaints concerned mobile and fixed voice services (62%), followed by complaints regarding Internet (19%) and TV (19%). – *Section 7.4* Net neutrality is not considered to be an issue at the moment in Estonia. – *Section 7.3* As regards ePrivacy, the Data Protection Inspectorate has lately published general guidelines regarding the use of electronic contact details for direct marketing, following a survey conducted on the same topic in the first half of 2011. – *Section 7.7*

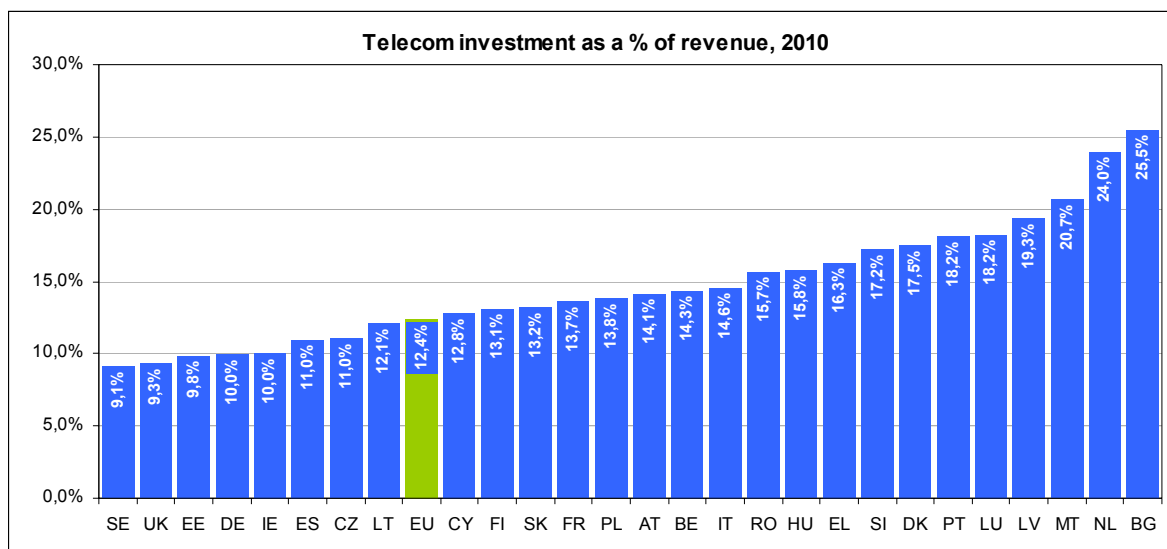
32. NATIONAL REGULATORY AUTHORITIES (NRA)

The lack of effective structural separation of regulatory functions in the field of electronic communications from activities associated with ownership or control of providers of electronic communications networks or services has been an issue in Estonia in 2011.

Most of the responsibilities under the regulatory framework are performed by two regulatory authorities - the Estonian Competition Authority (*Konkurentsiamet*, ECA) and the Estonian Technical Surveillance Authority (*Tehnilise Järelevalve Amet*, ETSA). However, the Ministry of Economic Affairs and Communications (the Ministry) is directly involved in the procedures leading to the approval of the National Radio Frequency Allocation Table and Numbering Plan, as well as in the elaboration of regulations governing the provision of universal service in Estonia. At the same time, the Ministry carries out activities associated with both ownership and control of providers of electronic communications networks or services, in particular where a company provides inter alia broadcasting transmission and wireless broadband. A letter of formal notice was sent to the Estonian authorities in September 2011 concerning incorrect application of EU law by Estonia, namely Article 3(2) of the Framework Directive 2002/21/EC as regards the compatibility with the requirements of effective structural separation between regulatory functions and functions related to the control or ownership of electronic communications providers.

33. REVENUES AND INVESTMENTS

Despite the economic downturn and the decrease in revenues in recent years, operators continued to develop their networks to enable faster broadband connections. However, current **investments** level with approximately €68 million is still far from the two years old result of €96 million.



Source: Commission services

The total turnover of the Estonian electronic communications sector was €697 million as of December 2010 compared to €717 million in 2009, representing an annual decrease for the second consecutive year, by about 2.8% in 2010. The decrease in mobile revenues has been even higher – 5.6%, down from €407 million in 2009 to €384 million in 2010, while revenues generated by the fixed market have slightly increased over the year, totalling €215 million in 2010 compared with €213 million in 2009. Operators pointed the economic downturn and intense competitive environment as reasons to decrease in revenues.

Despite the fall in revenues Estonian operators increased their investment by as much as 4.4% over a year, to approximately €68 million, resulting in an investment over revenues ratio of 9.8%, still well below the EU average of 12.2%. However, current investments level is still far from the two years old result of €96 million. As of December 2010, the total value of investment by alternative operators was around €7 million, mobile operators invested close to €37 million, while the fixed incumbent invested approximately €23 million. According to the regulator, low investment figures can be explained by the slowdown in the construction industry and the national economy in general. The main investments continued to be made in order to develop the mobile networks to enable faster mobile broadband, which is the most rapidly developing sector, as well as the rollout of fibre.

Furthermore, some market consolidation has taken place in 2011. One of the three major players in Estonian telecom market acquired a subsidiary of the Estonian energy company, providing data transmission services to local and international carriers, and wireless Internet access service to approximately 20,000 retail customers in 450 MHz band. The acquisition gives to the buyer a stronger presence towards business customers in the Estonian market, with full control over its 1600 km of fibre-optic transmission network until 2025 to obtain a service that they had purchased so far.

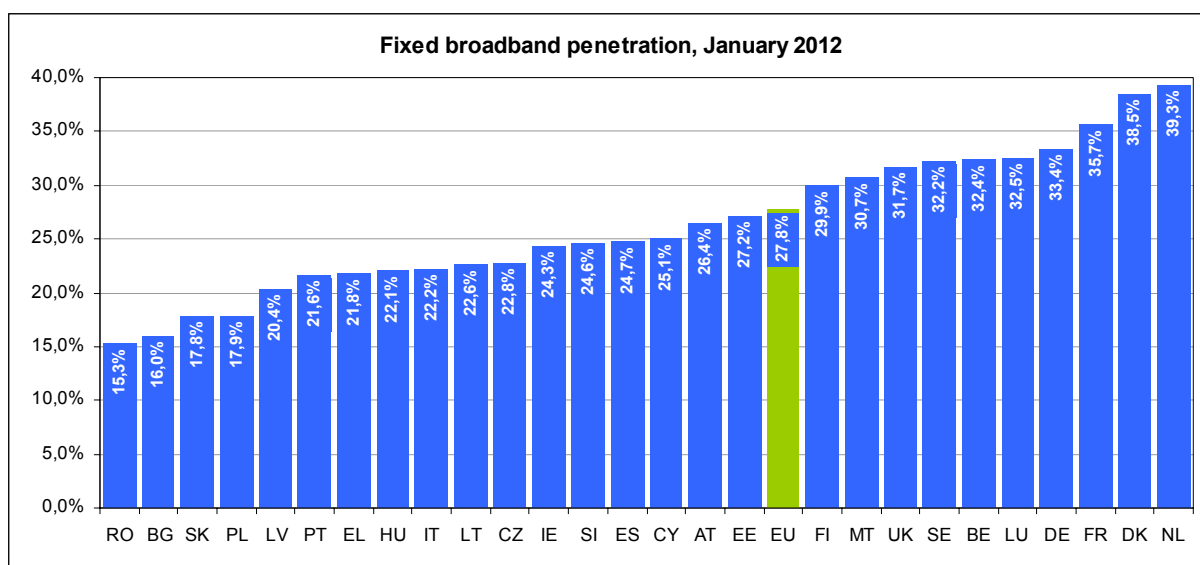
34. BROADBAND

The growth slowdown in **fixed broadband** penetration could be noticed already for the third consecutive year in Estonia, and with a penetration rate of 27.2% Estonia has dropped below the EU average of 27.7%. The declining rate of growth in fixed broadband lines may be explained by the increasing popularity of mobile broadband services and the overall growth in broadband is taken over by mobile. The **mobile broadband** penetration rate, measured by all active users, reached 42%. As of summer 2011 all three mobile network operators (EMT, Elisa and Tele2) offer packages with unlimited data volume at around 11€/month applying reasonable usage principles.

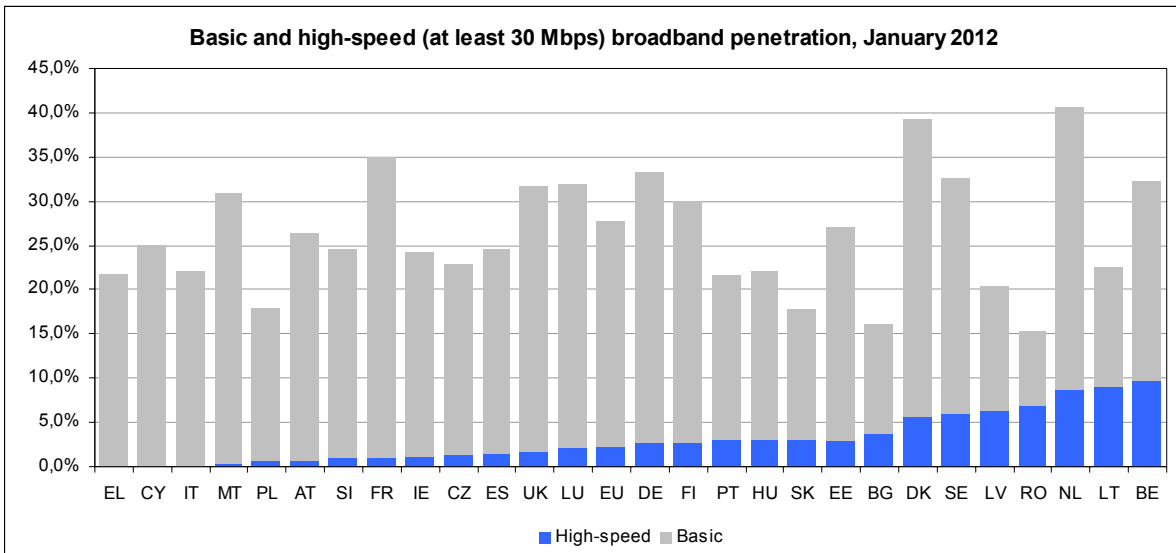
In 2011, good progress was made towards the goals of the Estonian broadband strategy, EStWin, aiming to build a country-wide broadband network capable of delivering 100 Mbps connections to the majority of Estonian households and businesses by the end of 2015.

4.1. Market situation and regulatory developments

In January 2012, in the European ranking for fixed broadband penetration with the penetration rate of 27.2% Estonia has dropped below the EU average of 27.7%, placing Estonia eleventh in the EU.

