

# **ELECTRONIC COMMUNICATIONS MARKET INDICATORS**

## **METHODOLOGICAL NOTE**

The main sources for the data presented in this Annex are National Regulatory Authorities (NRAs), exceptions are noted. A validation meeting with representatives from NRAs took place in November 2010. Furthermore, draft versions of the charts in this annex were distributed to the NRAs before this report was finalised for their comments.

The source for the population figures is Eurostat.

The source for the exchange rates is the European Central Bank. Prices are in Euros. Purchase power parity methodology is not used for the specific objective of this Report.

In each Report figures from previous years are revised, therefore the figure for a certain date may diverge from previous Reports.

This document replaces Annex 2 of the Implementation Report.

## Table of contents

1. FINANCIAL INDICATORS .....	5
1.1 Revenues and Investment of the Telecom Sector .....	5
1.2 Average Price per Minute (APPM) in mobile communications .....	7
1.3 Average Revenue per User (ARPU) in mobile communications.....	8
2. MOBILE MARKET.....	9
2.1 Mobile penetration and market share .....	9
2.2 Mobile number portability .....	11
2.3 Mobile Interconnection .....	13
2.4 Traffic.....	17
3. FIXED MARKET .....	18
3.1 Fixed market share .....	18
3.2 Direct Access.....	24
3.3 Fixed number portability .....	28
3.4 Fixed Interconnection.....	30
4. BROADBAND MARKET.....	34
4.1 Broadband access definitions .....	34
4.2 Wholesale access.....	35
4.3 Retail fixed broadband access .....	37
4.4 Fixed broadband lines by speed .....	53
4.5 Retail mobile broadband access .....	55
4.6 Price of the Local Loop.....	57
5. CONVERGED SERVICES - BUNDLED OFFERS .....	63
6. BROADCASTING.....	65

## Table of figures

Figure 1: Telecom investment over revenue, 2009 .....	5
Figure 2: Telecom revenue and investment over GDP, 2009 .....	5
Figure 3: Telecom revenues growth, 2008-2009 .....	6
Figure 4: Telecom investment growth, 2008-2009 .....	6
Figure 5: Average price per minute (APPM) in mobile communications, 2008-2009 .....	7
Figure 6: Average revenue per user, 2008-2009 .....	8
Figure 7: Mobile subscribers and penetration rate at EU level, October 2004 – October 2010 .....	9
Figure 8: Mobile penetration rate, October 2009 – October 2010 .....	9
Figure 9: Mobile subscribers: prepaid and monthly paid, October 2010 .....	10
Figure 10: Mobile market share based on subscribers, October 2010 .....	10
Figure 11: Mobile number portability – transactions, 2009-2010 .....	11
Figure 12: Mobile number portability – number of ported numbers, 2009-2010 .....	12
Figure 13: Time taken in number of days for mobile number portability, October 2010 .....	12
Figure 14: Interconnection charges for terminating calls on mobile networks at EU level, 2005-2010 .....	13
Figure 15: Interconnection charges for terminating calls on mobile networks, October 2009 - October 2010 .....	14
Figure 16: Interconnection charges for terminating calls on mobile networks by operator, October 2010 .....	15
Figure 17: Voice traffic on fixed and mobile networks at EU level, 2005-2009 .....	17
Figure 18: Voice traffic on fixed and mobile networks, 2009 .....	17
Figure 19: Incumbents' overall average market share on the fixed voice telephony market at EU level, 2004-2009 .....	18
Figure 20: Fixed telephony market concentration (based on the Herfindhal-Hirschman index), December 2009 .....	19
Figure 21: Incumbent's market share – all types of calls by retail revenues, 2008-2009 .....	20
Figure 22: Incumbent's market share – all types of calls by volume, 2008-2009 .....	21
Figure 23: Incumbent's market share – national calls by volume, 2008-2009 .....	22
Figure 24: Incumbent's market share – international calls by volume, 2008-2009 .....	22
Figure 25: Incumbent's market share – calls to mobile by volume, 2008-2009 .....	23
Figure 26: Market share of VoIP operators by volume, 2009 .....	24
Figure 27: Number of alternative operators offering voice telephony through direct access, July 2010 .....	25
Figure 28: EU subscribers using an alternative provider for fixed voice services, July 2008 – July 2010 .....	26
Figure 29: Subscribers using an alternative provider, July 2010 .....	26
Figure 30: Subscribers using the incumbent for direct access, July 2010 .....	27
Figure 31: Number of subscribers using an alternative provider for direct access, July 2010 .....	27
Figure 32: Fixed number portability - transactions, 2009-2010 .....	28
Figure 33: Fixed number portability – number of ported numbers, 2009-2010 .....	29
Figure 34: Time taken in number of days for fixed number portability, October 2010 .....	29
Figure 35: Fix interconnection charges for call termination on incumbent's network at EU level, 2005-2010 .....	30
Figure 36: Interconnection charges – Local level, October 2009 – October 2010 .....	31
Figure 37: Interconnection charges – Single transit, October 2009 – October 2010 .....	32

Figure 38: Interconnection charges – Double transit, October 2009 – October 2010 .....	33
Figure 39: Fixed broadband lines at EU level, January 2004 - January 2011.....	40
Figure 40: Fixed broadband penetration at EU level, January 2004 - January 2011.....	40
Figure 41: Fixed broadband lines growth per day at EU level, January 2004 - January 2011 .....	41
Figure 42: Fixed broadband lines, January 2011 .....	41
Figure 43: Fixed broadband penetration, January 2011 .....	42
Figure 44: Fixed broadband penetration and speed of progress, January 2010 – January 2011 .....	42
Figure 45: EU fixed broadband lines – operator market shares at EU level, January 2006 – January 2011 .....	43
Figure 46: EU fixed broadband lines – net adds per day by operator at EU level, January 2006 – January 2011 .....	43
Figure 47: EU fixed broadband lines – operator market shares, January 2011 .....	44
Figure 48: Fixed broadband lines – new entrants' market share, January 2009 – January 2011 .....	44
Figure 49: Fixed broadband lines – operator market shares at EU level (resale shown separately), January 2011 .....	45
Figure 50: Fixed broadband lines – operator market shares at EU level (resale shown separately), January 2006 – January 2011 .....	45
Figure 51: Fixed broadband lines – incumbents' market share excluding/including resale lines, January 2011 .....	46
Figure 52: Fixed broadband lines – technology market shares at EU level, January 2006 – January 2011 .....	46
Figure 53: Fixed broadband lines – technology market shares, January 2011 .....	47
Figure 54: Fixed broadband net adds by technology at EU level, January 2006 – January 2011 .....	47
Figure 55: DSL lines, January 2011 .....	48
Figure 56: DSL lines and market share at EU level, January 2006 – January 2011 .....	48
Figure 57: DSL lines – operator market shares at EU level, January 2006 - January 2011 .....	49
Figure 58: DSL lines – operator market shares, January 2011 .....	49
Figure 59: DSL lines – new entrants' market share, January 2009 - January 2011 .....	50
Figure 60: New entrants' DSL lines by type of access at EU level, January 2011.....	50
Figure 61: New entrants' DSL lines by type of access at EU level, January 2008 - January 2011 .....	51
Figure 62: New entrants' DSL lines by type of access, January 2011 .....	51
Figure 63: Cable internet lines, January 2011 .....	52
Figure 64: Cable internet lines at EU level, January 2011 .....	52
Figure 65: Fixed broadband lines by speed at EU level, January 2008 – January 2011 ..	53
Figure 66: Fixed broadband lines by speed, January 2011 .....	53
Figure 67: Very high speed fixed broadband lines, January 2011 .....	54
Figure 68: Mobile broadband – all active users, January 2011 .....	55
Figure 69: Mobile broadband penetration – all active users, January 2011 .....	55
Figure 70: Mobile broadband users – dedicated data service cards/modems/keys only, January 2011 .....	56
Figure 71: Mobile broadband penetration – dedicated data service cards/modems/keys only, January 2011 .....	56
Figure 72: LLU monthly average total cost at EU level, October 2005 – October 2010 ..	57
Figure 73: LLU monthly average total cost, October 2010 .....	58

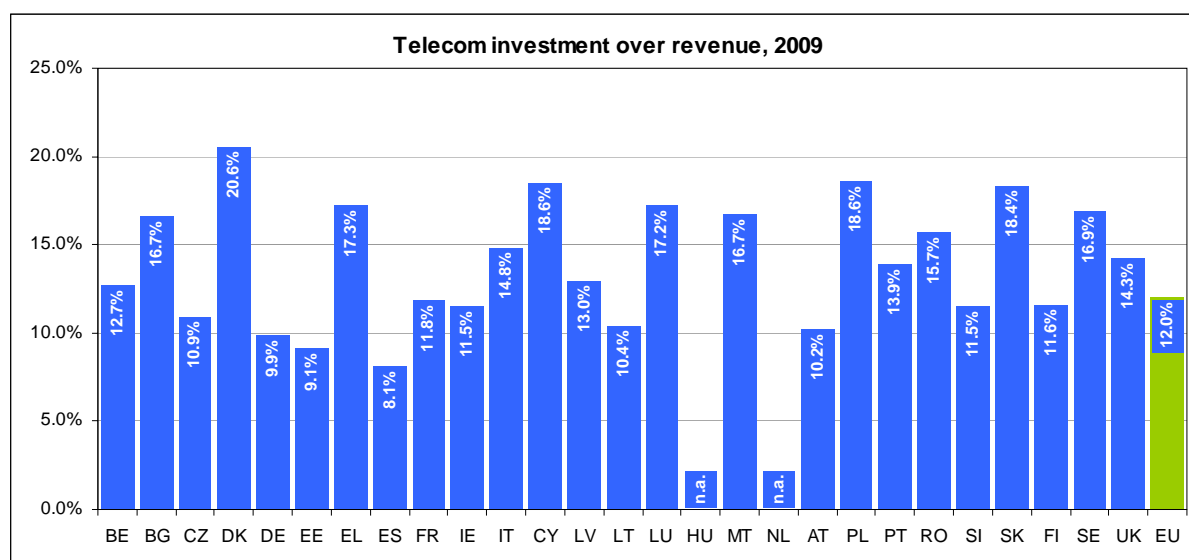
<b>Figure 74: LLU monthly average total cost per fully unbundled loop, October 2009 – October 2010.....</b>	<b>58</b>
<b>Figure 75: LLU monthly average total cost per shared access, October 2009 – October 2010.....</b>	<b>59</b>
<b>Figure 76: LLU connection cost per fully unbundled loop, October 2009 – October 2010 .....</b>	<b>59</b>
<b>Figure 77: LLU monthly rental cost per fully unbundled loop, October 2009 – October 2010 .....</b>	<b>60</b>
<b>Figure 78: LLU connection cost per shared access, October 2009 – October 2010 .....</b>	<b>61</b>
<b>Figure 79: LLU monthly rental cost per shared access, October 2009 – October 2010 ..</b>	<b>62</b>
<b>Figure 80: Bundled offer penetration, July 2010 .....</b>	<b>63</b>
<b>Figure 81: Penetration of double and triple play, July 2010 .....</b>	<b>64</b>
<b>Figure 82: Household penetration of different broadcasting services, July 2010 .....</b>	<b>65</b>
<b>Figure 83: IPTV household penetration, July 2010 .....</b>	<b>65</b>

## 1. FINANCIAL INDICATORS

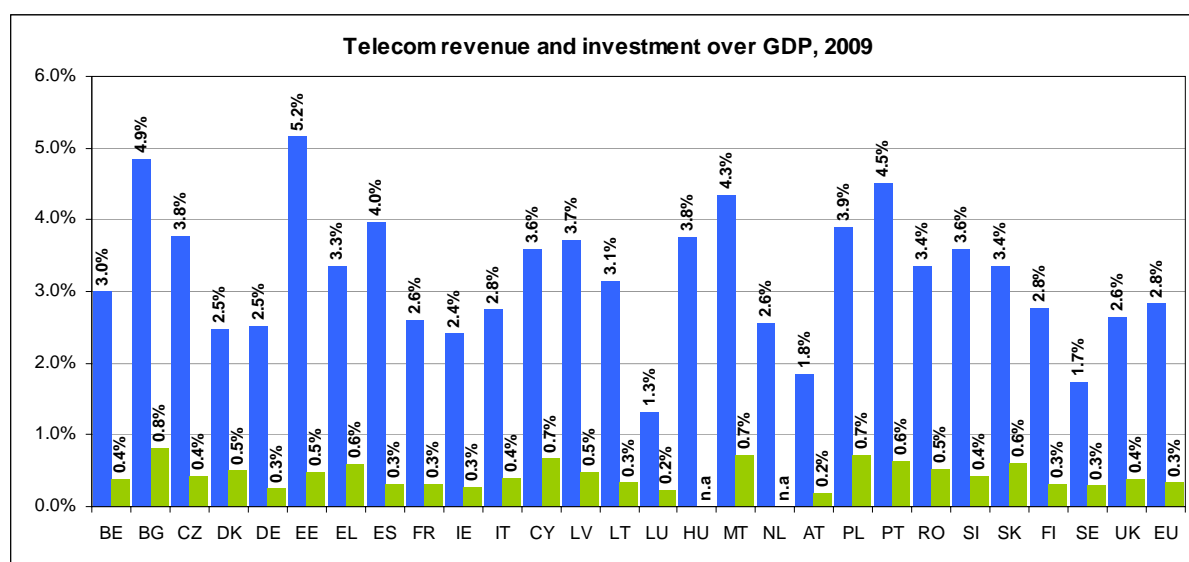
### 1.1 Revenues and Investment of the Telecom Sector

Both retail and wholesale revenues are considered.

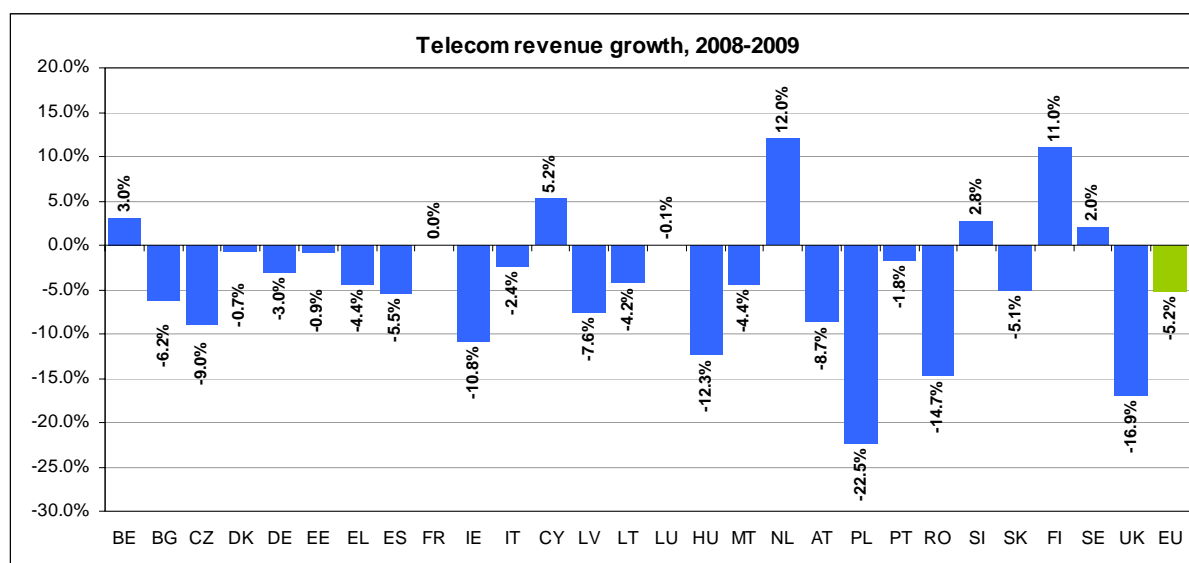
**Figure 1: Telecom investment over revenue, 2009**



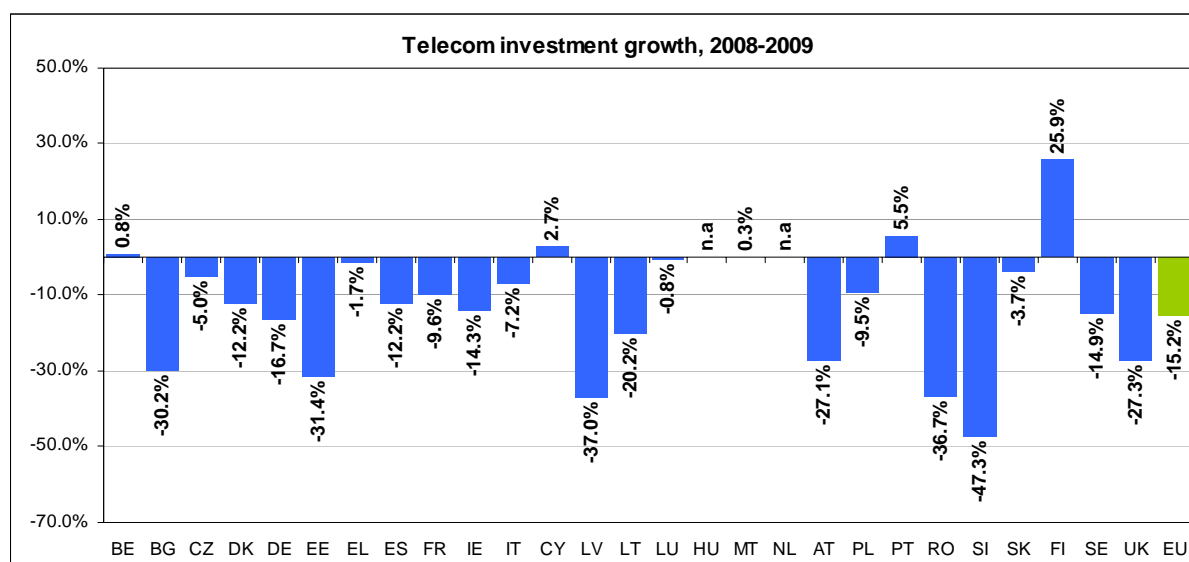
**Figure 2: Telecom revenue and investment over GDP, 2009**



**Figure 3: Telecom revenues growth, 2008-2009**



**Figure 4: Telecom investment growth, 2008-2009**



**Spain:** Broadcasting services are included and they add 4,540.7 euros overall.

**Italy:** Source: Agcom Annual Report 2010. Revenue is consolidated turnover excluding revenues from "Terminals and devices".

**Poland:** Gross values.

**Romania:** The total turnover includes revenues from broadcasting (1.897 million RON) and other electronic communications services (90 million RON). The total investment in telecom networks includes investment in cable networks as the majority of these networks are used for internet access and/or fixed telephony (202 million RON). The value of the Investment in other EU member States is not included in Total investment in telecom networks.

**Austria:** Investments in acquiring property (land and building) not included.

**Czech Republic:** Tangible and intangible investments indicated.

**Greece:** The figures concern total investments.

**Germany:** Aggregate data include estimations for investment.

**Netherlands:** Investment data are not available.

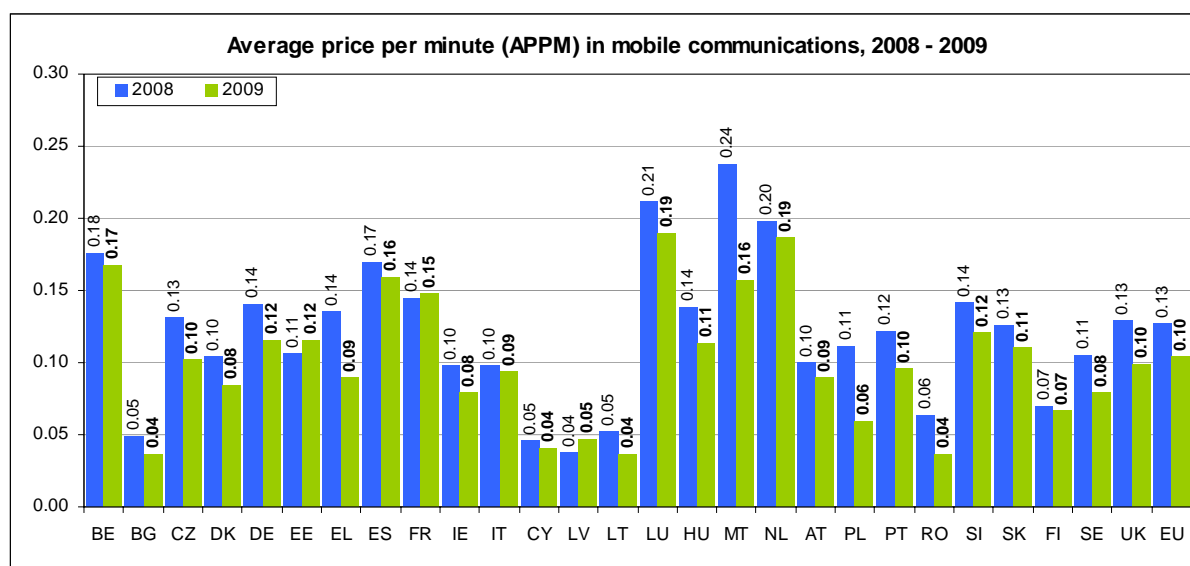
**Portugal:** 2008 figures for investment were re-stated.

**Slovakia:** Both tangible and intangible investments are included.

## 1.2 Average Price per Minute (APPM) in mobile communications

The Average Price per Minute is defined as the revenues from mobile voice communications divided by the total outgoing minutes of voice communication excluding VAT, but including access charges.

**Figure 5: Average price per minute (APPM) in mobile communications, 2008-2009**



**Austria:** revenues include monthly fees and subscription fees.

**Belgium:** monthly fees are included.

**Bulgaria:** The "free minutes" traffic, paid with the monthly fees is included in the total amount of generated traffic. On the other hand, the revenues from monthly fees are not included.

**France:** A part of the data revenues (corresponding to data used via bundled offer) are included.

**Germany:** Wholesale revenues between MNOs and MVNOs are excluded. Aggregate data include estimations.

**Italy:** Source: Agcom Annual Report 2010. Revenue definition changed in 2009

**Netherlands:** The revenue for 2009 includes acquisition costs, fixed costs, handsets and accessories revenues, too.

**Portugal:** Monthly subscription revenues are not included.

**Slovenia:** Revenues include access charges (i.e. monthly subscriptions not including connection fees). Monthly subscriptions for bundled services may in addition to free voice minutes include also free SMS, MMS, data services, etc. Retail roaming included.

**Luxembourg:** Revenues include subscription fees, outgoing roaming and international traffic For two operators all kinds of flat rate revenues are included

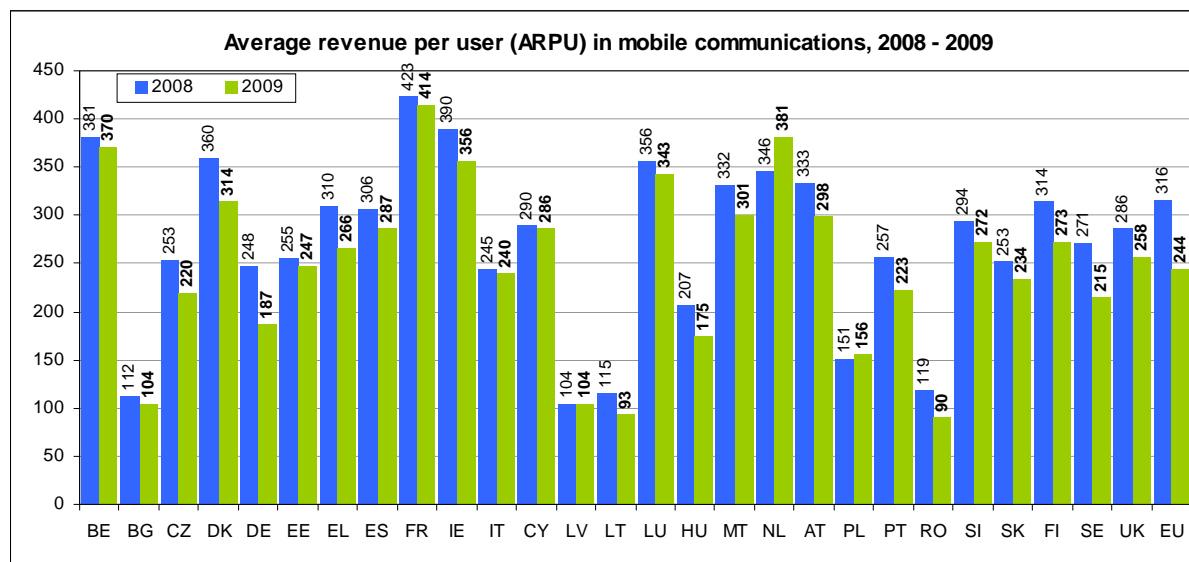
**United Kingdom:** Revenue figures include revenue from access charges and bundled texts and data allowances.



### 1.3 Average Revenue per User (ARPU) in mobile communications

The ARPU is defined as the total revenues (including also retail roaming, interconnection as well as handset subsidies) divided by the average number of subscribers (number of subscribers at the beginning and end of the year divided by two). VAT is excluded.

**Figure 6: Average revenue per user, 2008-2009**



**Estonia:** The operator OÜ Top Connect is not included.

**Germany:** Wholesale revenues between MNOs and MVNOs are excluded. Aggregate data include estimations.

**Ireland:** One operator's prepaid data is excluded.

**Italy:** Source: Agcom Annual Report 2010. Total revenues exclude terminals and devices. Revenue definition changed in 2009.

**Slovenia:** Revenues include retail service revenues (incl. roaming) and interconnection revenues.

**Sweden:** Retail roaming revenues and interconnection revenues are not included.

**Luxembourg:** Revenues include subscription fees, outgoing roaming and international traffic.

## 2. MOBILE MARKET

### 2.1 Mobile penetration and market share

Figure 7: Mobile subscribers and penetration rate at EU level, October 2004 – October 2010