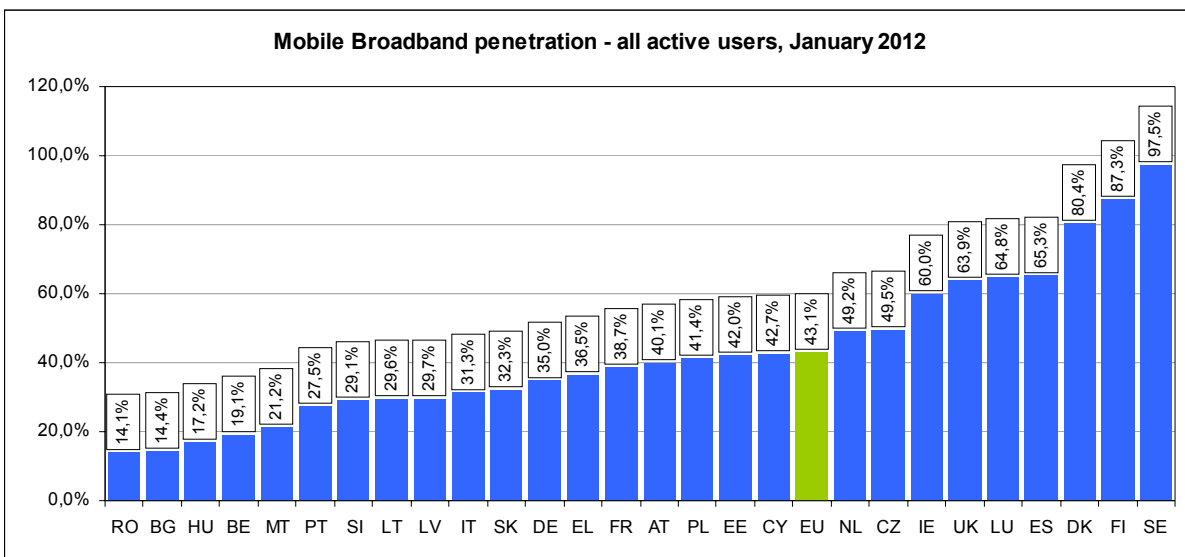


Source: Communications Committee



Source: Communications Committee

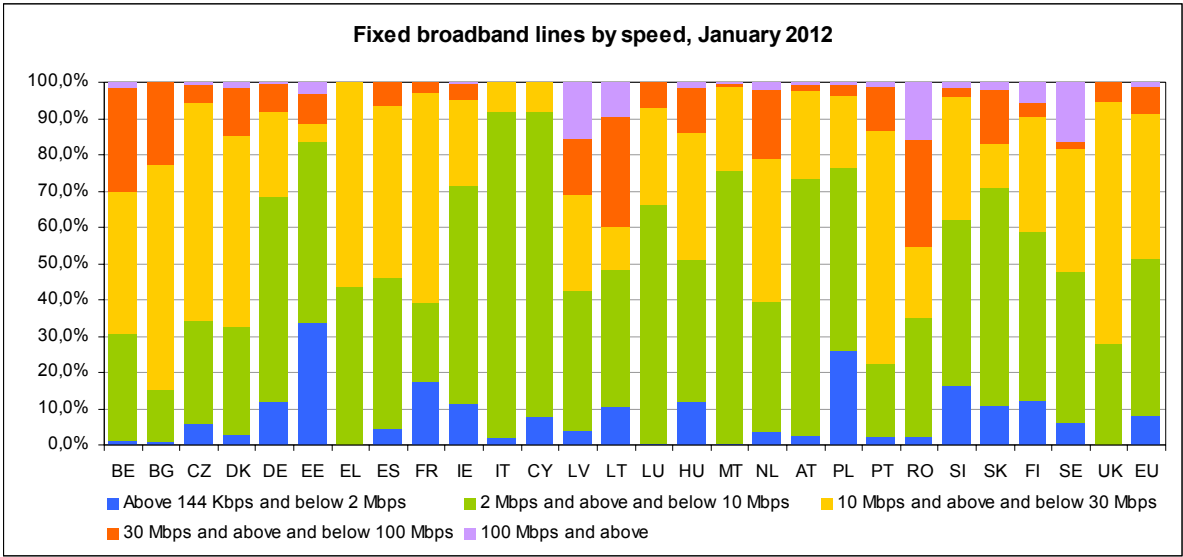
The declining rate of growth in fixed broadband lines may be explained by the increasing popularity of mobile broadband services and the overall growth in broadband is taken over by mobile sector in Estonia. The mobile broadband penetration measured by use of dedicated data cards/modems/keys has increased to 10.7% in January 2012. This was up from 5.2% in January 2011, and makes Estonia sixth in the EU (8.1%). While measured by all active users, the mobile penetration rate reached 42%, however, below the EU average of 43.1%. As of summer 2011 all three mobile network operators offer packages with unlimited data volume at around 11€/month applying reasonable usage principles. In addition, they have had rolled out 3.5G networks covering 80-90% of the population and 50-60% of the territory by the end of 2011. Mobile network operators reported a strong rise in the usage of data services.



Source: Communications Committee

The market leader launched 4G services commercially, and continued its LTE roll-out in the 2.6 GHz band throughout 2011, reaching by the end of the year 30% coverage by population. In addition, two other mobile operators are running their 4G test networks since June 2010. According to the operators, the commercial launch of 4G depends on the complete technical readiness to offer high quality 4G services, but also the easy availability of 4G consumer devices remains an important factor in this regard.

In terms of fixed broadband speeds, in January 2012, approximately 66.5% of all fixed broadband subscriptions had a download speed of at least 2 Mbps, up from 58.9% a year earlier. However, in the range of 2-10 Mbps, which is the most popular bandwidth in the EU (43.4% of all end-users), there have been no significant changes over one year (50.3% in January 2012 compared to 49% in January 2011). Some increase could be noted in the range above 10 Mbps – up from 9.9% in January 2011 to 16.2% in January 2012; yet, the biggest gap compared with the EU average remains in the range of 10-30 Mbps – 4.9% compared to the EU level of 39.9%. With some premium residential offers on the market currently offering a broadband connection up to 150Mbps, a low demand for very high speed products was noted by the industry. Some operators also upgraded the speeds of their end-user packages while the prices remained the same, despite increase in speed.



Source: Communications Committee

On the fixed broadband market, competition between the platforms continues to be intense. DSL technology represents 44% of all fixed broadband subscriptions, which is substantially lower than the EU average with 76%. DLS market is dominated by the incumbent operator with the remarkable market share of 99.7%, which has even risen over the year by 5.3 percentage points. The share of cable modem subscriptions has slightly decreased compared with last year and stood at 20% in January 2012, while FTTx represented 24.9% of all fixed broadband subscriptions, up from 20.2% in January 2011. While the incumbent operator is pioneering FTTx deployment in the country with approximately 36 000 retail lines, its market share is 44% in this market segment. Cable operators, which were mainly present in cities, were also able to offer the highest speeds of up to 150 Mbps at competitive prices. The total

number of next generation access (NGA) lines as a % of total fixed broadband lines was 31% in January 2012.

Fixed infrastructure-based competition continues to be based on alternative infrastructures rather than the use of the regulated wholesale products of the fixed incumbent. Despite several regulatory initiatives, including price control remedies for physical network infrastructure access since January 2010, and supervisory activities, but also the inclusion and full regulation of access to cable ducts, take-up of wholesale access services has even slowed down in 2011. An important reason for the poor take-up by alternative operators of the fixed incumbent's regulated wholesale offers could be the insufficient margin between the wholesale costs and retail prices, but also difficulties when negotiating issues such as collocation with the incumbent operator. In February 2012, one market player announced that they would wind down their DSL and WiMAX based Internet services to end-users.

According to the measures applicable to fibre-based physical infrastructure access since 2009, ECA differentiated fibre from metallic local loops in respect of the non-discrimination and cost orientation obligations, although it considers both forms of access as part of the same relevant market. This is despite the fact that the Commission invited ECA to ensure that access measures for fibre loops are supplemented by appropriate non-discrimination and costing remedies in view of the competition problems identified for this market. In addition, according to the EC, the remedies should further ensure that appropriate passive infrastructure access options, such as access to unused fibre, and arrangements for the migration of alternative operators to fibre networks, are in place.

As regards the imposed remedies in the wholesale broadband access markets, the regulator excluded the application of any price control with regard to access to optical fibre lines at the DSLAM level, ignoring the EC's recommendation regarding this.

Since it seems that the regulatory measures in the wholesale (physical) infrastructure access market and in the wholesale broadband access market have not resulted in a growth of the take-up of the wholesale access services, the ECA intends to initiate the next round of market analyses for markets 4 and 5 (markets for physical network infrastructure access (LLU) and wholesale broadband access) in 2012.

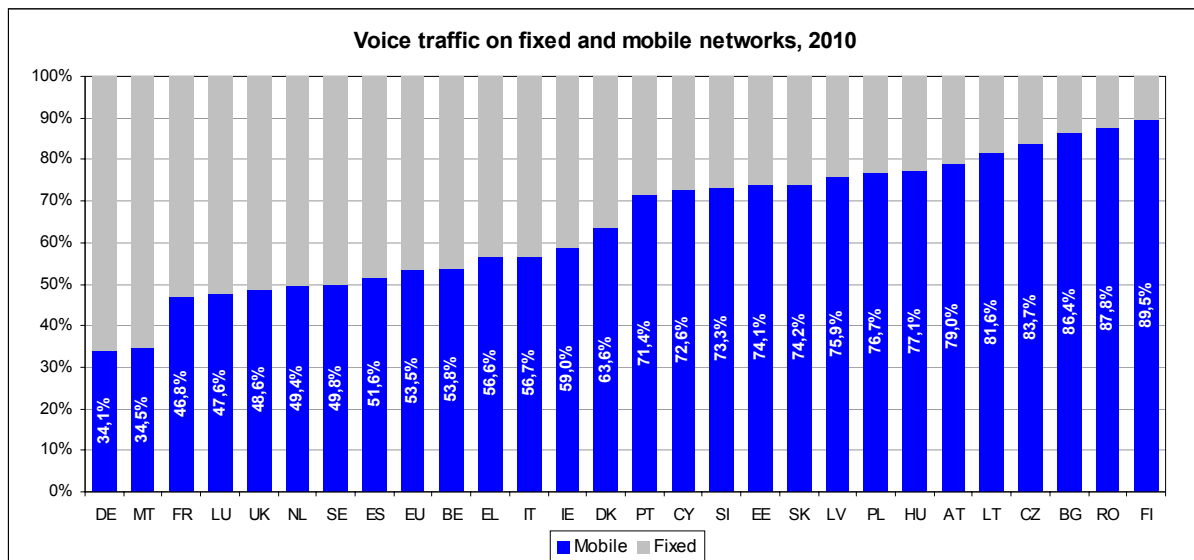
In 2011 the Estonian authorities initiated a study on Rights of Way, regarding all infrastructures with the Ministry of Justice leading the process, which is the first initiative to develop a policy in this area.

4.2. National Plans, private & public investments

The Estonian Broadband Plan, the EstWin project, aiming to build a country-wide broadband network capable of delivering 100 Mbps connections to the majority of Estonian households and businesses by the end of 2015, was notified to the European Commission in May 2010, in order to determine its compatibility with the EU rules on State Aid, and was approved in July 2010. The estimated overall costs of rolling out the 2000 km of Phase I, consisting of approximately 10 different sub-projects, are estimated at €25 million, while a total amount of €22.36 million is planned in State Aid. The first sub-project was launched in August 2010. By the end of 2011, altogether 1100 km of fibre-optic networks, out of 6500 km foreseen to be rolled out by the whole project, had been built and is available for all service providers. As the network became operational, the Estonian Broadband Development Foundation, which is responsible for carrying out the EstWin project, including the organisation of the operation of the built network, and its sustainable management and administration, has to coordinate with the ECA the wholesale access price level that would be reasonable and non-discriminatory. Altogether 23 projects were finished, 2 were in progress and 24 in the planning stage by the end of 2011.