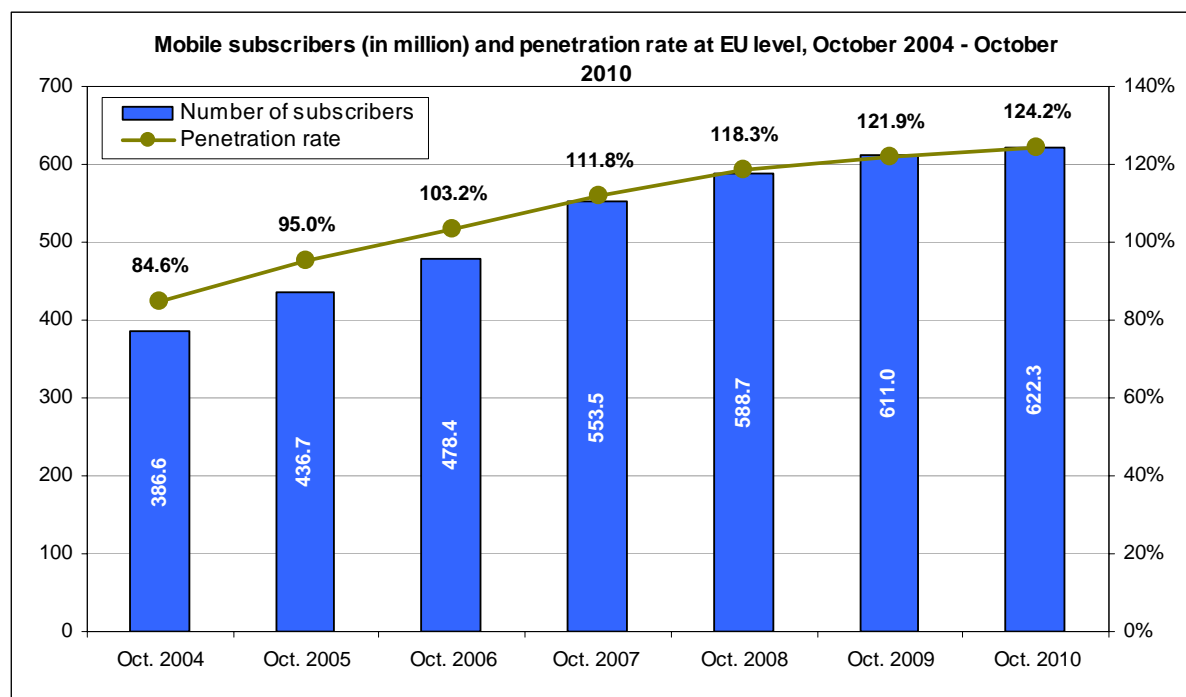


Figure 8: Mobile penetration rate, October 2009 – October 2010

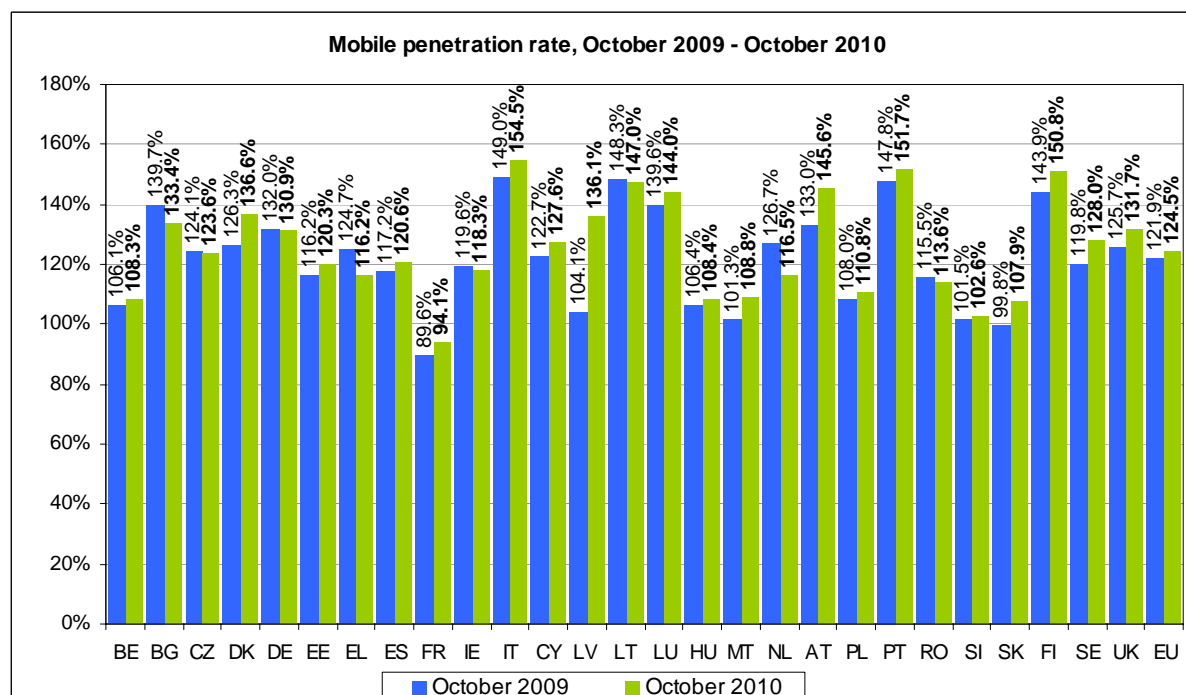


Figure 9: Mobile subscribers: prepaid and monthly paid, October 2010

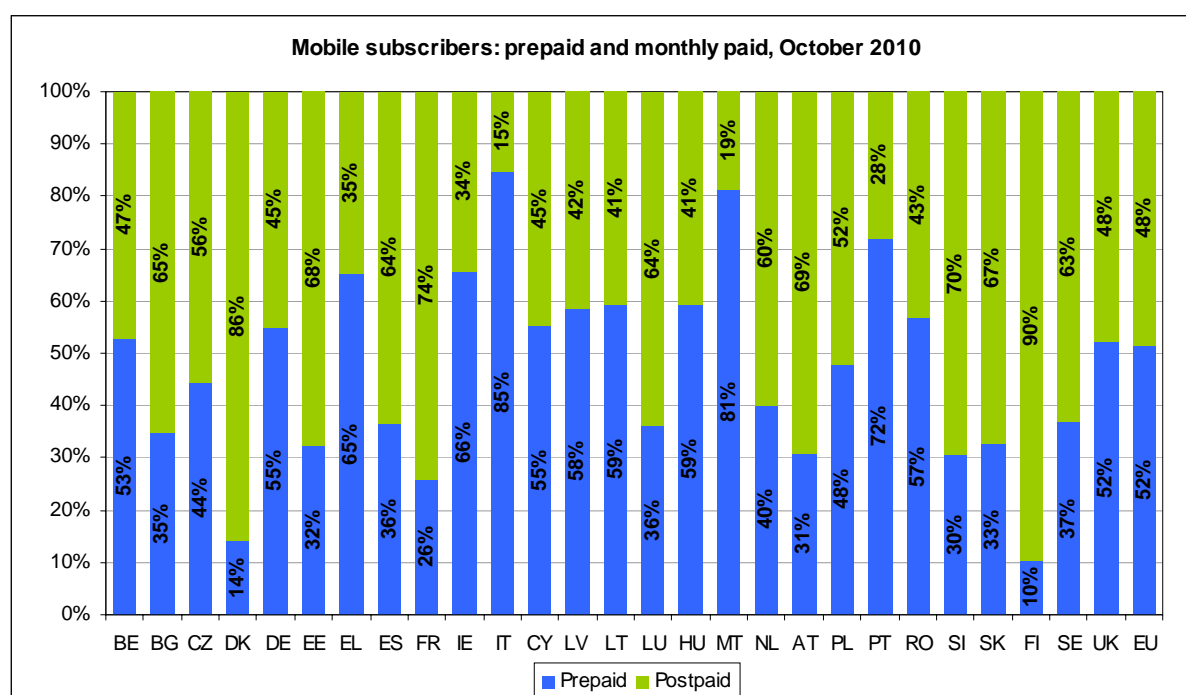
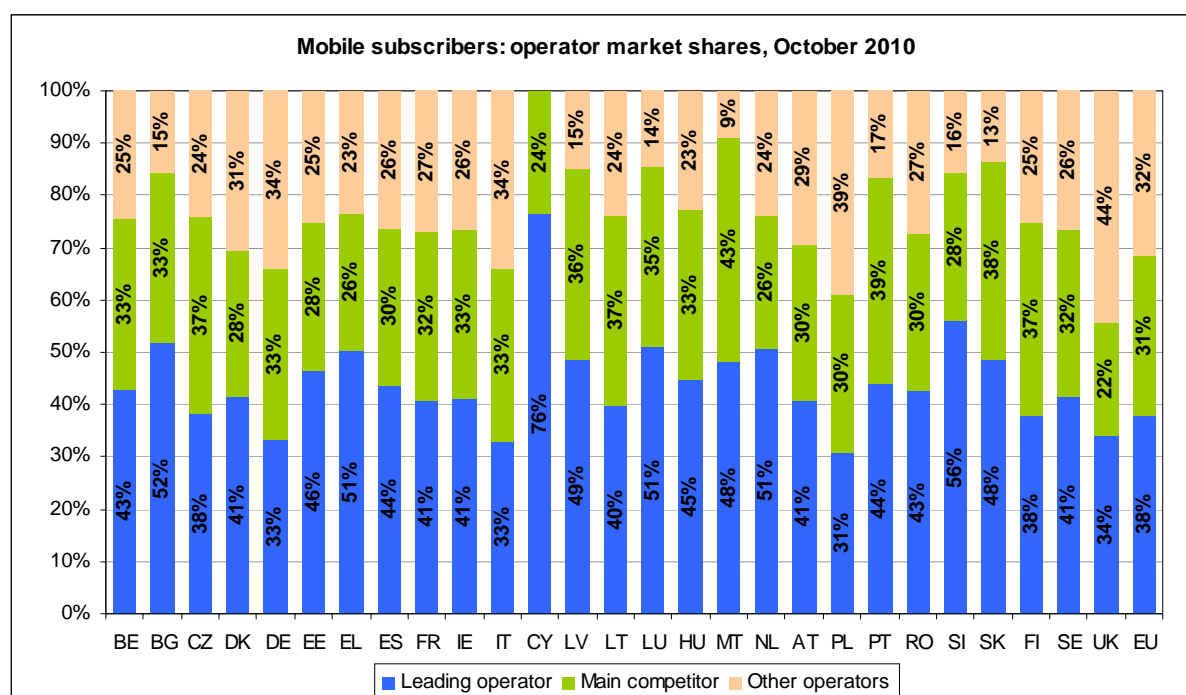


Figure 10: Mobile market share based on subscribers, October 2010



Data on market shares for The Netherlands and Greece come from Screen Digest.

**Austria:** Data as of June 30 2010. Source of the operator market shares: RTR Telekom Monitor 4/2010

**Bulgaria:** The active period of the pre-paid cards for all mobile operators is 12 months.

**Cyprus:** Data for 2009 have been restated.

**Denmark:** Data as of the 30th of June 2010.

**Estonia:** Subscribers of TarvelSIM are excluded as these SIMs are mostly used outside of Estonia and many of them are not active.

**Spain:** data as of 1.9.2010.

**Germany:** The leading operator changed its definition of active pre-paid subscribers.

**Luxembourg:** Data is as of end of the year for EPT/Luxgsm, Tango, Orange (just pre-paid).

**United Kingdom:** All data refers to end September 2009 and March 2010.

**Portugal:** OPTIMUS Post-paid includes hybrid tariff plans. TMN (post and pre paid) values for 1.10.2010 are estimates. TMN post paid includes hybrid tariff plans

**Finland:** Data as of 1 July of the given year.

**Netherlands:** Prepaid postpaid split is not available for some small operators. Penetration decreased in 2010 due to the removal of inactive prepaid customers at T-mobile and KPN.

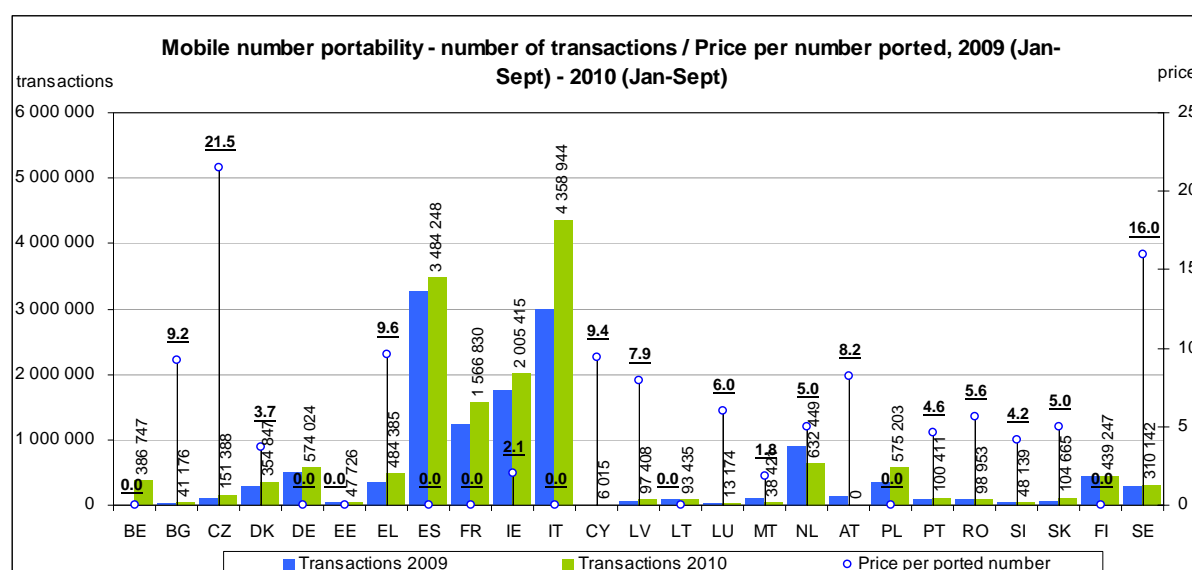
## 2.2 Mobile number portability

Mobile number portability enables subscribers to retain their number when moving from one operator to another.

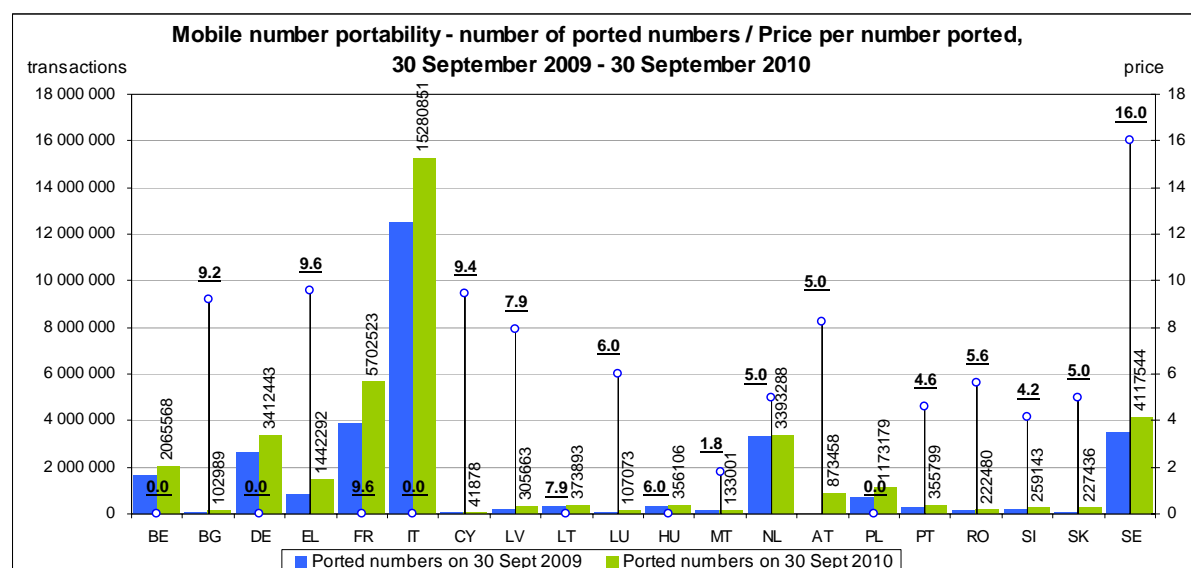
Figures are provided by NRAs and include the number of transactions calculated up to 1 October each year. Data also include the average number of days taken to port a number as well as the cost of porting a number. Inter-operator prices for number portability refer to the amount charged by the leading operator to the recipient operators for porting one telephone geographic number (excluding VAT). This price may vary depending on a number of factors. In some countries the price for a non - geographic number is different. Where available, information on price for non-geographic number portability is added in the footnote. In some countries there is no charge for the porting of numbers.

Two different measurements were used on number portability. 'Transactions' refer to the total number of number portings between 1 January and 30 September each year. 'Ported numbers' refer to the number of those numbers that are held by another operator than the range holder on 30 September each year.

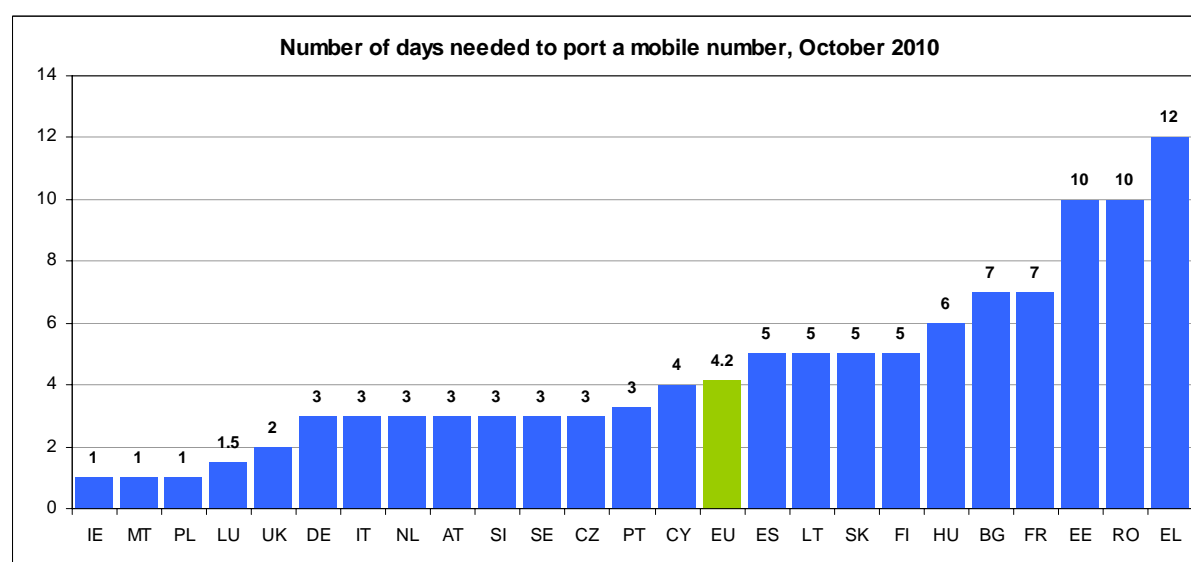
**Figure 11: Mobile number portability – transactions, 2009-2010**



**Figure 12: Mobile number portability – number of ported numbers, 2009-2010**



**Figure 13: Time taken in number of days for mobile number portability, October 2010**



**Czech Republic:** The time limit for making a number available for porting is 5 hours (prepaid) or 3 days (postpaid). The day of port is set by the customer; the choice is possible between 1 and 10 days.

**Germany:** The interruption of service is less than a day, if notified on time. Transactions are at least 574,024 in 2010 and 508,518 in 2009. For mobile numbers, one transaction concerns one number. As some numbers have been ported more than one time, the real figures are higher.

**France:** Average current time is 7 days, maximum 10 days; interruption time is 4 hours. There is no price for porting.

**Italy:** Time needed for porting is 3 working days

**Hungary:** Time needed for porting is maximum 8 working days and an average of 6 working days. Price is subject to commercial negotiations.