35. VOICE AND OTHER ECOMMUNICATION SERVICES

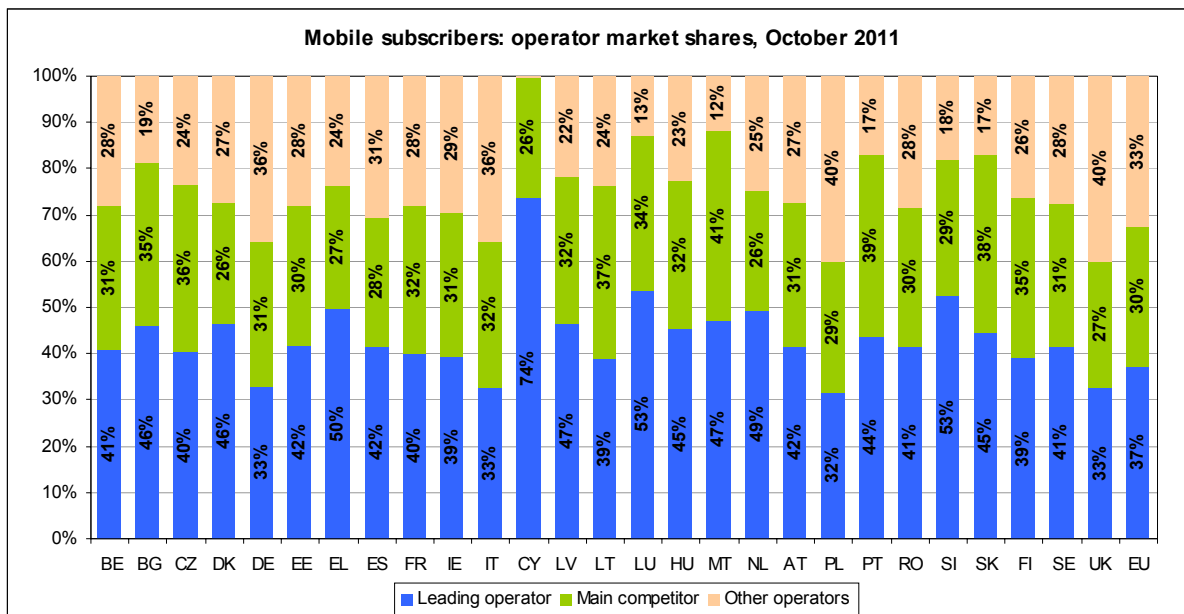
Mobile services continued to be very popular with competitive retail offers in the market. As regards the fixed voice market, in general the market is mature and continues decline gradually. The incumbent was able to defend its high market share through attractive service bundles. In addition, cable operators remained in a strong position.



Source: Commission services

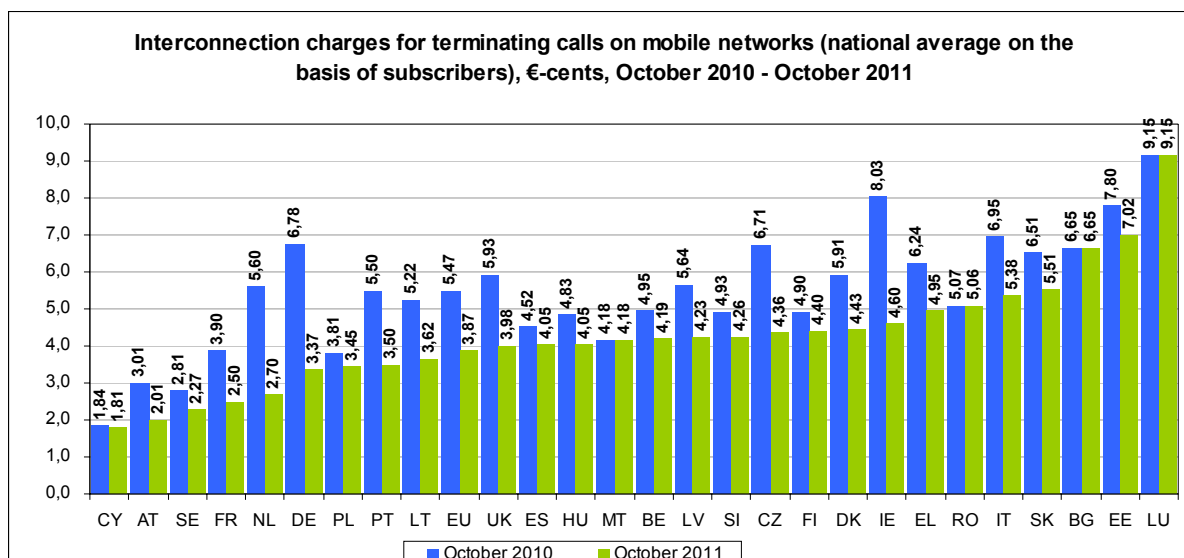
5.1. Mobile services

The mobile penetration rate reached 134% in October 2011, (compared to 120% in October 2010), well above the EU average of 127%. With a relatively high proportion of mobile traffic from the total volume of voice traffic on mobile and fixed networks – 74.1% in 2010 and with three strong players, the Estonian mobile market could be characterised by intense competition and operators' market shares have somewhat changed since last year. The market share, by subscribers, of the leading operator dropped to 42% in October 2011, compared to 46.3% in October 2010. The second and the third market player changed their market positions in mobile communications. The previous second operator, who has positioned itself as a price leader, has experienced strong price attack by the previous third competitor. All operators hold both, GSM and UMTS licences.



Source: Commission services

Prices for mobile phone calls in Estonia are still relatively low. In this regard, the average revenue per minute of mobile communications, excluding VAT, was €0.07. The average annual revenue per user in 2010 was €278. On the contrary, despite the low retail prices, Estonian Mobile Termination Rates (MTRs) are among the highest in the EU (€0.0702 compared to €0.0387 in the EU). However, in the national consultation of the draft decision to regulate the mobile termination market launched by the ECA in January 2012, the NRA proposed a lower MTR level since 1 July 2012. In addition, as regards the price control remedy, ECA proposed to continue with benchmarking in a way that instead of applying the average rate in the ERG countries together with a +/-10% cap, as in the current regulation, it would use the benchmarks only of those countries which already apply MTR of an efficient operator in line with the Commission's comments to the previous market analysis.



Source: Commission services

5.2. Roaming

As regards the roaming, all three mobile operators in the Estonian market seemed to comply duly and on time with the obligations, as required by the amended Roaming Regulation. The eurotariff offered by operators reflects the maximum price cap set in the Regulation with a few exceptions for more favourable prices when calling from neighbouring countries. Furthermore, the retail prices for data service are still remarkably higher than the wholesale price cap set in the Regulation, except for some temporary offers in the market. Some operators have lowered their roaming prices for voice services when calling from the most visited third countries.

5.3. Fixed

As regards the fixed voice market, in general the market is mature and continues decline gradually with the fixed penetration rate of 25% reflecting the continuous trend of fixed-to-mobile substitution. Moreover, fixed voice traffic accounted for only 25.9% of total voice traffic in 2010, which is well below the EU average of 46.5%. In many cases the fixed voice service is considered by end-users as a complementary service offered together with broadband and broadcasting services, either on very favourable conditions, or often for free on-net usage. There are 6 operators offering voice telephony through direct access based on full LLU and 7 based on proprietary infrastructure. However, the position of the incumbent operator in the fixed voice market remains unchallenged. The market share of VoIP operators on fixed calls stood at 15% in October 2011, which was well below the EU average of 23.1%.

As regards the market analysis of the market for access to the public telephone network at a fixed location in 2010, the European Commission invited ECA to impose a wholesale line rental (WLR) obligation as soon as possible in order to render CS/CPS obligations more

effective. While at that time the Estonian legislation did not foresee the possibility to impose a WLR remedy, such a power has been given to the NRA with the amended Electronic Communications Act since May 2011.

Following the second round of market analyses, ECA withdrew regulation from the wholesale market for the trunk segments of leased lines and continued with the regulation in the market for the terminating segments of leased lines, in relation to which the Commission issued comments concerning the lack of clear boundaries between these two markets. In addition, the Commission underlined the need for monitoring the latter market with a view to its possible extension to Ethernet leased lines.

In the recent Court Judgement, the incumbent challenged the ECA's prescription regarding the applied methodology of calculation of LLU prices, and was granted initial legal protection. However, the case was concluded in May 2011 with a compromise between the parties.

5.4. Broadcasting

Following the digital switch-over in July 2010, approximately 30.2% of households received TV broadcasting via digital terrestrial TV (DTTV). Competition between the platforms continues to be intense with 38.4% of cable TV's market share (up from 37.4% in 2010), and well established IPTV platform with market share of 23.2% of households (up from 20.3 in 2010). The satellite platform continues to mainly be supplementary to other platforms, with a market share of 8.2%.

Following the full transition to digital television, there are 5 national free-to-air channels in the terrestrial digital broadcasting network. Three terrestrial multiplexers (MUX) are in operation, one for free-to-air digital TV channels with a 100% coverage of the territory, and two others with conditional access covering 90% of the territory. In November 2011, the public tender for providing digital television broadcasting services in the frequency band of 470–790 MHz was completed, and the biggest cable operator was declared the winner. The respective frequency authorisation grants the right to broadcast television broadcasts and programmes via three multiplexers.

The Government has decided not to establish a regulation establishing digital switchover also in cable networks since the main cable operators already provide digital services.

Although the market for broadcasting transmission services is no longer recommended by the Commission for ex ante regulation, the new analysis of the wholesale market for broadcasting

transmission services proposing to maintain the regulatory measures was notified by ECA to the Commission in early 2011.

36. SPECTRUM MANAGEMENT

In 2011, the Estonian NRA conducted an auction for unused spectrum in the 1800 MHz frequency band. The coordination agreement between Estonia and Russia of August 2011 has opened up the way for the construction of mobile networks using the 800 MHz spectrum. In addition, Estonia still faces the challenge of coordinating frequencies in this band with Latvia.

Unused spectrum in the 1800 MHz frequency band was put on auction in the second half of 2011. The threshold for one licence was €300 000 and the final result of the auction was €0.916 million. The winning bids were submitted by the three existing mobile market players and a total of three licenses have been issued of 2*8.4 MHz each. The winners are obliged to put the allocated frequencies into use in at least 30 base stations all over Estonia by December 2012 at the latest. Depending on the results of the auction the need for re-farming of this band will be considered.

In addition, secondary legislation was adopted according to which re-farming of 900 MHz band to create continuous spectrum blocks will be conducted in January 2014. Until then one operator, who has two contiguous slots in this band, is not allowed to cross use them to avoid any competitive advantage in front of the other operators.

In the end of 2011, the ETSA and the Ministry of Economic Affairs and Communications started preparations for organising a public competition for finding communication undertakings to provide mobile broadband services in the frequency band of 790-862 MHz and launched a public consultation to gather the views of different stakeholders.

According to the Estonian Digital Dividend Plan, the 790 – 862 MHz frequency range, which currently is used by the TV broadcasting transmission service provider until 1 July 2012, should be used also for the provision of mobile broadband services. While so far the use of the 800 MHz frequency band for that purpose has been restricted in Estonia due to military use of that range by Russia, an agreement reducing the restriction area has been reached in August 2011 between Russia and Estonia. This agreement allows for the provision of high-quality mobile services in that frequency band throughout the territory of Estonia, however, with the requirement to coordinate the base stations which are closer than 10-20 km to the border. In addition, Estonia still faces the challenge of coordinating frequencies in this band with Latvia, which is still using the band for digital broadcasting. As noted by the Estonian authorities, serious interference problems in southern part of Estonia prevent to make the band fully usable for wireless broadband, and numerous attempts to address these problems with Latvian authorities have minimal positive results so far.

Spectrum trading is currently available in the 2.1 GHz and 2.6 GHz bands.

37. CONSUMER INTEREST

7.1. 116 - Harmonised numbers for services of social value

Two harmonised numbers for harmonised services of social value, 116 111 (Child helplines) and 116 000 (Hotline for missing children) were operational in Estonia in 2011.

As of January 2012, two harmonised numbers for harmonised services of social value, 116111 (Child helplines) and 116 000 (Hotline for missing children) were operational in Estonia. One number, 116117 (Non-emergency medical on-call services), which has been assigned to a service provider, was expected to be operational in 2011. However, it is not operational yet. While the 116006 (Helplines for victims of crime) and 116123 (Emotional support helplines) numbers are available for the provision of the service, no applications have been submitted so far.

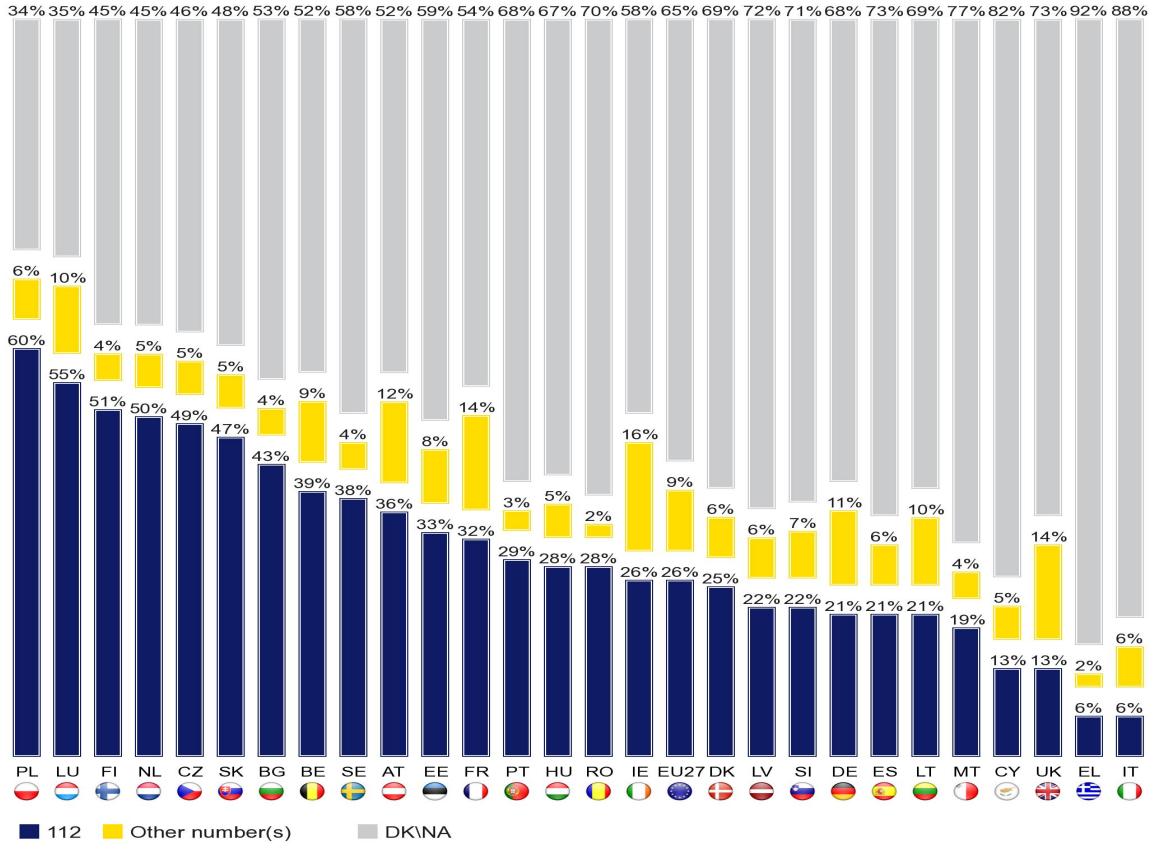
7.2. 112 – The European Emergency number

112 is operating well in Estonia and its awareness remains relatively high. In September 2011, an action plan for full transition to the single emergency number 112 by the end of 2014 was approved.

Awareness of 112 as the EU-wide emergency number:

Can you tell me what telephone number enables you to call emergency services anywhere in the European Union?

(Base: all respondents, % by country)



Source : Eurobarometer 2012

To reduce the time needed for an emergency service to reach the scene, the development project “GIS-112”, which is funded as part of framework cooperation between Estonia and Switzerland, has been launched in 2010. The project, aiming to establish an emergency management monitoring system on an electronic map, allowing, inter alia, to display the location of the emergency caller, is supposed to be fully operational before the end of 2012.

So far 112 works alongside with another national emergency number for police 110. However, according to the latest Eurobarometer survey, about 90% of Estonians would call the 112 number in the event of an emergency in their own country. In September 2011, the Minister of the Interior approved an action plan for full transition to the single emergency number 112 by the end of 2014. According to the same survey Estonians' awareness of 112 as the European-wide emergency number was 33%.

7.3. Net neutrality & quality of service

Net neutrality is not considered to be an issue at the moment in Estonia.

New net neutrality and quality of service requirements are transposed to the national legislation. The national regulatory authority has not set any minimum quality of service requirements on undertakings providing public communications networks so far.

Net neutrality is not considered to be an issue at the moment in Estonia. Mobile network operators have declared that they do not currently have a policy of blocking VoIP traffic.

7.4. Consumer complaints, tariff transparency

The majority of complaints concerned mobile and fixed voice services (62%), followed by complaints regarding Internet (19%) and TV (19%).

While in 2010, 3.7% out of all complaints submitted to the Consumer Protection Board (CPB) were in the field of electronic communications, the share of such complaints in the first half of 2011 was 4.9%. The majority of complaints concerned mobile and fixed voice services (62%), followed by complaints regarding Internet (19%) and TV (19%). In addition, the CPB responded to 280 written enquiries within this period. The main concerns of end-users were related to received bills, problems/disputes over the termination of the contract, contractual penalties provided by communication undertakings, the volume of the consumed mobile Internet and the low quality or lack of Internet communications. CPB holds meetings with the stakeholders on a regular basis to discuss issues of concern and, if necessary, issues guidelines for the market players (eg an Instruction for the provision of the periodical mobile content services).

The ECA continues to improve consumer awareness, including by continuously updating the website *Sideteenuste kalkulaator* which, on top of individual national tariffs, allows for a comparison of bundled offers and roaming packages.

7.5. Number portability

As regards number portability, it took on average, 10 working days to port a fixed number, and 8 days for a mobile number in October 2011.

Between January and October 2011, a total of 6 653 fixed numbers were ported in Estonia, compared with 11 593 a year ago, reflecting the overall decline in the fixed voice market. On the contrary, mobile number portability number has grown - between January and October 2011, a total of 51 020 mobile numbers were ported, compared to 47 726 a year ago. In Estonia it took on average, 10 working days to port a fixed number, and 8 days for a mobile number in October 2011, which are below the EU averages of 15 days for fixed numbers and 10 days for mobile numbers.

The secondary legislation is adopted in Estonia to regulate the wholesale porting process, including setting a time limit for loss of service to 15 minutes.

7.6. Universal service

The designation period of the alternative operator as regards the universal service connection to the PSTN, expired at the end of 2011, and the contract was not renewed.

While the alternative operator was designated as a Universal Service provider, and only as regards connection to the PSTN, the designation period expired at the end of 2011, and the contract was not renewed. There have not been any discussions in Estonia so far regarding the extension of the scope of the Universal Service to include broadband connections, since the service is available to end-users throughout the country via wireless broadband with maximum 3.1 Mbps download/1.8 Mbps upload speeds at an affordable price. Moreover, taking into account the EstWin project, the Universal Service lost likely will not be of much relevance in the future, even if broadband would be included.

7.7. ePrivacy

The Data Protection Inspectorate has lately published general guidelines regarding the use of electronic contact details for direct marketing, following a survey conducted on the same topic in the first half of 2011.

The Data Protection Inspectorate is an independent supervisory body dealing with state supervision upon processing of personal data and is also authorised to issue guidelines for better protection of personal data and privacy. The Inspectorate was active in a number of areas regarding the e-safety of consumers. It has lately published general guidelines regarding the use of electronic contact details for direct marketing, following a survey conducted on the same topic in the first half of 2011. Given the high percentage of incidents related to misuse of electronic contact details for direct marketing and in order to introduce preventive measures to deal with spammers and so reduce the number of complaints with this regards, such guidelines were clearly necessary. A comprehensive legal framework against spam is in place: unsolicited commercial communications, as well as anti-spam rules in Estonia are regulated by the Information Society Service Act.



EUROPEAN COMMISSION
Information Society and Media Directorate-General
Electronic Communications Policy
Implementation of Regulatory Framework

18 June 2012

GREECE

2011

Telecommunication Market and Regulatory Developments

GREECE

38. MAIN MARKET & REGULATORY DEVELOPMENTS

Development of the sector

During this period of adverse economic climate, the electronic communications sector experienced an overall decrease of **revenues and investments**. Despite the steep decline in revenues (-10.2 in 2010 and -6% in 2011³⁴), the sector still generated €6.556 billion and invested €1.070 billion in 2010. (*Section 3*).

Competition in the **fixed broadband market** is improving, mainly driven by investments in local loop unbundling and resulted in a decrease of the incumbent operator's market share of retail broadband connections to 44% in January 2012 (49% a year before). Fixed broadband take-up as a percentage of population was 21.8% in January 2012, still well below the EU average (27.7). The **wireless broadband market** depicts a penetration of only 3.7% if only dedicated data service cards are taken into consideration but penetration raises to 36.5% for all active users; the completion of the re-farming process in 2012 is expected to boost investment in this area. (*Section 4.1*)

Significant increase in the provision of services through local loop unbundling intensified retail competition on the **fixed market**. As a consequence, the market share of the incumbent (OTE) in the fixed telephony market (all types of calls by traffic volume) significantly decreased to 62.8% in December 2010, which accounted for a decrease of 5.8 percentage points over the year. Competition is stagnating in the **mobile market**, where the leading operator outruns its main competitor with 49.8% market share against 26.6%); the third operator follows with 23.6%³⁵. Mobile penetration continued to drop substantially below the EU average of 127% (110.9% in October 2011), accentuating a strong impact on revenues, also due to a parallel reduction in the average revenue per minute (APPM) and the average revenue per user (ARPU). (*Section 5*)

While the number of days needed to **port** a fixed or a mobile **number** is steadily decreasing, a reduction was also recorded on the number of fixed (8.6% of all fixed numbers ported in 2011, down from 8.9%) and mobile (3% of all mobile numbers ported in 2011, down from 3.7%) transactions. (*Section 7.5*)

Progress in broadband deployment and take-up

At the end of 2011, Greece was moving towards achieving the DAE target aiming at securing a basic broadband connection (in the order of 2 Mbps) for all EU households by 2013. However, progress in the deployment of high-speed (30 Mbps) and very-high speed broadband (100 Mbps) has so far been negligible, both in terms of coverage and take-up. The rural broadband project, launched at the end of the reporting period, is expected to improve broadband coverage and the national strategy also focuses on two other NGA networks projects, which could help achieve the DAE targets. (*Section 4.2*)

³⁴ EITO – European Information Technology Observatory – 8 December 2011, p. 110.

³⁵ According to data available from the Screen Digest.

Independence and effectiveness of the NRA

Despite the impact of cost and salary reduction measures, EETT continued to be active in executing its regulatory and monitoring tasks. Notwithstanding a ruling from the State' Council, partially clearing the ambiguity as regards which Court is competent to rule on appeals against decisions by the EETT, regulatory uncertainty continued in the market with a significant number of outstanding appeals against decisions of the regulator, pending before the Council of State. (*Section 2*)

Implementation of the framework

At the end of the reporting period, Greece had not yet transposed the 2009 EU reform package, which was due by 25 May 2011. Infringement proceedings were therefore ongoing. However, the Greek Parliament adopted law 4070/2012, on the Organization and Functioning of the Electronic Communication Sector, also transposing the 2009 Reform Package, which is in force since 10 April 2012. While another infringement proceeding regarding rights of way was pending at the end of the reporting period, necessary legislation in order to address the grievances was adopted in 2012.