**Portugal:** Since July 2009, according the up-dated NP Regulation, the minimum time enforced to the donor for number portability is 2 working days. This time is managed by the recipient.

**Bulgaria:** Time limit for mobile number portability is same for all operators - 7 working days.

**Netherlands:** Technical porting: is less than 2 hours. For the end-user (from request to end of technical porting): Average: 3 days (max 10 days). Price is between 0 and 5 EUR.

**Austria:** The porting process is completed within 3 days at maximum. Typical cases are shorter but no detailed information is available. The porting user is reachable at all times during the porting process for incoming calls. Maximum price is provided.

**Poland:** Needed time for porting depends on the mode of transfer: 1 day or any period set by the client, from 30 to 59 days with notice of the donors.

**Slovenia:** Time needed is maximum 3 working days. Maximum price is provided.

**Romania:** Time needed: maximum time allowed is shown. Maximum price is provided.

**Finland:** Time needed refers to working days

**United Kingdom:** 2 working days remains the current time taken to port 25 or less (non-bulk) mobile numbers. Following a review in 2010 this will be reduced to 1 working day from April 2011.

**Denmark:** Transactions refer to the period between 1 January and the 30 June.

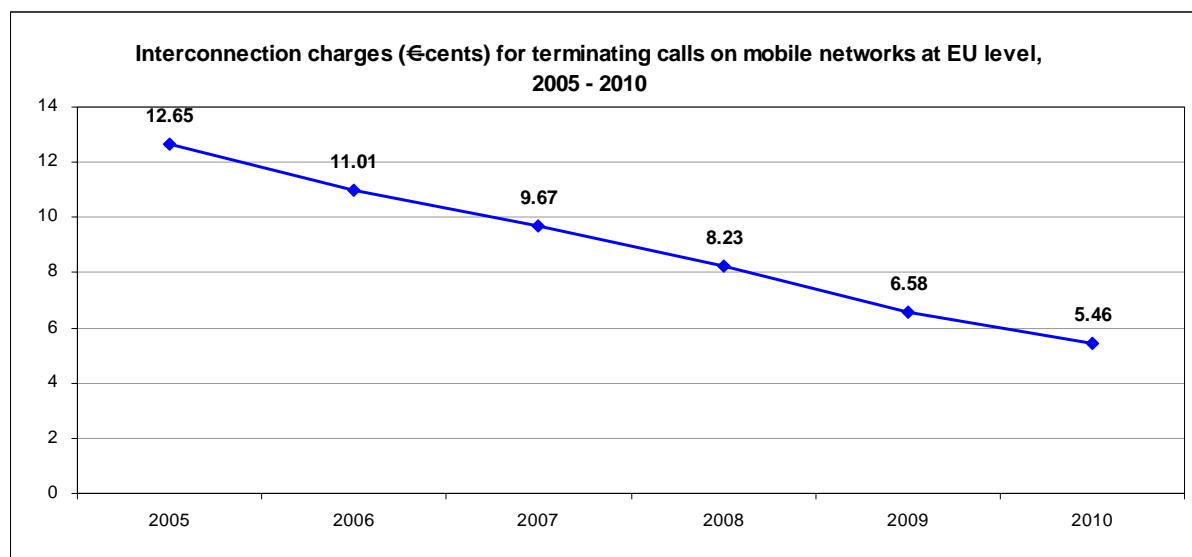
**Spain:** For mobile numbers: data cards are included. M2M are not included.

**Belgium:** Price is not applicable (subject to legal base).

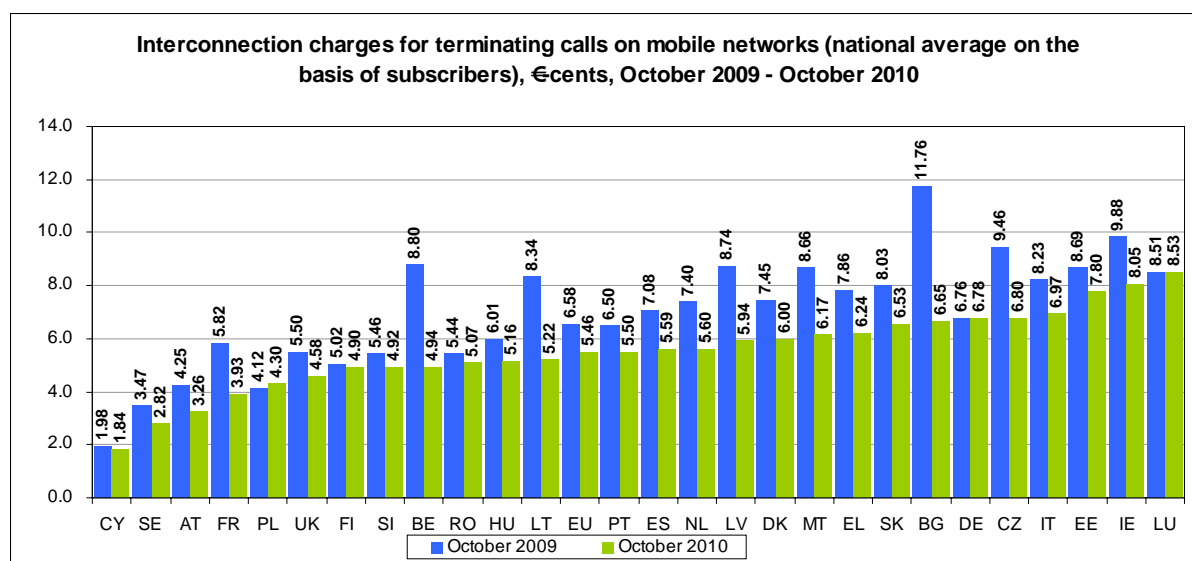
**United Kingdom:** No data is available

## 2.3 Mobile Interconnection

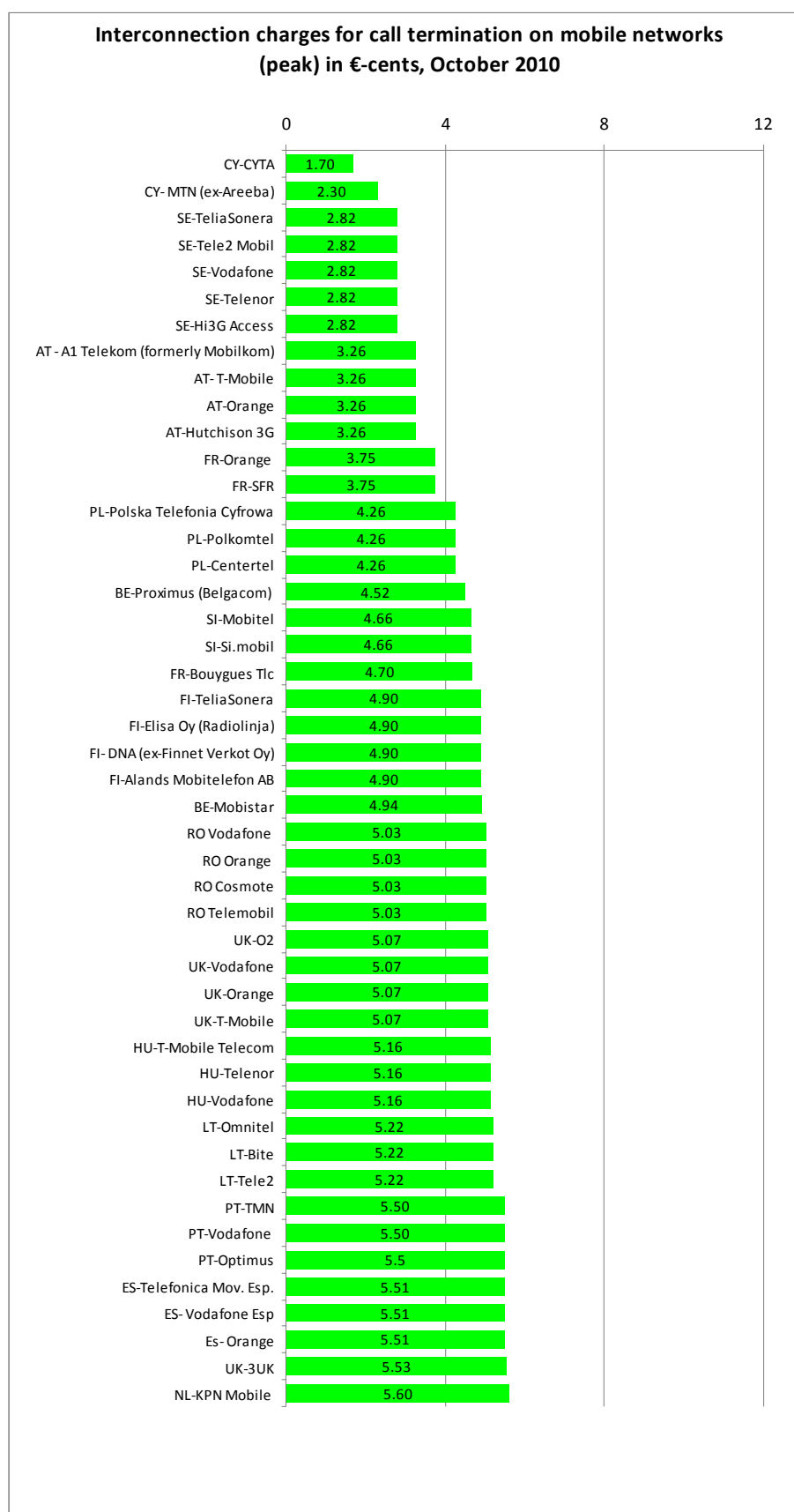
**Figure 14: Interconnection charges for terminating calls on mobile networks at EU level, 2005-2010**