Spectrum management

Following three public consultations, held by EETT in January, July and September 2011 the Greek authorities completed a tender procedure for the granting of rights of use in the 900 MHz and 1800 MHz frequency bands, raising the total amount of €380.5 million. (*Section 6*)

Citizens and consumer protection

Greece scored very low on information and awareness of the European Emergency Number 112. (*Section 7.2*) Three social value numbers were operational at the end of the reporting period and the Greek respondents were amongst the most enthusiastic in Europe as regards their utility. (*Section 7.1*) Quality of service remains a priority for the regulator, who developed a broadband quality measurement tool. (*Section 7.3*) The number of consumer complaints in 2011 tends to stabilise, partly thanks to the new Code of conduct initiated by EETT. (*Section 7.4*) No major issues on Universal Service and e-Privacy were reported. (*Section 7.6*)

39. NATIONAL REGULATORY AUTHORITIES (NRA)

Despite the impact of cost and salary reduction measures, EETT continued to be active in executing its regulatory and monitoring tasks. Notwithstanding a ruling from the State' Council, partially clearing the ambiguity as regards which Court is competent to rule on appeals against decisions by the EETT, regulatory uncertainty continued in the market with a significant number of outstanding appeals against decisions of the regulator, pending before the Council of State.

Regulation in Greece is divided between two bodies, the Greek national regulatory authority, Εθνική Επιτροπή Τηλεπικοινωνιών & Ταχυδρομείων, (EETT) and the Ministry of Infrastructure, transport and networks, with clearly defined responsibilities. EETT is considered by the market as an independent regulator.

Although wholly market financed, EETT's staff of 186 employees have experienced considerable salary reductions, of up to 50% during the last 2 years, in line with the general public administration salary cuts carried out in response to the country's current economic situation. Mobile operators complain that because of restrictions in overtime work, the NRA cannot ensure continuous surveillance of spectrum for illegal interference.

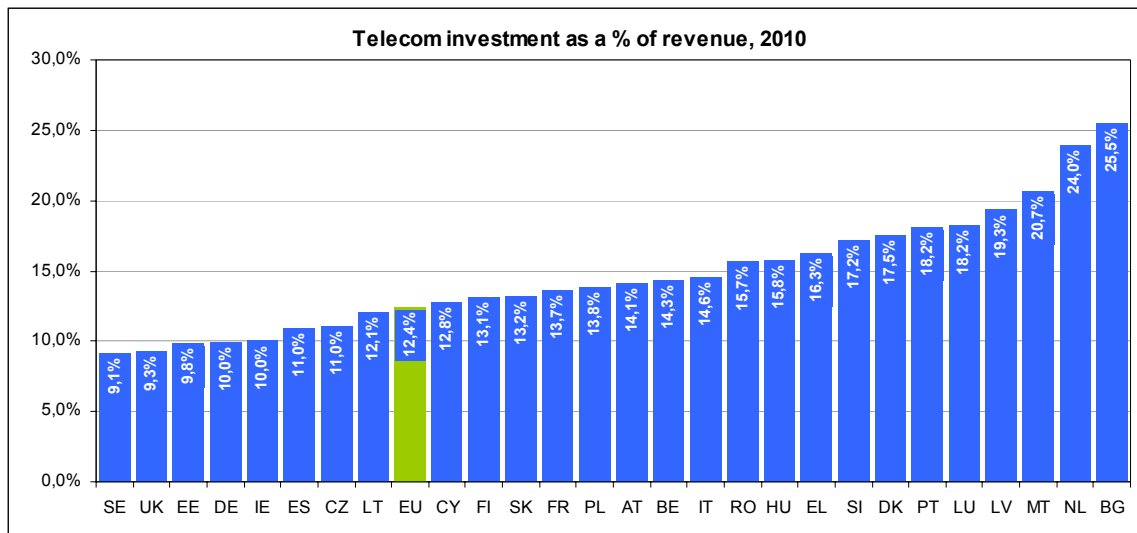
Criticism has been expressed for a lack of transparency, especially with regard to establishing priorities in the handling of dispute resolution requests, as well as regarding the methodology for setting the reserve price for the competitive tender procedure for the granting of rights of use in the 900 MHz and 1800 MHz frequency bands. The agency has adopted 7 dispute resolution decisions during the reporting year and imposed fines exceeding, in total, €10 million for violations of the electronic communications law. "Regulation-by-litigation" was used by EETT for issues concerning access and interconnection fees between premium services and mobile network providers. In 2010, EETT transferred €71.2 million to the government's budget from its financial resources, based on fees for the use of spectrum, or numbering resources.

In a judgment of 3 December 2010, the Plenary of the State's Council issued its ruling on the constitutionality of Article 67 of Law 3431/2006, partially clearing the ambiguity regarding the competency of the Athens Administrative Court of Appeals to rule on appeals against decisions by the EETT, ruling partly in favour of its own jurisdiction and partly of the jurisdiction of the Athens Administrative Court of appeals. This decision is the first step towards providing an efficient appeal mechanism for the sector. Regulatory uncertainty in the market however continued with a significant number of outstanding appeals against decisions of the regulator, pending before the Council of State.

Complaints have also been reported regarding an obligation imposed by secondary legislation on General Authorisation on providers which are not established in Greece to appoint a proxy, permanently residing in Greece and speaking the Greek language. The Commission services are looking into this matter.

40. REVENUES AND INVESTMENTS

During this period of adverse economic climate, the electronic communications sector experienced an overall decrease of revenues and investments. Despite the steep decline in revenues (-10.2 in 2010 and -6% in 2011), the sector still generated €6.556 billion and invested €1.070 billion in 2010.



Source: Commission services

The total revenue of the Greek electronic communications sector for the year 2010 amounted to 6.556 € billion (€7.3 billion in 2009 amounting to a 10.4% reduction), 3.338 € billion of which came from the fixed market and €3.218 billion from the mobile market. The trend for 2011 continues to be negative, with a further 6% contraction, according to data available from EITO³⁶. An even steeper drop is observed in investments. Total investments in electronic communications networks in 2010 amounted to €1.070 billion. Mobile operators continued with their network investments, with almost 100% of the country's population having network coverage.

Greece imposes heavy sector specific taxation on electronic communication services. Apart from imposing one of the highest levels of VAT in Europe (23%), there is also a Special Mobile Telephony Tax, which is applicable to voice only and voice/data combined usage, but excludes data only services.

41. BROADBAND

Competition in the **fixed broadband market** is improving, mainly driven by investments in local loop unbundling and resulted in a decrease of the incumbent operator's market share of retail broadband connections to 44% in January 2012 (down from 49% a year before. Fixed broadband take-up as a percentage of population was 21.8% in January 2012, still well below the EU average (27.7%). The **wireless broadband market** depicts a penetration of only 3.7% if only dedicated data service cards are taken into consideration but penetration raises to 36.5% for all active users; the completion of the re-farming process in 2012 is expected to boost investment in this area.

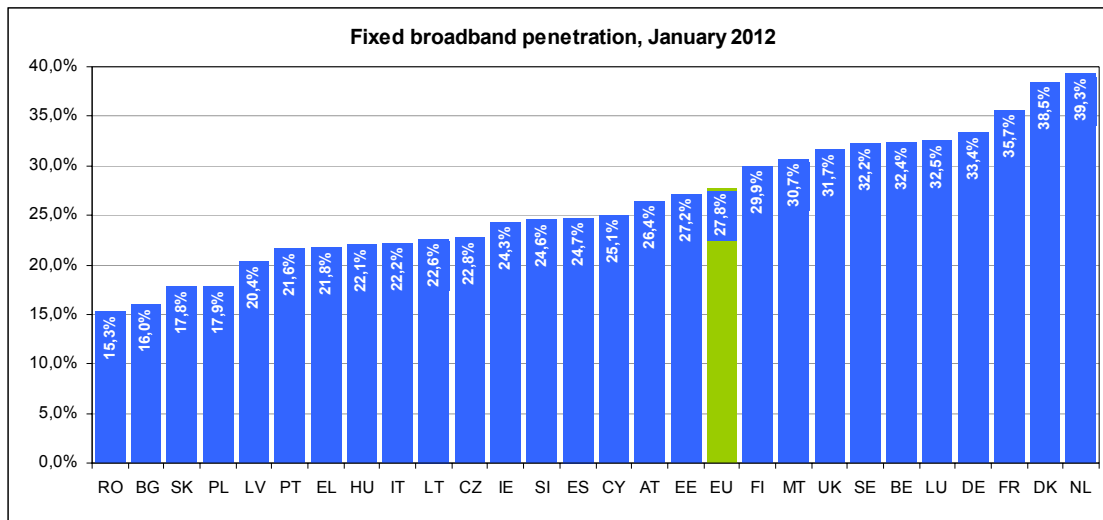
At the end of 2011, Greece was moving towards achieving the DAE target aiming at securing a basic broadband connection (in the order of 2 Mbps) for all EU households by 2013. However, progress in the deployment of high-speed (30 Mbps) and very-high speed broadband (100 Mbps) has so far been negligible, both in terms of coverage and take-up. The rural broadband project, launched at the end of the reporting period, is

³⁶ EITO – European Information Technology Observatory – 8 December 2011, p. 110.

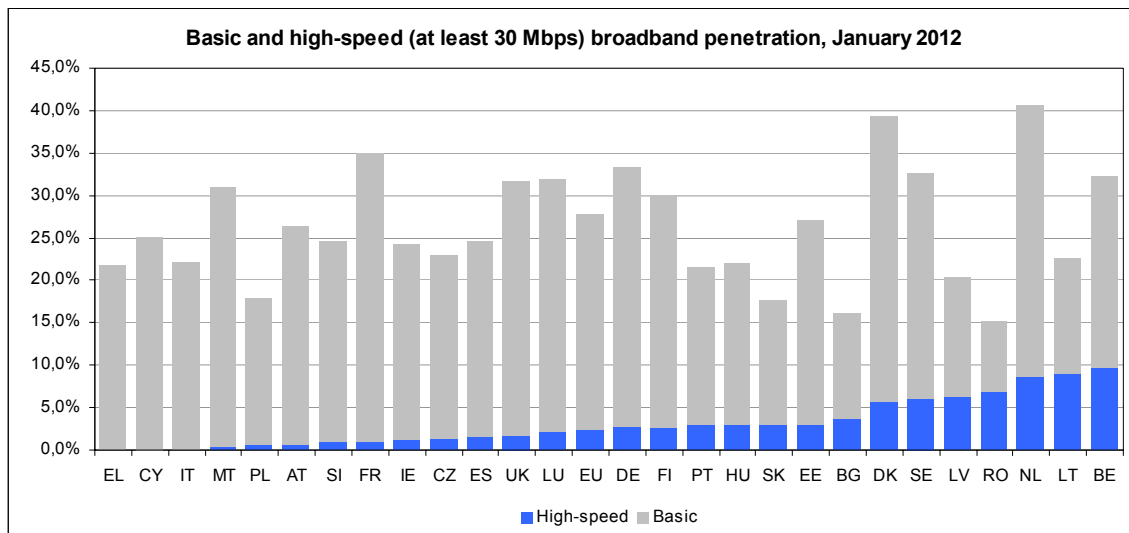
expected to improve broadband coverage and the national strategy also focuses on two other NGA networks projects, which could help achieve the Digital Agenda targets.

41.1. Market situation & Regulatory developments

The broadband market in Greece continued to grow throughout 2011, despite the economic recession. In January 2012, fixed broadband penetration growth stood at 1.84, above the EU average of 1.25. Broadband penetration increased to 21.8% in January 2012, compared to 19.9% a year before, which remains considerably below the EU average of 27.7%.