**Figure 15: Interconnection charges for terminating calls on mobile networks, October 2009 - October 2010**

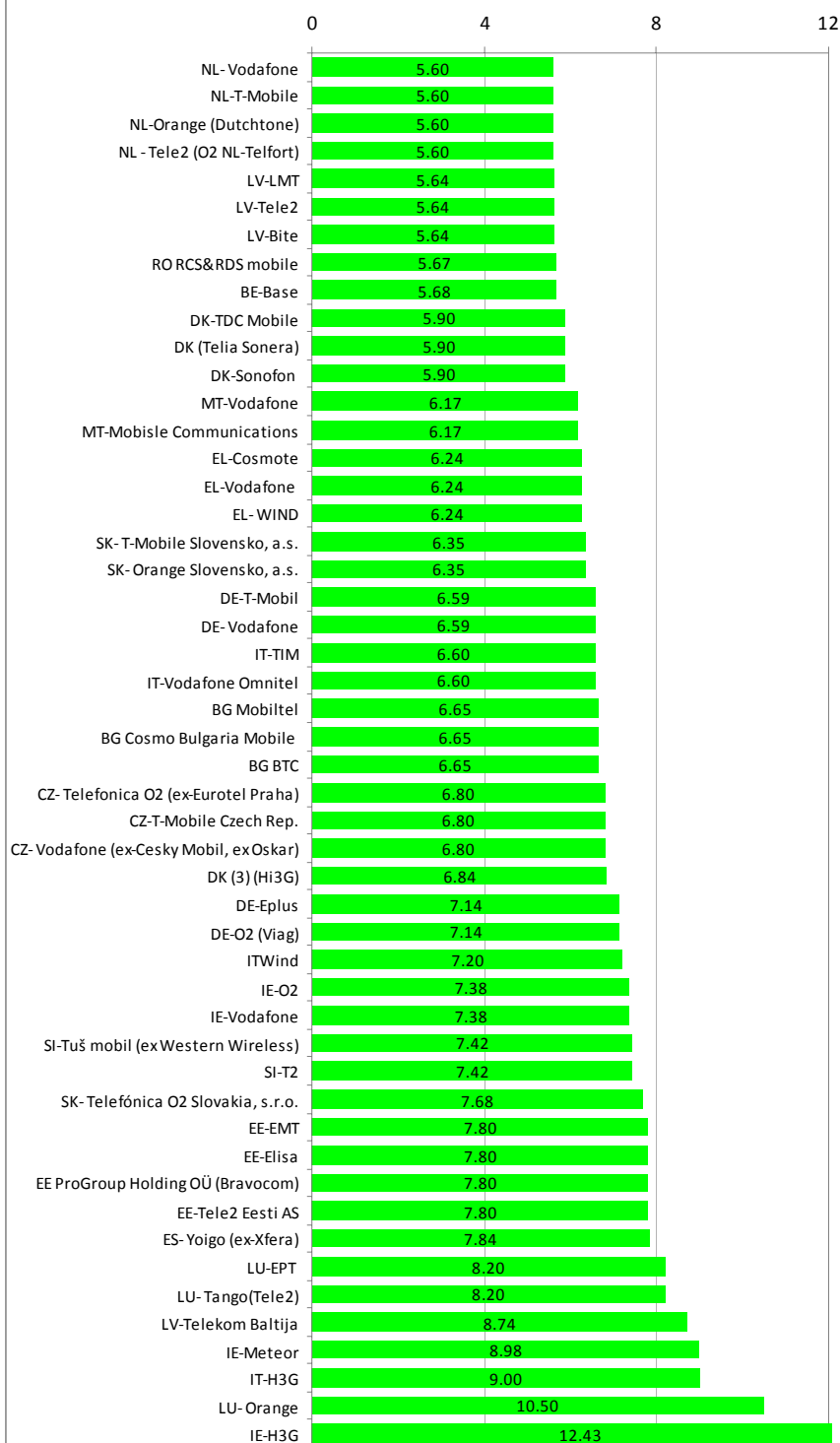


**Figure 16: Interconnection charges for terminating calls on mobile networks by operator, October 2010**





**Interconnection charges for call termination on mobile networks  
(peak) in €-cents, October 2010**



## 2.4 Traffic

Figure 17: Voice traffic on fixed and mobile networks at EU level, 2005-2009

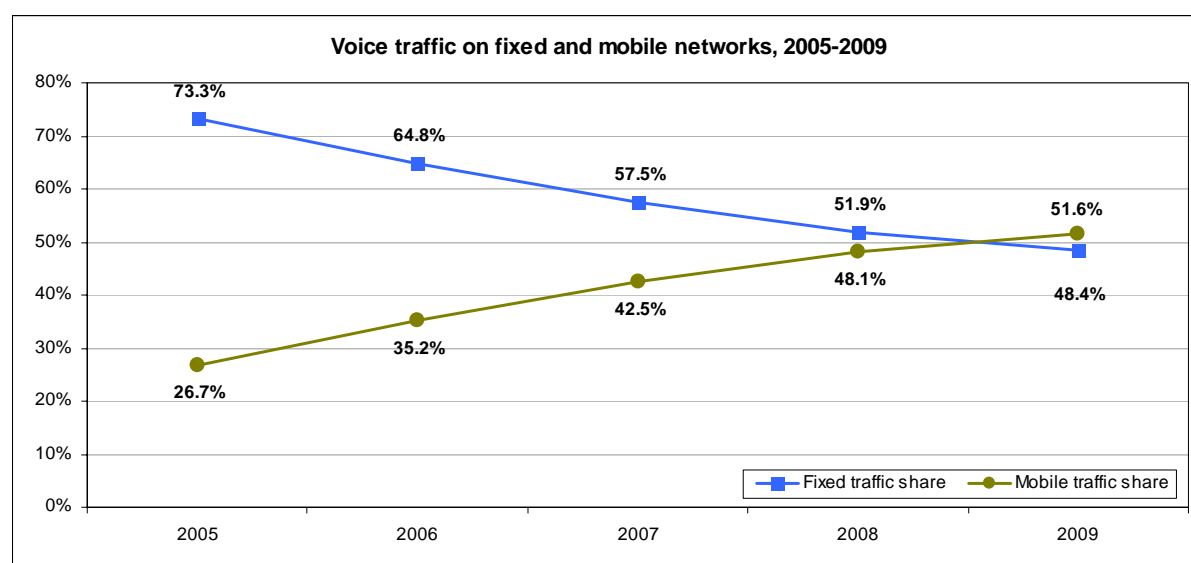
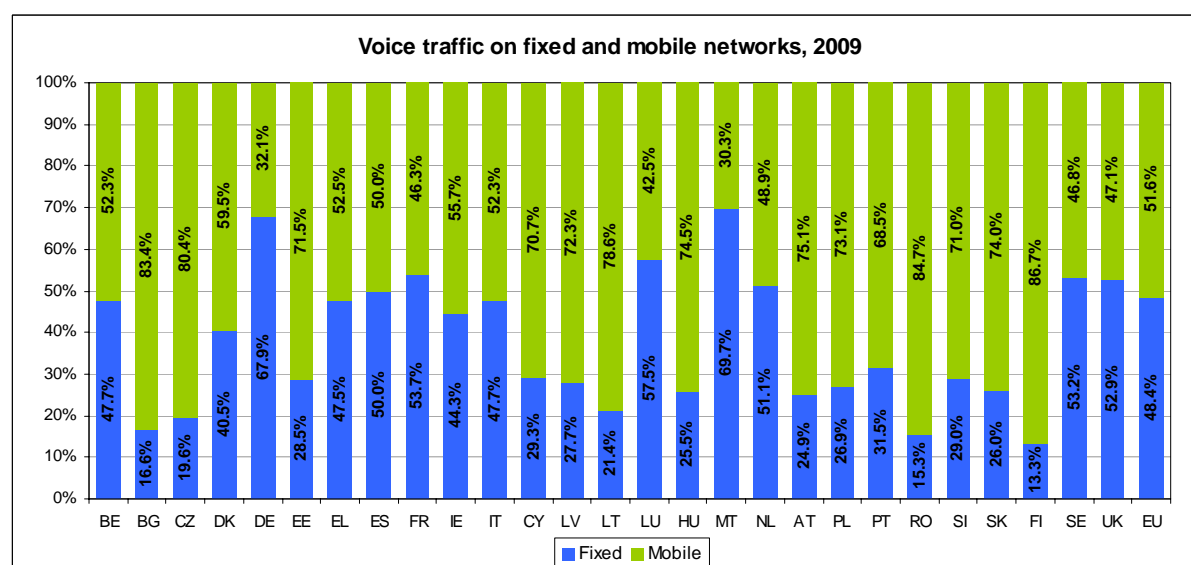


Figure 18: Voice traffic on fixed and mobile networks, 2009



**Bulgaria:** In mobile telephony, international roaming traffic is also included.

**Greece:** For fixed telephony traffic volumes include international traffic through cards, regarding the payphones, only the international traffic is included.

**Italy:** Source: Agcom 2010 Annual Report.

**Germany:** Mobile telephony traffic includes calls to service numbers, in 2009 it includes additionally visitor's calls.

**Romania:** Roaming outbound traffic (222 mil. min. in 2008 and 222 mil. min. in 2009) is excluded.

### 3. FIXED MARKET

#### 3.1 Fixed market share

This section shows the incumbents' market share in the fixed voice telephony markets.

Apart from the overall fixed voice telephony market, submarkets for fixed calls to mobile networks, national fixed calls (including phone local calls, local calls to internet, long-distance calls and fixed calls to mobile networks) and international fixed calls are also shown.

Figures for market shares are calculated on retail revenues and outgoing minutes of traffic. Market shares based on retail revenues exclusively refer to revenues from call markets and do not include any access revenue.

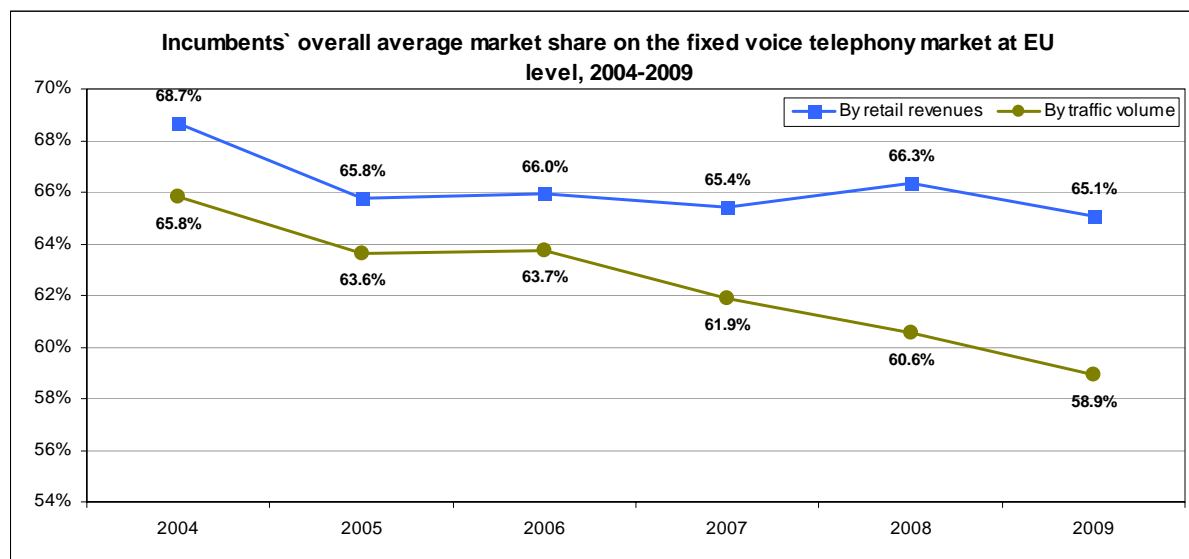
The EU averages are weighted according to the population of each Member State.

The market shares are based on traffic/revenues from publicly available telephone services and include managed Voice over IP services (VoIP) and calls made from public payphones. Traffic/revenues from peer-to-peer VoIP, simple reselling and calling cards are excluded. However, the above criteria are not followed by all Member States. For this reason the figures are not strictly comparable between countries.

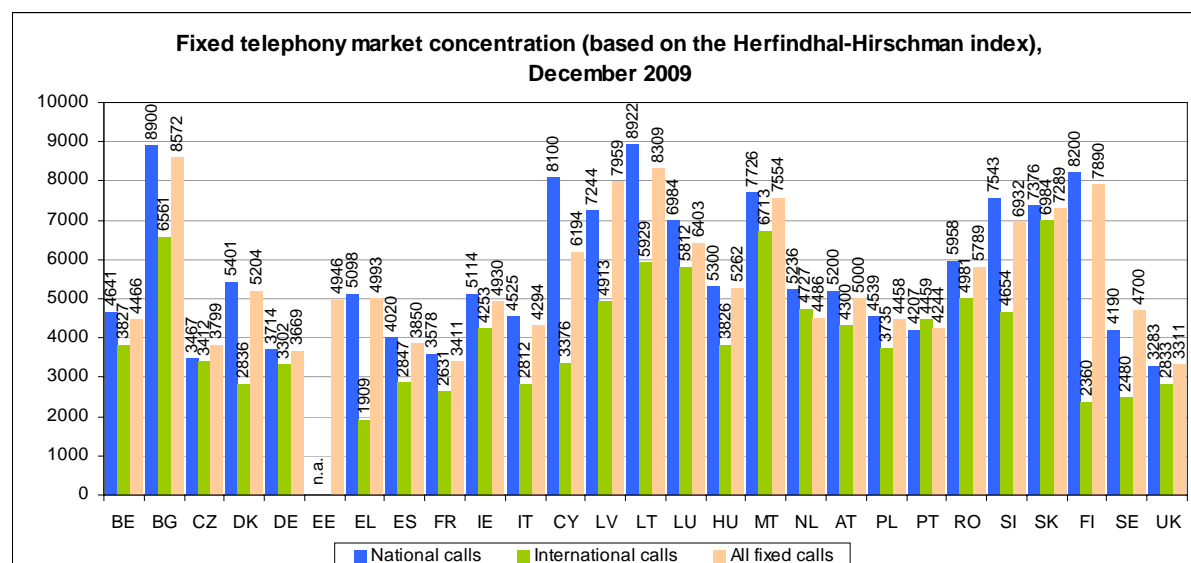
Figures have been provided by NRAs and unless otherwise indicated refer to 31 December 2009 (data for the United Kingdom are for the calendar year). Data for some countries are estimated by NRAs, as indicated in the footnotes.

The following chart shows the trend for the EU weighted average of the incumbents' market share in the fixed voice telephony market since 2004.

**Figure 19: Incumbents' overall average market share on the fixed voice telephony market at EU level, 2004-2009**



**Figure 20: Fixed telephony market concentration (based on the Herfindhal-Hirschman index), December 2009**



**Bulgaria:** Revenue from fixed telephony through public payphones is taken into account.

**Denmark:** Based on outgoing minutes

**Estonia:** Data not available

**Greece:** Based on traffic

**Germany:** Based on outgoing call minutes via direct access (PSTN and VoIP). Excluding call minutes via indirect access.

**France:** Based on traffic

**Ireland:** 91% of International calls = Eircom and 8 OAOs; 92% of National calls = Eircom and 4 OAOs; 94% of all fixed calls = Eircom and 8 OAOs.

**Italy:** Source: Agcom 2010 Annual Report raw data.

**Cyprus:** National Calls estimated.

**Luxembourg:** Based on traffic

**Hungary:** Based on traffic

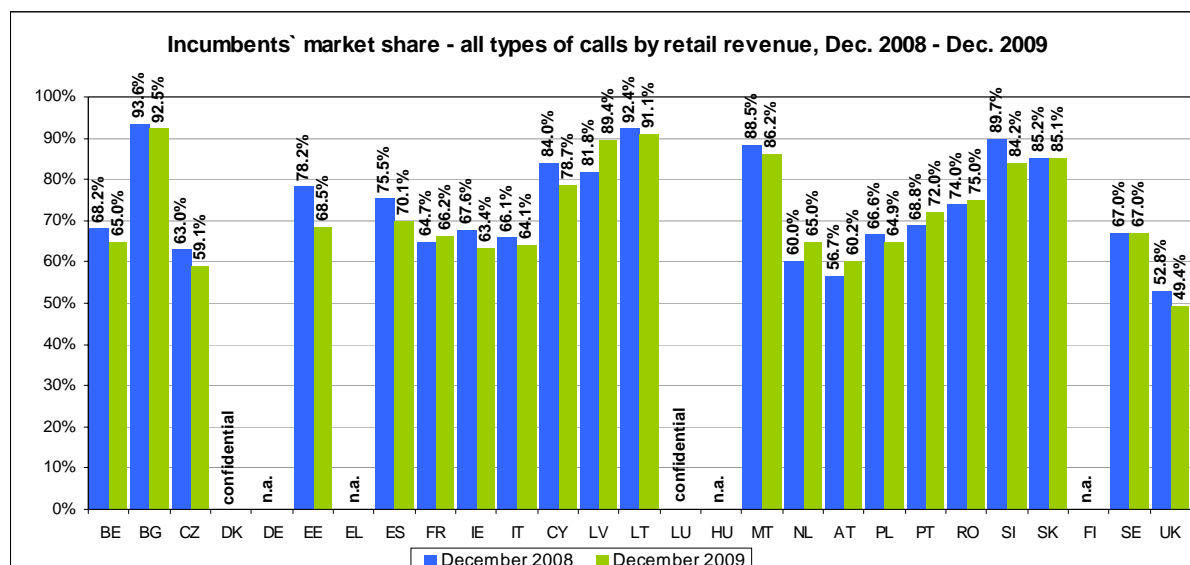
**Austria:** Estimates, based on revenues.

**Poland:** HHI is calculated based on the revenues of 123 operators.

**Finland:** Based on traffic. National calls estimated average in each operating area. International calls based on SMP analysis conducted in 2005. Fixed Calls estimated average in each operating area.

**United Kingdom:** Figures are based on call revenues and are for Q4 2009

Figure 21: Incumbent's market share – all types of calls by retail revenues, 2008-2009



**Denmark:** Confidential

**Germany:** Not available

**Greece:** Not available

**Italy:** Source: Agcom 2010 Annual Report raw data. Figures refer to the switched network. If broadband services were included, the incumbent market share would decrease from 57.6% (2008) to 55.2% (2009)

**Cyprus:** Figure for 2008 revised

**Luxembourg:** Confidential

**Hungary:** Not available

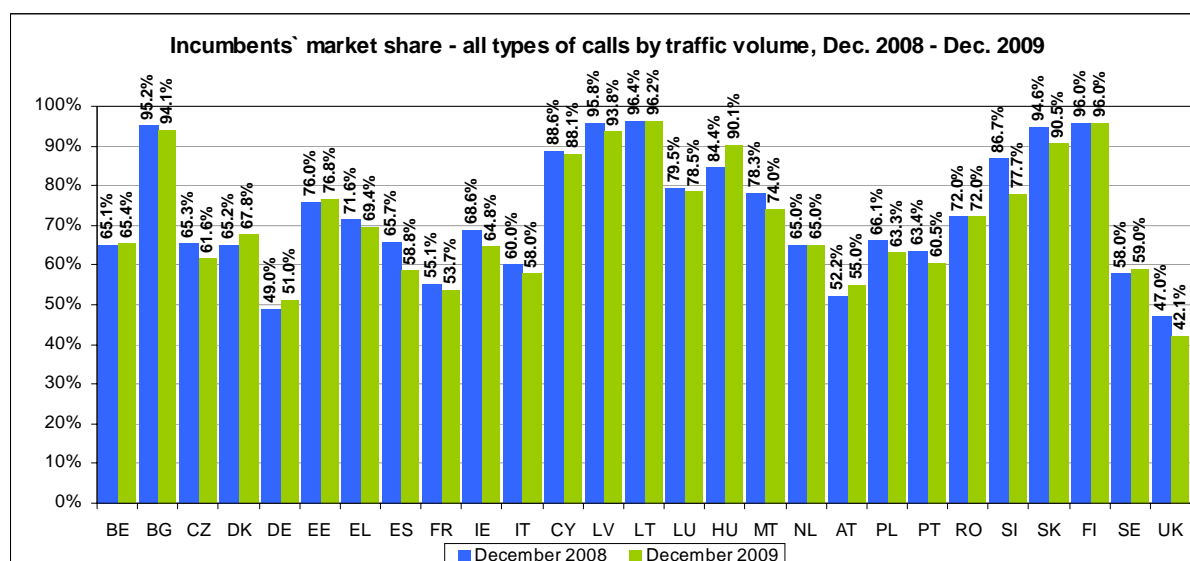
**Netherlands:** Approximation, the exact market share is confidential