Source: Communications Committee

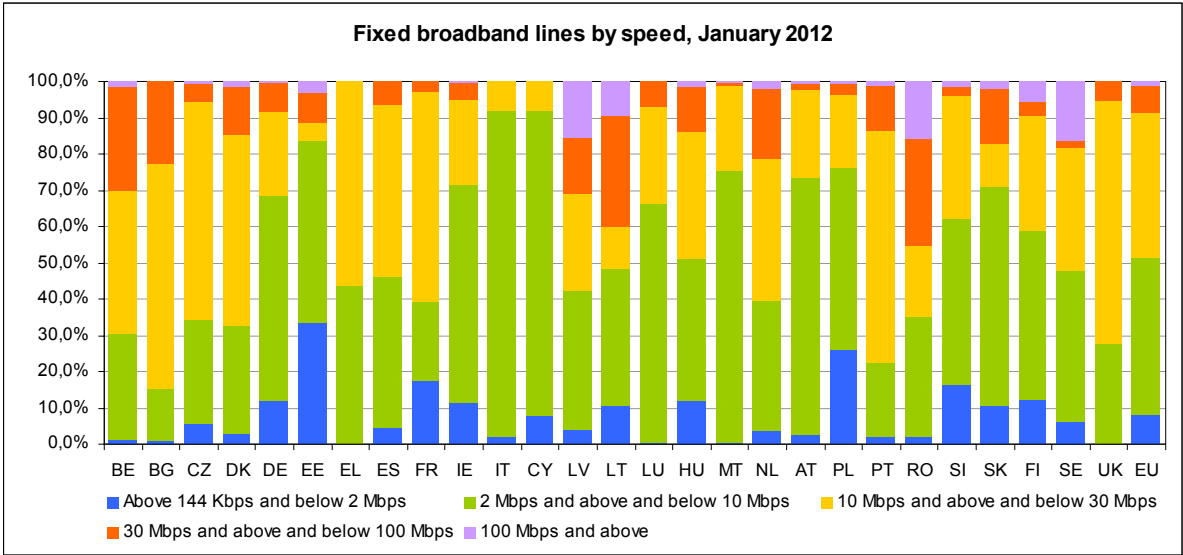


Source: Communications Committee

Total number of unbundled lines (fully and shared) reached 1 665 255 in January 2012 (96.1% of alternative operator's DSL lines being fully unbundled). xDSL is practically the only access technology (almost 100% of the total retail broadband lines). The number of broadband lines based on bitstream access further decreased in January 2012, representing only 2.2% of new entrant's DSL lines (VDSL excluded). The development and coverage of fibre access is still negligible (0%).

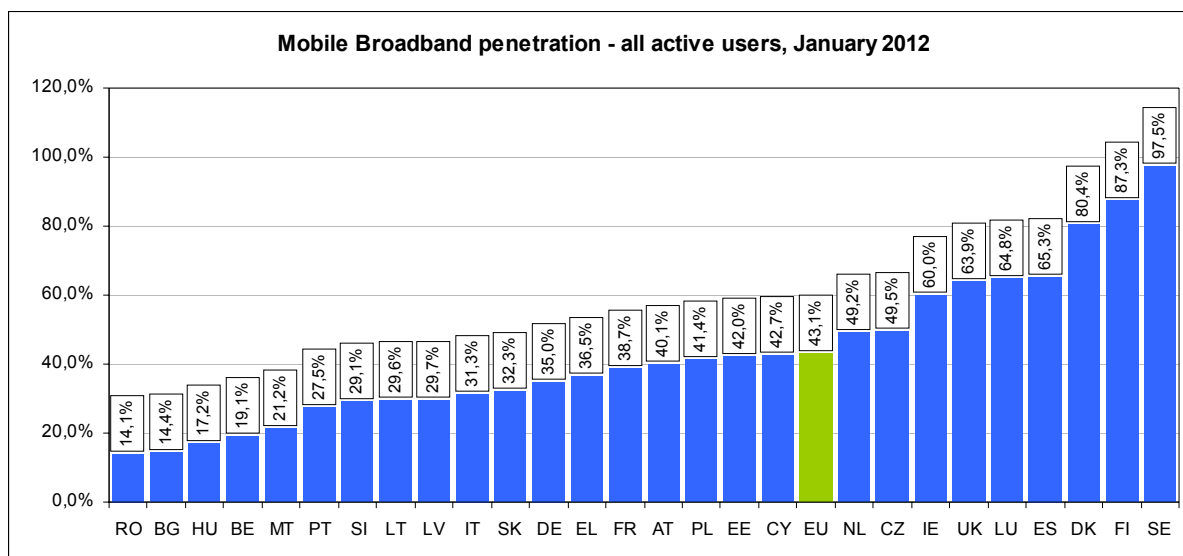
The incumbent's market share of retail broadband connections significantly decreased to 44% in January 2012 (down from 49% a year before) close the European average of 43%. There was no significant improvement regarding the national access speeds of broadband lines. 10 Mbps lines continue to be the most popular amongst Greek end-users (56.2% of the total broadband lines in January 2012), while a considerable number of lines is between 2 and 10 Mbps (43.8%). The percentage of retail broadband lines with speeds above 30 Mbps is negligible.

Fixed broadband lines in the EU Member States by speed



Source: Communications Committee

Mobile broadband in Greece continued to grow but at a very slow pace, reaching a penetration level of 3.7% in January 2012 (calculated as the number of dedicated data services via modems, card, and USB keys), growing by 0.9 percentage points in one year comparing to a 0.4 percentage point increase in the EU average (7.9% in January 2012). If all active users are accounted, Greece still ranks below the EU-27 average of 43.1%, with a penetration of 36.5%.



Source: Communications Committee

EETT has completed the third round review of the markets for wholesale (physical) network infrastructure access (including shared or fully unbundled access) at a fixed location) and for wholesale broadband access. Market analysis was hastened because of the incumbent's plans to launch a retail VDSL offer in limited areas. In March 2011, EETT adopted interim measures, mainly obliging the incumbent to make new cost-oriented wholesale broadband access products available six months prior to the launching of a retail offer. In the subsequent market analysis, EETT included fibre in the market definition and defined the relevant geographic market to include the entire Greek territory. The incumbent was found to have Significant Market Power (SMP) in both markets and remedies were imposed. The Commission commented on the availability of new WBA products, reminding EETT that according to the NGA Recommendation, NRAs should oblige the SMP operator to make new wholesale broadband access products available in principle at least six months before the SMP operator, or its retail subsidiary markets its own corresponding NGA retail services, unless there are other effective safeguards to guarantee non-discrimination. It also pointed out that WBA prices should not be higher than the cost incurred by an efficient operator. In its final measures, EETT obliged the incumbent not to offer a retail product before a period of six months from the approval of the cost-oriented wholesale broadband access prices. On 1 December 2011, EETT approved these prices.

The reporting year showed progress in the rights of way area. On 22 March 2011, the Government issued a Ministerial Decision on a special procedure for licensing standardised antennae constructions, establishing a simplified one-stop-shop procedure. On 5 January 2012, the Government released a Ministerial Decision on the procedure for granting rights of way, establishing a common authorisation procedure for the granting of rights of way and the procedure for the settlement of fees, thereby addressing the recurrent problem of local authorities setting ad-hoc procedures. The Decision provides for a 30 days deadline (target date) during which the competent authorities must decide, after which the request for rights of way is deemed tacitly approved. In addition, it provides for the coordination of civil engineering works, limited to electronic communications providers.

By contrast, no antenna authorisation was issued by the competent authorities in 2011 and

more than half the amount of fines imposed by EETT related to antenna licensing³⁷.

41.2. National Plans, private & public investments

In terms of broadband development, on 10 November 2011, the Rural Broadband Project received clearance under State Aid rules. The project aims to deliver high speed Internet access to white areas, combining fixed and mobile solutions. The Greek authorities announced a financing of €200 million. The proposed network would be realized with the development of both access (including last mile if needed) and transmission networks. It will be state owned and a private partner will undertake exploitation and maintenance for a period of 10 years.

The Metropolitan Area Networks (MAN 2) project was redesigned to allow the exploitation and development of existing optical infrastructure in 68 cities in order to deliver FTTC (fibre to the curb) or FTTH to approximately 150 000 buildings. The project was notified under state aid rules, and if cleared, is expected to be launched in the first half of 2012, as a Public Private Partnership. Participation in both projects seems to be restricted to not vertically integrated network operators, in order to ensure equal access of all retail providers to NGA infrastructure.

With regard to the FTTH project, the Government has revised its initial parameters according to a study provided by an external techno-economic consultant. The project intends the creation of a point to point (P2P) dark fibre open access network.

The Greek incumbent continued its 3 year plan for the deployment of its new optical access network (GPON - Gigabit Passive Optical Networking - FTTC with the use of VDSL2 technology) in Athens, Thessaloniki and a limited number of other cities, which has been delayed pending approval of its wholesale bitstream offer. According to information from the EETT, the roll-out has been concluded in areas covered by 3 local exchanges. The project is still restricted in scope. Alternative operators have continued to invest in LLU, and have manifested interest in participating in the Government's projects. There is no plan, nor governmental strategy on the phasing out of the copper network.

42. VOICE AND OTHER ECOMMUNICATION SERVICES

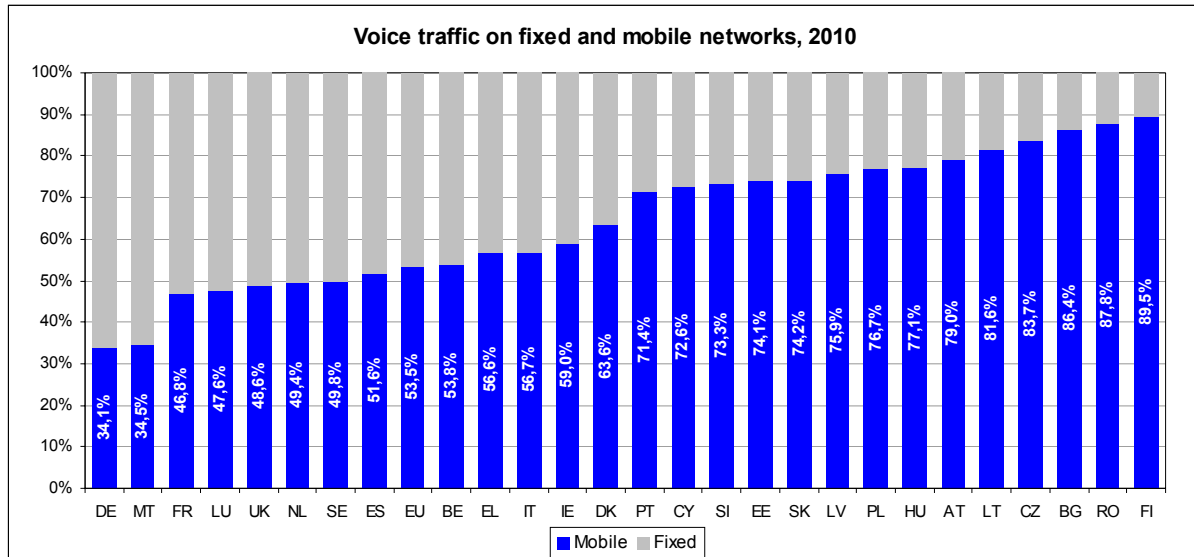
Significant increase in the provision of services through local loop unbundling intensified retail competition on the **fixed market**. As a consequence, the market share of the incumbent (OTE) in the fixed telephony market (all types of calls by traffic volume) significantly decreased to 62.8% in December 2010, which accounted for a 5.8% points decrease over the year. Competition is stagnating in the **mobile market**, where the leading operator outruns its main competitor with 49.8% market share against 26.6%); the third operator follows with 23.6%. Mobile penetration continued to drop substantially below the EU average of 127% (110.9% in October 2011), accentuating a strong impact on revenues, also due to a parallel reduction in the average revenue per minute (APPM)

³⁷ In respect of the provisions of the MoU, in March 2012, the Parliament enacted a law establishing EETT as a One-Stop-Shop for antennae and base stations licensing. The law provides transitional provisions, allowing the providers a 24 month period to ensure licensing of existing illegal constructions, after the expiration of which they will be obliged to dismantle them. In addition, a Ministerial decision on on "Installations of small base stations and of low nuisance antennae, which are exempted from authorisation" was issued in March 2012.

and the average revenue per user (ARPU).