**Austria:** Figure for 2008 revised

**Poland:** Zonal + long distance + international + to mobile networks

**Finland:** Not available.

Figure 22: Incumbent's market share – all types of calls by volume, 2008-2009



**Germany:** Including flat tariffs. National fixed calls include calls made to the internet

**France:** Figures are estimated for 2009 and actualized for 2008

**Italy:** Source: Agcom 2010 Annual Report-raw data. Figures refer to the switched network

**Netherlands:** Approximation, the exact market share is confidential

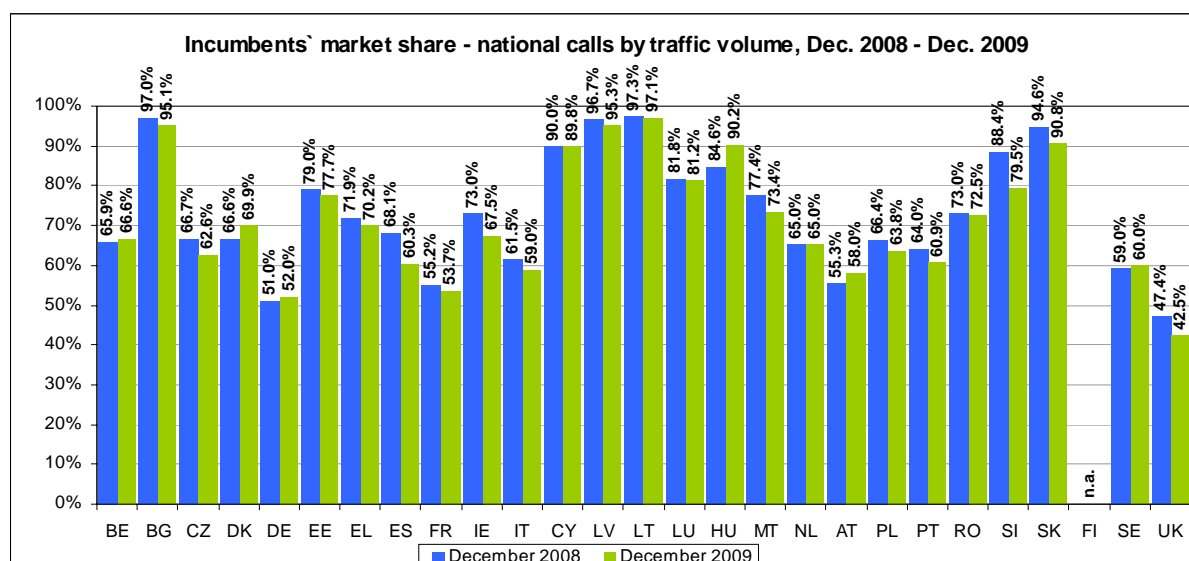
**Austria:** Figure for 2008 revised

**Poland** Zonal + long distance + international

### *Incumbent's market share in the different segments of the market*

The following charts show the incumbents' market share in the national, international and fixed to mobile calls markets by minutes of outgoing traffic. The national calls market includes local phone calls, local calls to internet, long-distance calls and fixed calls to mobile networks. Figures are not available for some Member States.

Figure 23: Incumbent's market share – national calls by volume, 2008-2009



**Germany:** Including flat tariffs. National fixed calls include calls made to the internet

**France:** Figures are estimated for 2009 and actualized for 2008

**Italy:** Source: Agcom 2010 Annual Report-raw data. Figures refer to the switched network

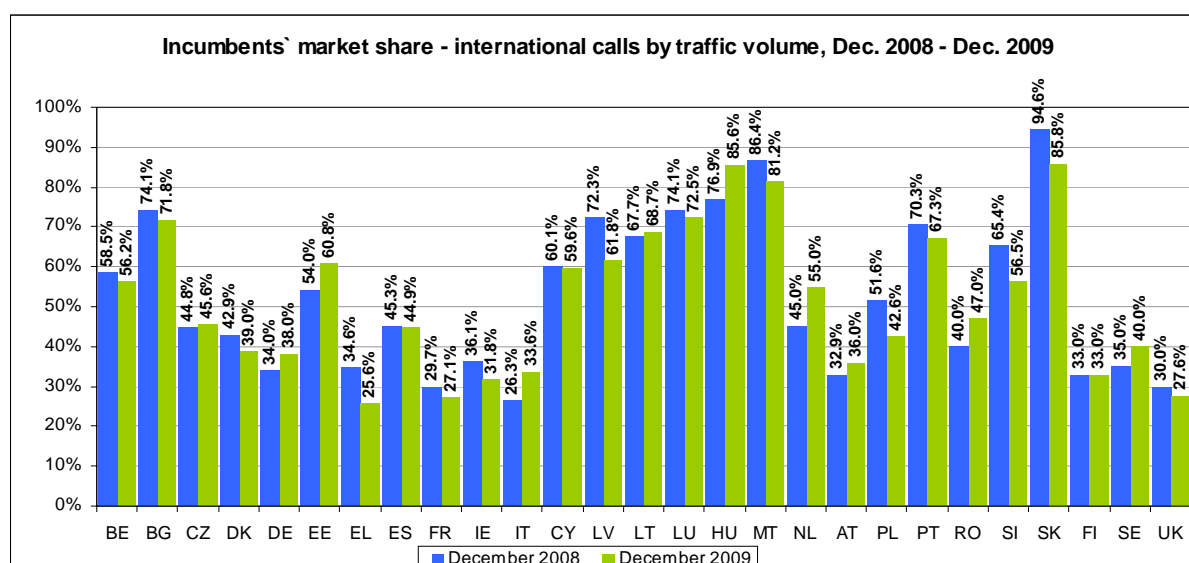
**Netherlands:** approximation, the exact market share is confidential

**Austria:** Figure for 2008 revised

**Poland:** Local + long distance

**Finland:** Not available

Figure 24: Incumbent's market share – international calls by volume, 2008-2009



**Greece:** International calls through cards have been taken into account

**France:** Figures are estimated for 2009 and actualized for 2008

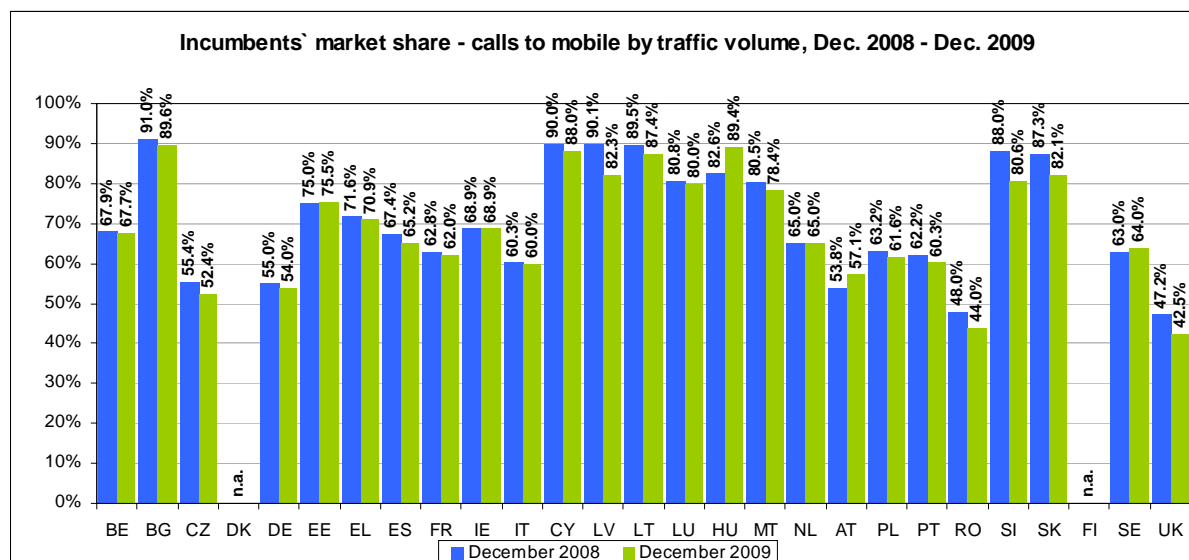
**Germany:** Including flat tariffs.

**Italy:** Source: Agcom 2010 Annual Report-raw data. Figures refer to the switched network

**Austria:** Figure for 2008 revised

**Netherlands:** Approximation, the exact market share is confidential

**Figure 25: Incumbent's market share – calls to mobile by volume, 2008-2009**



**Denmark:** Not available

**France:** Figures are estimated for 2009 and actualized for 2008

**Germany:** Including flat tariffs.

**Italy:** Source: Agcom 2010 Annual Report-raw data. Figures refer to the switched network

**Austria:** Figure for 2008 revised

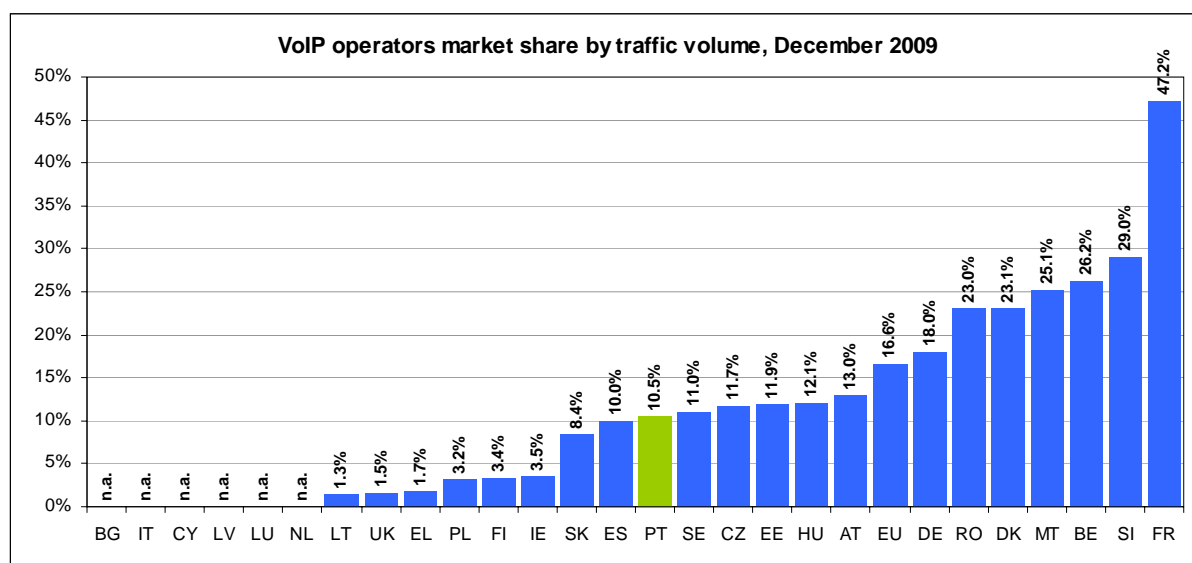
**Netherlands:** Approximation, the exact market share is confidential

**Finland:** not available.

### ***VoIP market share***

The following chart shows the available data for operators' market share on the voice over internet market. The market shares have been calculated on the basis of outgoing minutes of traffic for all fixed calls as of 31 December 2009. The figures consider only managed VoIP services meaning Publicly Available Telephone Services (PATS) using Voice over Internet Protocol technology), whereby the operator controls the quality of service provided through an IP network, at a speed over 128 Kbit/sec. Unmanaged Voice over IP and peer-to-peer services are not included. However, the above criteria are not followed by all Member States and the figures are not strictly comparable between countries.



**Figure 26: Market share of VoIP operators by volume, 2009**

**Bulgaria:** Fixed voice telephony, provided over IP based networks through the geographic numbers from the National numbering plan is not treated as a separate voice service, as far as the operators observe the legal requirement on the quality of the voice service.

**Italy, Cyprus, Latvia and Luxembourg:** Not available

**Netherlands:** Not available. Based on subscriptions, the market share of VoB within all fixed telephony is 46% (Q4 2009).

**UK:** Estimate, around 1-2%.

**Finland:** Estimate based on number of subscriptions.

**Ireland:** As of December 2009 VoIP's proportion of overall fixed minutes was 3.5%.

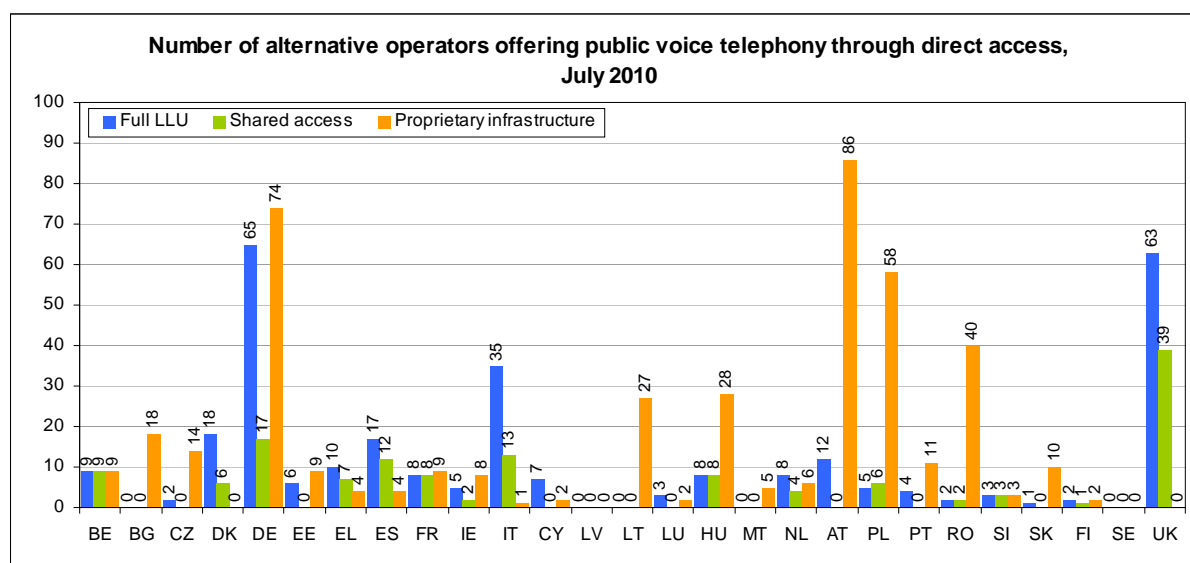
**Austria:** Estimate. Including the incumbent, approx. 13% of all fixed lines are managed VoIP.

**Denmark:** Incl. VoIP with no quality of service.

**Belgium:** All voice traffic over cable networks is considered as managed VoB.

### 3.2 Direct Access

Direct access means that customers buy services from an alternative operator using the incumbents' or another operator's network via Local Loop Unbundling. The table below shows what percentage of national and international calls were made through direct access in 2009 and 2010. It is also presented, what percentage of direct access customers used the incumbents' networks.

**Figure 27: Number of alternative operators offering voice telephony through direct access, July 2010**

**Austria:** Figures are estimates based on national data request for 2007.

**Belgium:** Data are as of 01.01.2010.

**Denmark:** Data refers to number of agreements between the incumbent and alternative operators. Information about whether these operators are actually offering public voice telephony through the LLU's is not available.

**France:** For shared access and proprietary infrastructure figures, the numbers of local operators are higher if public initiatives networks are taken into account.

**Germany:** For proprietary infrastructure as of 01.07.2009 only cable operators are included. For proprietary infrastructure as of 01.01.2010 cable operators and FTTB/FTTH-operators with more than 100 access lines are included. Pilot projects are not considered.

**Italy:** For full LLU and shared access those companies are included, who have signed specific agreements with Telecom Italia

**Lithuania:** Proprietary infrastructure includes IP operators, cable TV and other operators that provide fixed telephony.

**Netherlands:** Data for full LLU and shared access are as of 31.12.2009.

**Poland:** Data refers to the operators actually using LLU and operators who offer services based on LLU.

**Romania:** Data for 1 July 2010 are provisional

**Slovenia:** Number of alternative VoIP operators: 10

**United Kingdom:** For LLU the figures given are the number of agreements with BT - the actual number of operators providing service will be smaller; data for proprietary infrastructure operators is not available.

Figure 28: EU subscribers using an alternative provider for fixed voice services, July 2008 – July 2010

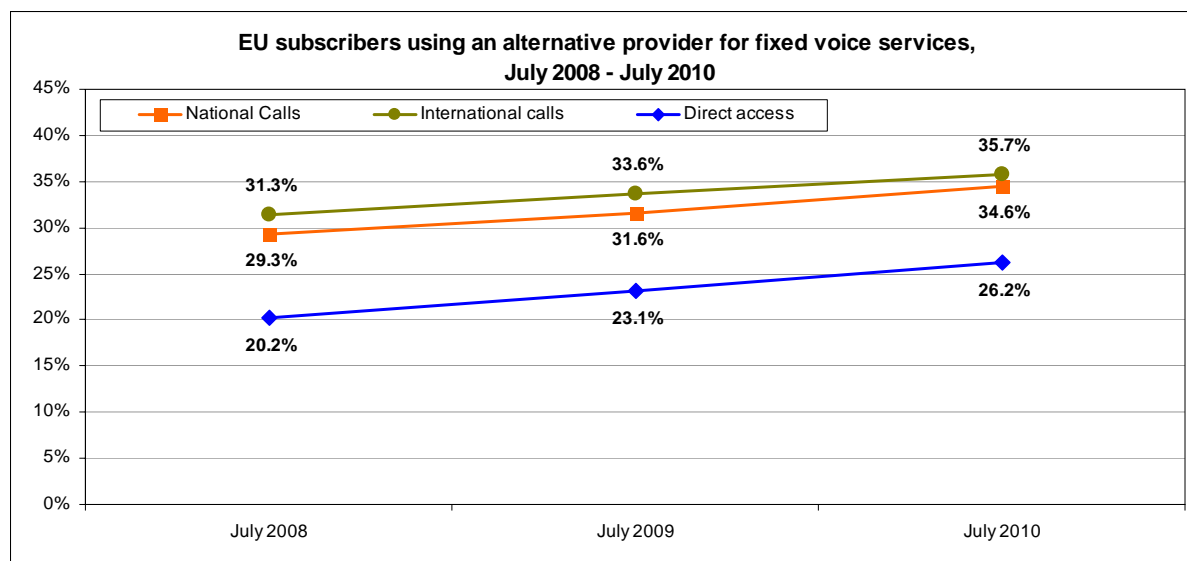
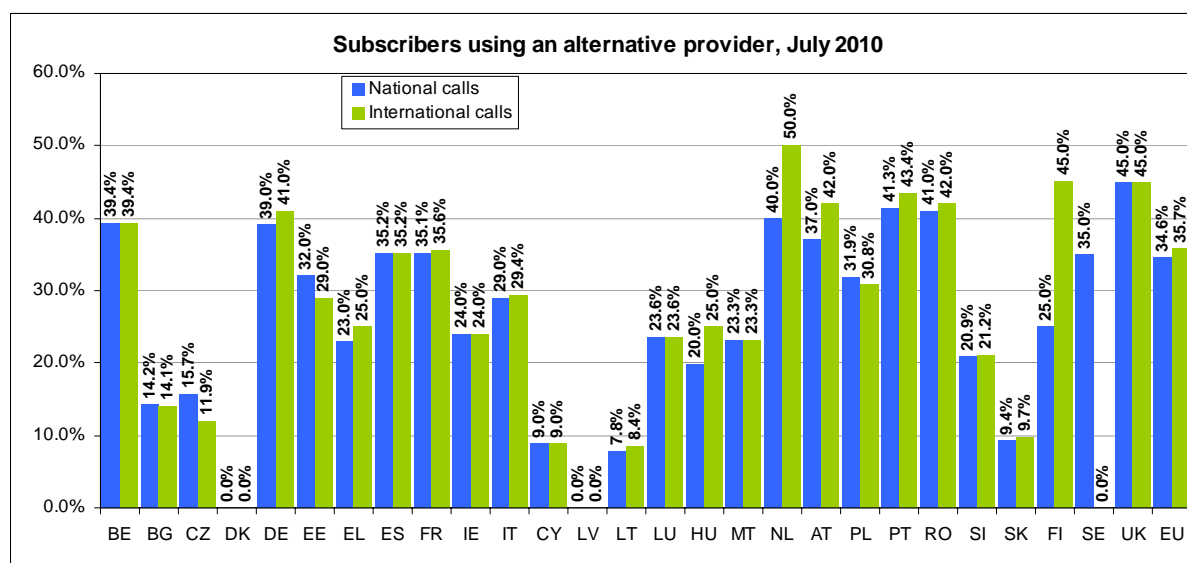
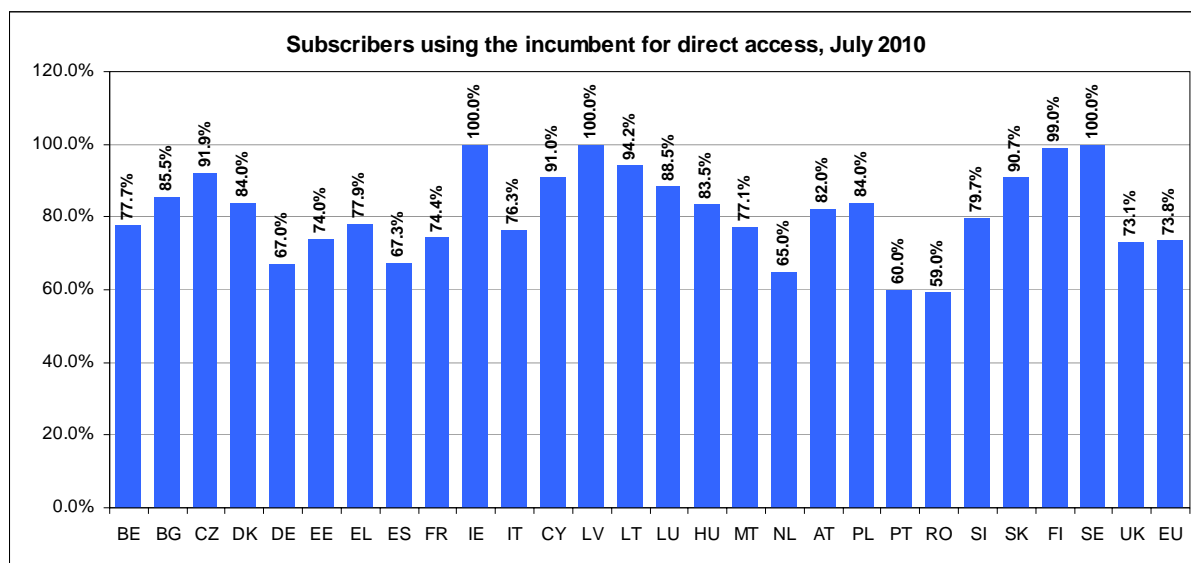
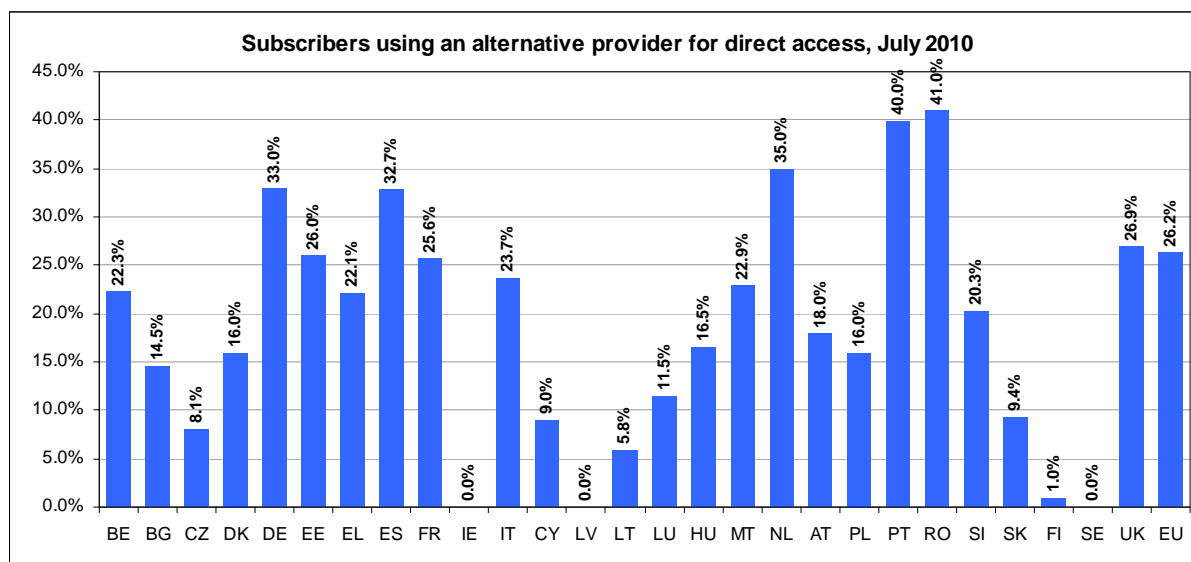


Figure 29: Subscribers using an alternative provider, July 2010



**Figure 30: Subscribers using the incumbent for direct access, July 2010****Figure 31: Number of subscribers using an alternative provider for direct access, July 2010**

**Austria:** Data are as of 01.04.2010.

**Belgium:** Data are as of end 2009

**Bulgaria:** Figures are calculated on the base of number of fixed telephone subscriptions as of December, 31, 2009.

**Denmark:** The indicated figure on direct access comprises only direct access via. PSTN or ISDN. Figures for alternative operators owned by incumbent were counted as part of the incumbents figures.

**Greece:** National and international calls figures refer to 31/12 of the previous year. Direct Access refers to 1/7 of the respective year.

**Germany:** Unbundled IP access lines are included. Figures for international calls are NRA estimates.

**France:** Data are as at 31 March 2010.

**Italy:** New way of calculation was applied in 2010 for some operators

**Netherlands:** Data are as of 31-03-2010. The presented percentages are approximations, the exact data is confidential.

**Poland:** The data for 2010 is given based on the 33 largest operators of subscribers selected on the basis of the number of users.

**Romania:** The data for 1 July 2010 are provisional.

**United Kingdom:** The proportion of subscribers using a provider other than BT for national and international calls will be slightly understated as they exclude BT lines using CPS. 2010 data is as of Q1 2010 (2009 data is for Q2 2009). Direct access figures are calculated as direct access operator share plus that of cable operators and other licensed operators (including those using full LLU but excluding WLR connections).

### 3.3 Fixed number portability

Fixed number portability enables fixed subscribers to retain their number when they move from one operator to another.

Figures are provided by NRAs, and include the number of transactions calculated up to 1 October each year. Data also include the the average number of days taken to port a number as well as the cost of porting a number. Inter-operator prices for fixed number portability refer to the amount charged by the incumbent to the recipient operators for porting a geographic telephone number (excluding VAT). This price may vary depending on a number of factors. In some countries the price for a non - geographic number is different. Where available, information on price for non-geographic number portability is added in the footnote. In some countries there is no charge for the porting of fixed numbers.

Two different measurements were used on number portability. 'Transactions' refer to the total number of number portings between 1 January and 30 September each year. 'Ported numbers' refer to the number of those numbers that are held by another operator than the range holder on 30 September each year.