42.1. Mobile services

Voice traffic on fixed and mobile networks, 2010



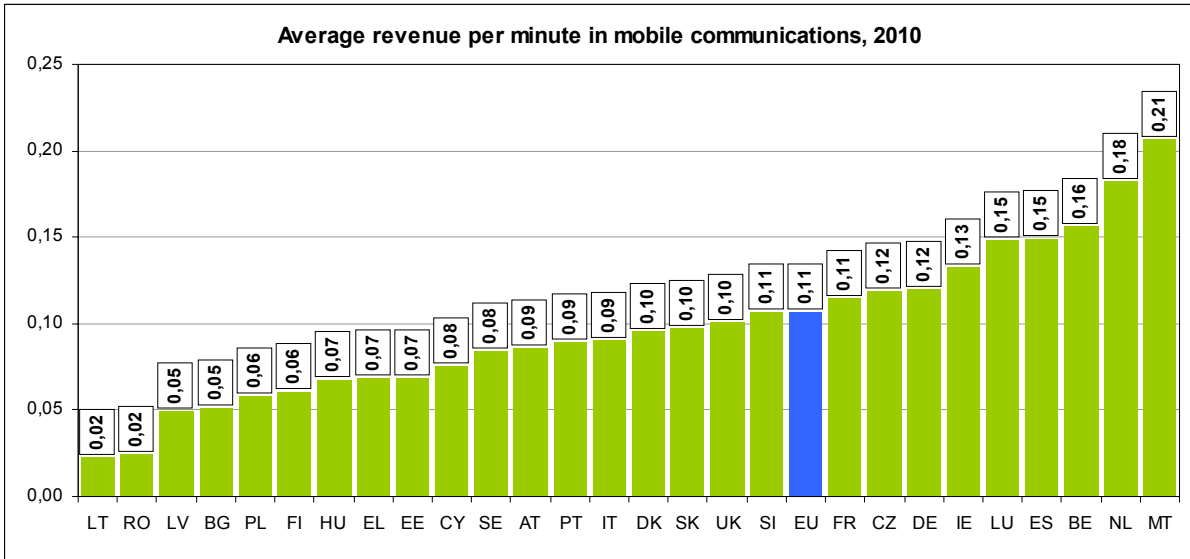
Source: Commission services

Market situation

Mobile penetration in Greece continued to drop substantially below the EU average of 127% in October 2011, dropping to 110.9% in October 2011, compared to 115% a year before.

The impact on revenues was strong, due to a parallel reduction in the average revenue per minute (APPM) and the average revenue per user (ARPU). The APPM decreased to €0.07 in 2010, below the EU average of €0.11. The ARPU decreased from €266 in 2009 to 201 in 2010, comparing to the EU average of €221. Consumer preference towards pre-paid cards is confirmed (64% in October 2011 compared to 65% in October 2010).

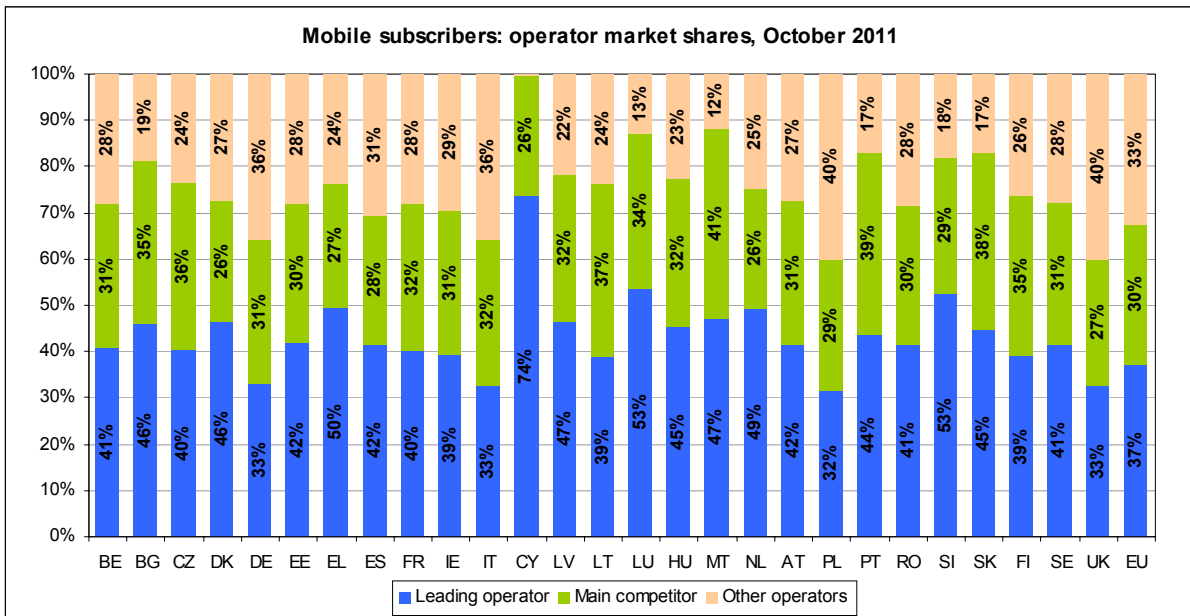
Average Revenue per Minute (ARPM) in mobile communications, 2010



Source: Commission services

The leading MNO displayed the fourth highest market share in Europe (49.8%) for 2011 and the third largest difference from its main competitor, which is following with almost half its market share (26.6%). The third MNO is close behind with 23.6%³⁸. Plans for a merger between the second and third mobile operators were aborted, prior to notification.

Operators' market shares at EU level, October 2011



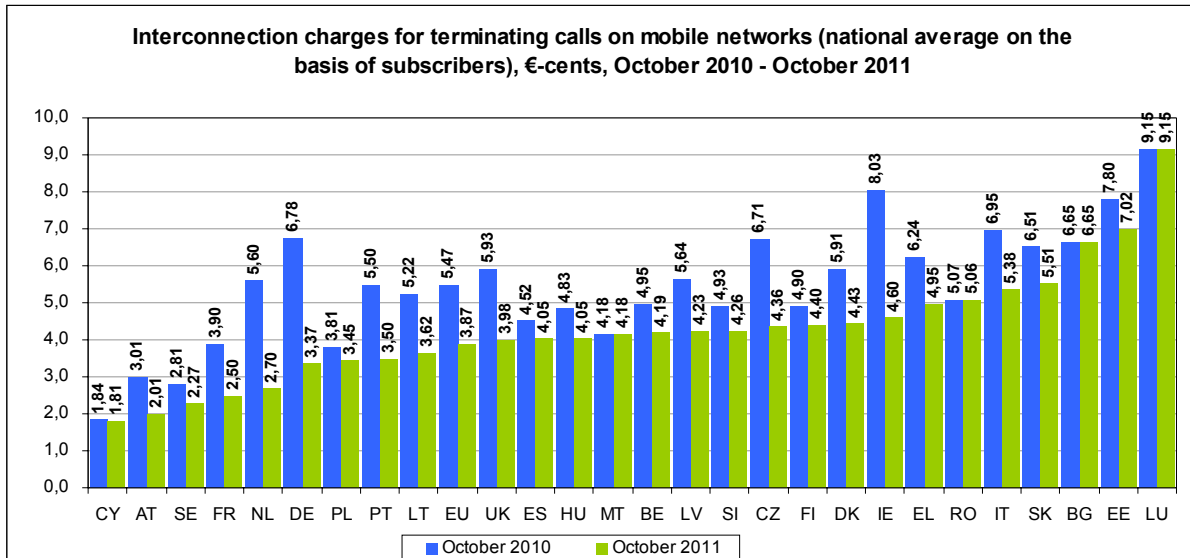
Source: Commission services

Mobile termination rates (MTRs) were reduced from 6.24 € to 4.95 € as of 1 January 2011 and are symmetric for all mobile network operators. EETT is in the process of revising its bottom-up model for the calculation of MTRs in line with the European Commission's

³⁸ According to data available from the Screen Digest.

Recommendation.

Mobile termination rates by member states, October 2010-October 2011



Source: Commission services *Regulatory issues*

According to the terms of the tender procedure for the granting of rights of use in the 900 MHz and 1800 MHz frequency bands, the three MNOs who acquired rights of use through this auction have an obligation to provide MVNO access. While this obligation requires them to negotiate with interested providers, and allows EETT to intervene through the dispute resolution procedure, no MVNO agreement has been signed yet.

Roaming regulation

There is no indication of any MNO failing to comply with the Roaming Regulation of July 2009. The operators apply by default the Eurotariff but also promote alternative tariffs to their subscribers. Although these tariffs are in some cases less favourable than the Eurotariff, subscribers opt for them, thereby contributing to increased average revenue per minute.

42.2. Fixed

Market situation

The increase in the provision of services through local loop unbundling (1 642 183 fully unbundled lines in January 2012, compared to 1 379 743 LLU lines in January 2011) intensified retail competition on the fixed market. A substantially increasing percentage of Greek consumers are subscribed to the network of an alternative operator for direct access (29.1% in July 2011 compared to 22.1% in July 2010 – a figure which is now very close to the EU average of 30.1%). The gains are clearly reflected in the percentage of subscribers using an alternative provider for national calls (an increase of 6.5 percentage points in 12 months, reaching 33% in July 2011 compared to 26.5% in January 2010) as well as for international calls (34.4% in July 2011 compared to 28.6% in 2010). The market share of the incumbent in the fixed telephony market (by traffic volume) significantly decreased to 62.8% in December 2010, which accounted for a 5.8% percentage points decrease over the year.

The trend towards bundled offers has been maintained, but the impact of bundled packages in

the market is still low, amounting to 17.4% of the subscriptions (EU-27 average 22.2%). Bundles concern almost exclusively double-play (16.5%), while only 1% concern triple-play services. VoIP telephony penetration is stalled in Greece, totalizing a share of 2.8% in December 2010, comparing to 2% a year before. This is significantly below the EU average of 23.1%.

Regulatory issues

Termination rates for local interconnection have been further decreased by 0.03€, reaching 0.39 € in October 2011 (EU average 0.43 €). Similar decreases are recorded for the termination of single transit traffic (decreasing from 0.71 € to 0.65 € in 2011, with an EU average of 0.62 €). Termination rates for double transit traffic decreased to 0.83 € in October 2011 (from 0.88 € one year earlier), which fell below the EU average of 0.84 €.

EETT completed the second round of review of the market for retail access to the public telephone network at a fixed location for residential and non-residential customers and adopted the final measures relative to the Market for publicly available local and/or national telephone services provided at fixed location for residential and non-residential customers and to the market for publicly available call services to non-geographic numbers provided at a fixed location for residential and non-residential customers, in which the incumbent operator was found to hold SMP.

Regarding the market for access to the public telephone network at a fixed location for residential and non-residential customers, the Commission invited EETT to closely monitor market developments and adapt its market definition and regulatory intervention accordingly, should the market structure of the fixed access market change as regards the substitutability between access products based on different technologies (in particular in terms of their functionalities and pricing) and the further take-up of bundled offers and their substitutability with traditional stand-alone narrowband access products.

Commenting on the three retail markets of the 2003 Recommendation, the Commission had invited EETT to strengthen its efforts to ensure full compliance with wholesale remedies, to justify the proportionality of the proposed remedies, and to reassess the markets without delay, should competition develop on the relevant markets. In its final measures EETT introduced a methodology for the margin squeeze test and predatory pricing tests, within the context of the transparency obligation imposed for retail access to the public telephone network and for local and national calls, in order to analyse single or multi-play offers of electronic communications products and/or services.

42.3. Broadcasting

Terrestrial broadcasting television is still used by the large majority of viewers. Satellite is the second most popular distribution mode amounting to 8.4%, while IPTV offerings fail to penetrate the Greek market recording only 2% in July 2011.

Greece failed to meet the suggested date of 1 January 2012 for the analogue switch-off. The two main platforms offering digital broadcasting services (the state-subsidized broadcaster and a digital network provider) slowly extended their population and territorial coverage (using MPEG4 encoding), but, at the beginning of February 2012, only 10 out of the 23 transmission centres provided by the Joint Ministerial Decision 21161/2008 were active.

43. SPECTRUM MANAGEMENT

Following three public consultations, held by EETT in January, July and September 2011 the Greek authorities successfully completed a tender procedure for the granting of rights of use in the 900 MHz and 1800 MHz frequency bands, raising the total amount of €380.5 million.

Although not all 2G licences expire in September 2012, all 14 lots of 2 x 2.5 MHz available in the 900 MHz band (including spectrum previously allocated to the use of the Army Forces) were auctioned as well as four lots of 2 x 5 MHz in the 1800 MHz band, so that all rights of use expire in 2026. The procedure chosen was a multi-round tender procedure, open also to new entrants. However, only the three incumbent MNOs participated in it.

The procedure was organised in two phases: during the 1st phase, the three participating operators exercised a right to acquire each one 3 lots of 2 x 2.5 MHz in the 900 MHz frequency band at the reserved price. The overall amount collected during this phase was €181.7 million. The 2nd phase of the procedure was completed overall in four rounds. The leading operator acquired an additional lot of 2 x 2.5 MHz in the 900 MHz frequency band, as well as 2 lots of 2 x 5 MHz in the 1800 MHz frequency band. The main competitor acquired 3 lots of 2 x 2.5 MHz in the 900 MHz frequency band, as well as 2 lots of 2 x 5 MHz in the 1800 MHz frequency band. The smallest MNO acquired only 1 additional lot of 2 x 2.5 MHz in the 900 MHz frequency band. The overall amount collected during the second phase of the tender was €198.8 million.

The new rights of use are liberalized according to the amended GSM Directive and are available for GSM and UMTS systems, as well as for other terrestrial systems capable of providing electronic communications services, that can coexist with GSM systems by virtue of Decision 2009/114/EC. There are specific coverage (95% of the population), quality, as well as MVNO obligations.

The spectrum harmonisation Decisions 2009/343/EC was still not implemented at the end of the reporting year, while decisions 2010/166/EC and 2010/368/EC (which includes all the amendments of Decision 2009/381/EC) have been applied. Furthermore, EETT also adapted its Regulation on "Terms of use of Radio Frequencies terms of use" in order to comply with Decisions 2010/368/EU, 2011/251/EU, 2010/166/EU, 2009/766/EC, 2008/626/EC, and amended its Regulation on Spectrum Fees, in order to include a new fees scheme for the operation of CGC stations for the provision of Mobile Satellite Services (Decision 2008/626/EC).

Regarding the Digital Dividend, Greece committed in the context of the MoU to accelerate the liberalisation of the 800 MHz band from analogue broadcasting until 30 June 2013 and to allow its use for electronic communications services.

44. CONSUMER INTEREST

44.1. 116 - Harmonised numbers for services of social value

Three social value numbers were operational at the end of the reporting period and the Greek respondents are amongst the most enthusiastic in Europe as regards their utility.

Numbers 116 000 and 116 111 are operational and used, while the 116 123 number, which has been assigned to a non-profit organisation since July 2010, is operational since the beginning of 2011, although the provision of the services was not fully implemented at the

end of the reporting period. The Greek national regulator has still not assigned the 116 006 and 116 117 numbers. According to the latest Eurobarometer, respondents in Greece are among the most enthusiastic about 116 services in Europe, with close to 100% of them considering them as useful.

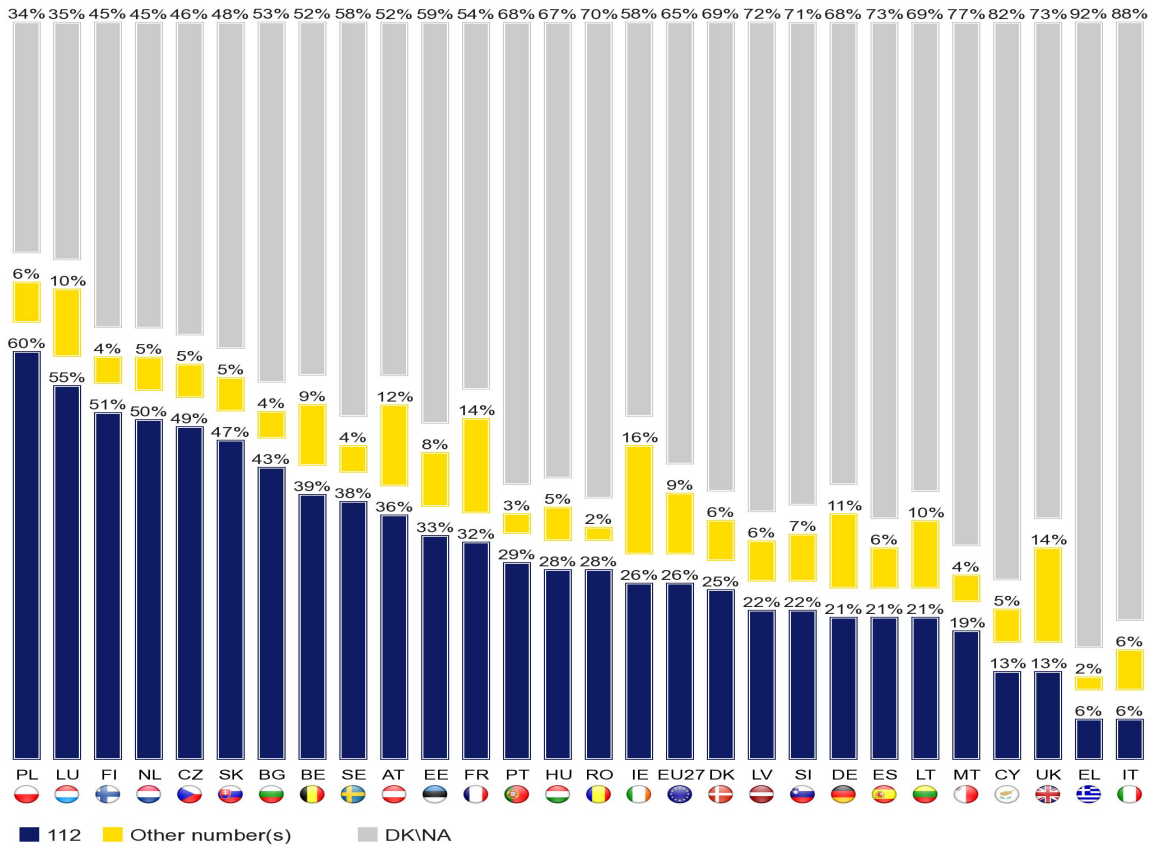
44.2. 112 – European emergency number

Greece scored very low on information and awareness of the European Emergency Number 112.

Awareness of 112 as the EU-wide emergency number:

Can you tell me what telephone number enables you to call emergency services anywhere in the European Union?

(Base: all respondents, % by country)



Source : Eurobarometer 2012

During 2011, due to scarce resources of the General Secretariat of Civil Protection, the promotional campaign for the European emergency number 112 was limited and insufficiently mediatized. As a consequence, Greece ranked last in the Eurobarometer survey, both in awareness (only 6% of the respondents knew that they could reach emergency services anywhere in the EU by calling 112).

The 'pull' system for the provision of caller location information is currently used and plans to replace it by a 'near-to-push' model during 2011 did not materialize. As a consequence, the average time needed to provide mobile caller location upon request was 23 minutes, time varying from 7 at the least to 30 minutes maximum.

44.3. Net neutrality & quality of service

Quality of service remains a priority for the regulator, who developed a broadband quality measurement tool.

In order to improve transparency on the quality of fixed broadband access and Internet services, EETT has developed a Web 2.0 application called SPEBS (System for Performance Evaluation of Broadband Connection Services) featuring broadband quality measurement tools, geo-mapping of broadband connections and their performance characteristics, graphical statistics per connection and historical measurements data.

In November 2011 EETT amended its Quality of Service Decision, in the direction of removing the need to measure obsolete services like fixed indirect (CS/CPS) narrowband services and clarifying the measurement procedures. The new Decision aims at reducing the complexity of its previous decision and the burden it imposed on smaller providers.

44.4. Consumer complaints, tariff transparency

The number of consumer complaints in 2011 tends to stabilise, partly thanks to the new Code of conduct initiated by EETT.

The number of consumer complaints tends to stabilize. Last year's shift towards billing issues proved to be circumstantial and the main sources of complaints for 2011 regarded unauthorised line activation, carrier preselection service or premium rate service activations and a poor quality of service. Disputes on billing or excessive pricing represent only the fifth most important source of complaints. The time for handling complaints was significantly reduced from 12 to 5 working days.

44.5. Number portability/switching

While the number of days needed to **port** a fixed or a mobile **number** is steadily decreasing, a reduction was also recorded on the number of fixed (8.6% of all fixed numbers, down from 8.9%) and mobile (3% of all mobile numbers, down from 3.7%) transactions.

Changes in the new Number Porting Regulation entered into force for fixed numbers whereas for mobile numbers, the changes were already in force since December 2010, reducing the porting time for mobile numbers to 3 working days from the submission of the subscriber's request to the recipient operator and to 1 day from the acceptance of the subscriber's application by the donor operator, for the actual implementation of the number portability. In 2011, 9 days were needed to port a fixed number (10 in 2010) and 1 day for a mobile number (10 in 2010). This reduction was however not reflected by an increase in the number of portings. Fixed portings decreased by 5.8% to 439 613, from January to September 2011 (down from 466 890 from January to September 2010), while mobile portings totalled 368 847 which represents a substantial 23.8% decrease from 484 385 in October 2010. Despite this decrease, Greece ranks, with 8.6% of all fixed numbers ported (from January to

September 2011), second in fixed number portability transactions. Since September 2011, the fees charged by the National Reference Database for portability were significantly reduced to 1.95€ per ported number (from €3.5).

Number Portability: Number of days needed to port a mobile number, October 2011

44.6. Universal service

No major issues on Universal service were reported.

The incumbent operator, who was designated by EETT as the US provider for the provision of access at a fixed location and for the provision of telephone services has submitted a study, estimating the cost of the universal service for the year 2010. No action had been taken until the end of the year.

44.7. ePrivacy

No major issues on e-Privacy were reported

While the Data Retention Directive 2006/24/EC was transposed into the Greek legal order by Law 3917/2011, amendments to the ePrivacy Directive have not yet been transposed. According to the draft law, the competency for data breaches will be divided between two authorities, the Hellenic Data Protection Authority (DPA) and the Authority responsible for the secrecy of communications (ADAE).

Concerning spam, the DPA organised a joint working group with ISPs aiming at the adoption of a self-regulation tool to combat spam. In November 2011, ADAE issued a Regulation detailing the obligations of electronic communications networks and/or services providers regarding the secret of communications. With regard to data breaches, the regulation specifies the procedure for notifying data breaches to the authority and the minimum content of the notification.