**Figure 32: Fixed number portability - transactions, 2009-2010**

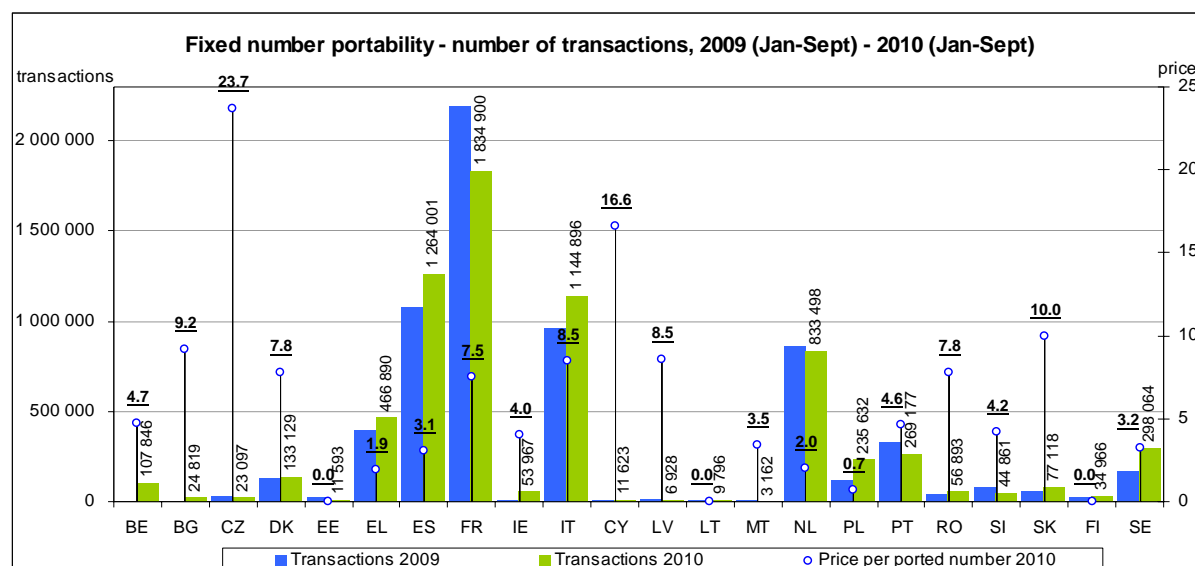


Figure 33: Fixed number portability – number of ported numbers, 2009-2010

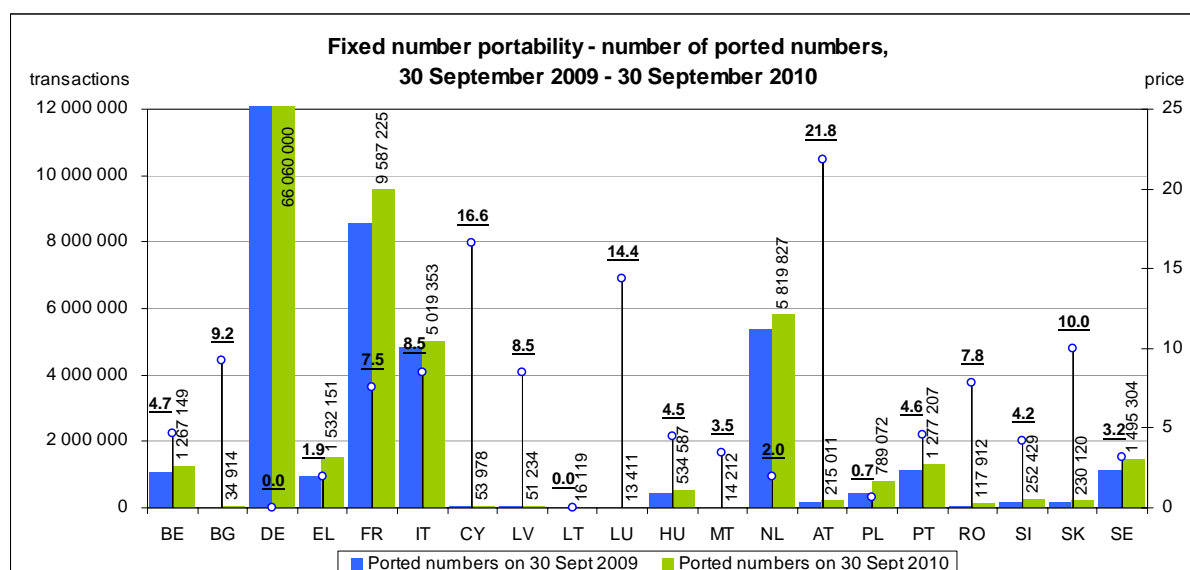
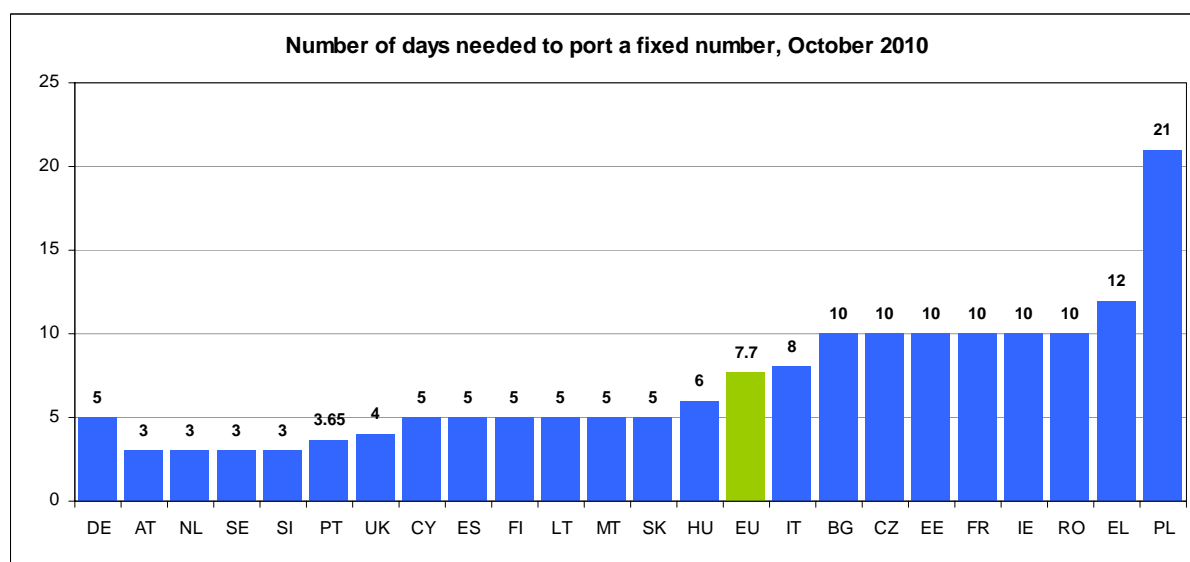


Figure 34: Time taken in number of days for fixed number portability, October 2010



**Austria:** Time needed is maximum 3 days. Typical cases are shorter but no detailed information is available. Only a total sum of ported numbers quarterly is available.

**Bulgaria:** Time limit of portability is same for all operators: 7 working days for single number ported and 10 working days for a group of numbers. The price for number portability is same for all operators. In year 2010 it is 18 BGN per one number, excluding VAT and it is subject to agreement between the operators. The agreement is part from the fixed number portability procedure. The agreement includes price reduction for over 300 ported numbers.

**Germany:** The interruption of service is less than a day, if notified on time. Figures on the transactions between the 1 January and the 30 September are not available. 15 230 000 represent the total number of transactions from introduction of number portability by 31 December 2009. Price is 0.

**Finland:** Time needed is 5 working days.

**France:** Maximum current time is 10 days, minimum time 4 days when associated with ULL delivery (related to ULL average time; ULL and porting is done the same day). Interruption time is maximum 6 hours. This figure (7.53 € )

corresponds to the cost for one number when the procedure to port the number is not fully automated (i.e. on the business market). When it is fully automated (i.e. when associated with ULL product), the cost is 3.03 € for one number.

**Malta:** Time needed is maximum 5 days.

**Netherlands:** Technical porting is less than 2 hours. For the end-user (from request to end of technical porting) the average is 3 days and the maximum is 10 days.

**Portugal:** Since July 2009, according the up-dated NP Regulation, the minimum time enforced to donor for number portability is 2 working days. This time is managed by the recipient. The wholesale price per ported number of the incumbent includes a reduction in case of DDI: € 1,59 for DDI blocks between 10 and 99 numbers, € 0,74 for DDI blocks with 100 numbers or more numbers.

**Poland:** Time needed depends on the mode of transfer: 1 day or any period set by the client, from 30 to 59 days with notice of the donors. The price represents the fee for each commenced 100 numbers transferred geographically.

**Romania:** Time needed is maximum 10 days. The price represents the maximum price allowed by regulations at 1.10.2010.

**Slovenia:** Time needed is maximum of 3 working days. The price represents the maximum.

**United Kingdom:** 4 days is the minimum order leads time. Data on the number of fixed porting transactions for any given period is not available. The cost is from £0.49, this is a minimum price and is BT Openreach's published price for porting a single geographic telephone number.

**Belgium:** Data are not available for time needed. The cost per simple installation is given

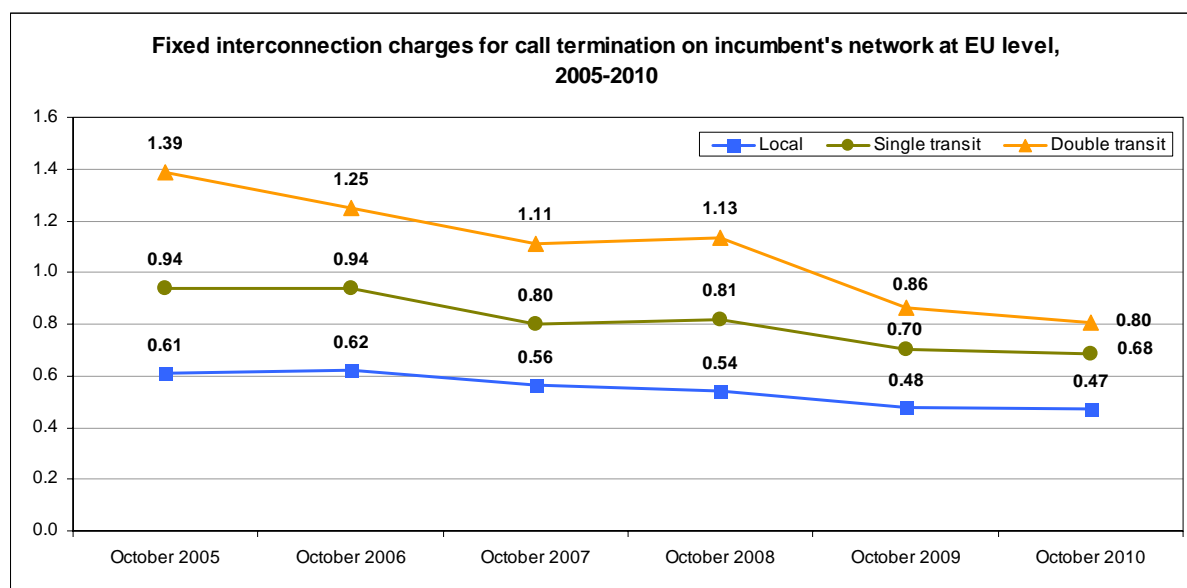
**Denmark:** Data are not available for time needed. Transactions refer to the period 1 January to 30 June.

**Luxembourg:** Data are not available for time needed.

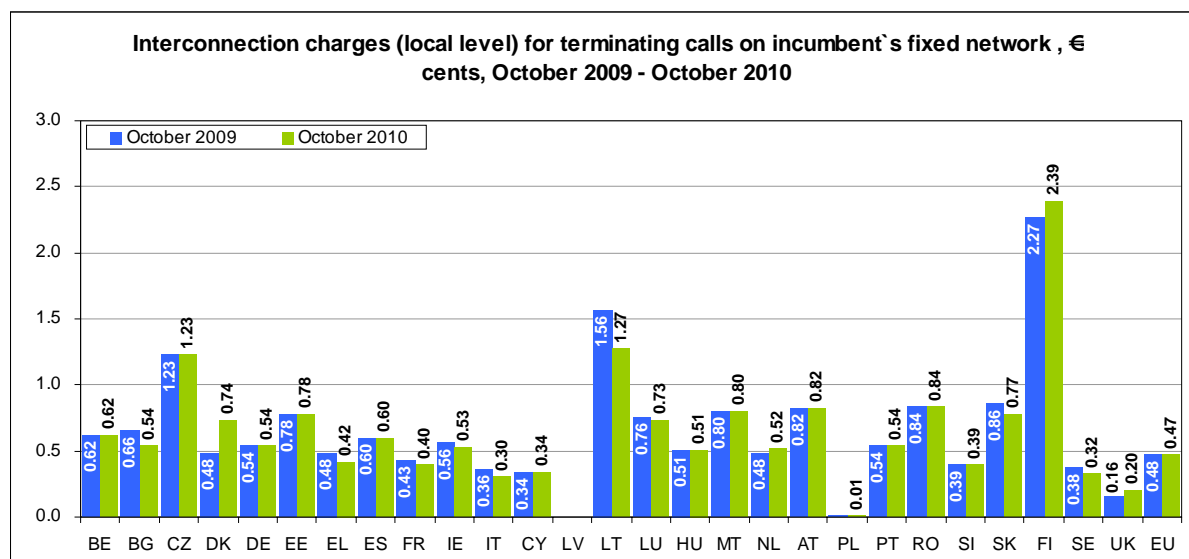
**Ireland:** All numbers refer to cumulative ports.

### 3.4 Fixed Interconnection

**Figure 35: Fix interconnection charges for call termination on incumbent's network at EU level, 2005-2010**



**Figure 36: Interconnection charges – Local level, October 2009 – October 2010**



**Bulgaria:** Prices for call termination are imposed as a price control remedy according CRC's Decision № 237/17 of March 2009. According to the glide-path of the Decision, the termination charges at 01.10.2009 are in force from 1 July 2009 and termination charges at 01.10.2010 are in force since 1 July 2010. Set-up charge is not applied. According to Decision № 237/17 of March 2009 the use of Metro Segment is allowed until 1 January 2010. With regards to mobile-to-fixed termination rates, Decision № 237/17 of March 2009 imposed symmetry between the termination rates for mobile-to-fixed and for fixed-to-fixed network. According to the obligation imposed, the incumbent has to terminate mobile traffic in all transit levels at the same prices as the fixed traffic.

**Czech Republic:** Local level is still regulated but it is not used at present. Mobile-to-fixed charges are the same as for fixed-to-fixed interconnection.

**Spain:** For year 2010, data as of 30-06-2010

**Finland:** Based on the average of 33 SMP-operators call termination charges. Termination charges varies from 2,20 €cent/min to 2,51 €cent/min. Average is 2,39 €cent/min and median charge is 2,4 €cent/min.

**France:** The termination rate is regulated by an overall price cap in Euro/cents per minute. Operators have freedom to set the tariffs of different components of termination (eg. depending on time of the day, on a per call basis, on a per minute basis, etc.) providing they respect the overall price cap, based on a consumption basket predetermined by ARCEP. The figure refers to the overall price cap and not to the average revenue per minute as generated on the incumbent's network at peak time.

**Germany:** Peak tariffs. A new decision is expected in June 2011.

**Latvia:** Local level is not applicable

**Malta:** For comparison purposes only. The figure refers to single transit, as local level is not applicable to Malta due to the islands' geographical size.

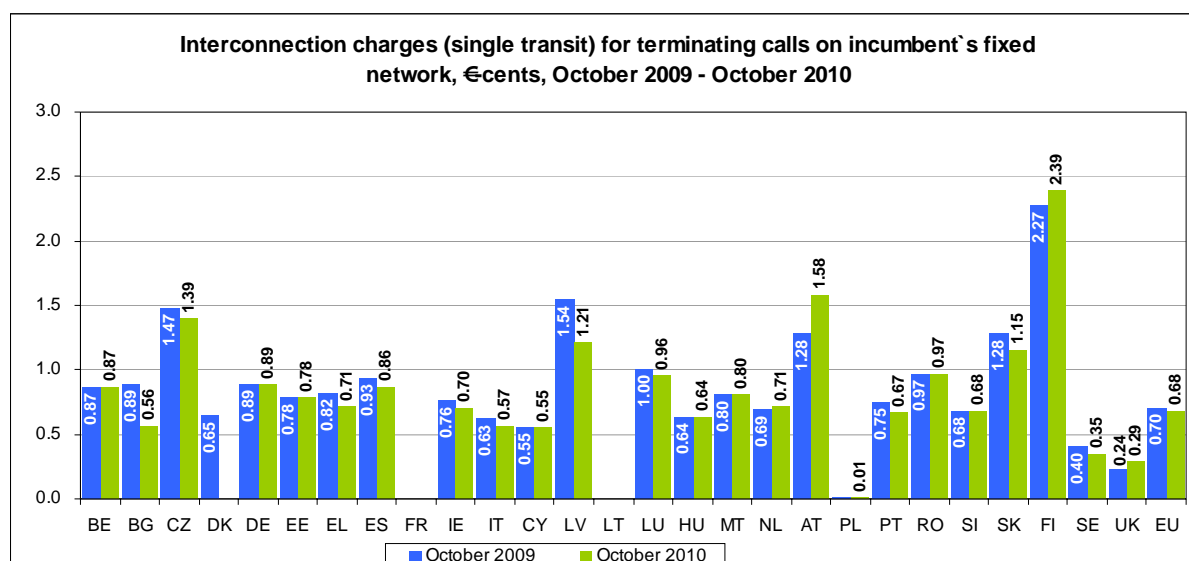
**Portugal:** Through determination of 21/07/2010, ICP-ANACOM approved the 2010 interconnection prices (<http://www.anacom.pt/render.jsp?contentId=1038911&languageId=1>).

**United Kingdom:** Weighted average of disaggregated day, evening, week-end rates.

**Romania:** Maximum average tariffs.



**Figure 37: Interconnection charges – Single transit, October 2009 – October 2010**



**Bulgaria:** Prices for call termination are imposed as a price control remedy according CRC's Decision № 237/17 of March 2009. According to the glide-path of the Decision, the termination charges at 01.10.2009 are in force from 1 July 2009 and termination charges at 01.10.2010 are in force since 1 July 2010. Set-up charge is not applied. According to Decision № 237/17 of March 2009 the use of Metro Segment is allowed until 1 January 2010. With regards to mobile-to-fixed termination rates, Decision № 237/17 of March 2009 imposed symmetry between the termination rates for mobile-to-fixed and for fixed-to-fixed network. According to the obligation imposed, the incumbent has to terminate mobile traffic in all transit levels at the same prices as the fixed traffic.

**Denmark:** Single transit (metropolitan) is deregulated

**Spain:** For year 2010, data as of 30-06-2010

**Finland:** Based on the average of 33 SMP-operators call termination charges. Termination charges varies from 2,20 €cent/min to 2,51 €cent/min. Average is 2,39 €cent/min and median charge is 2,4 €cent/min.

**France:** Single transit is deregulated

**Germany:** Peak tariffs. A new decision is expected in June 2011.

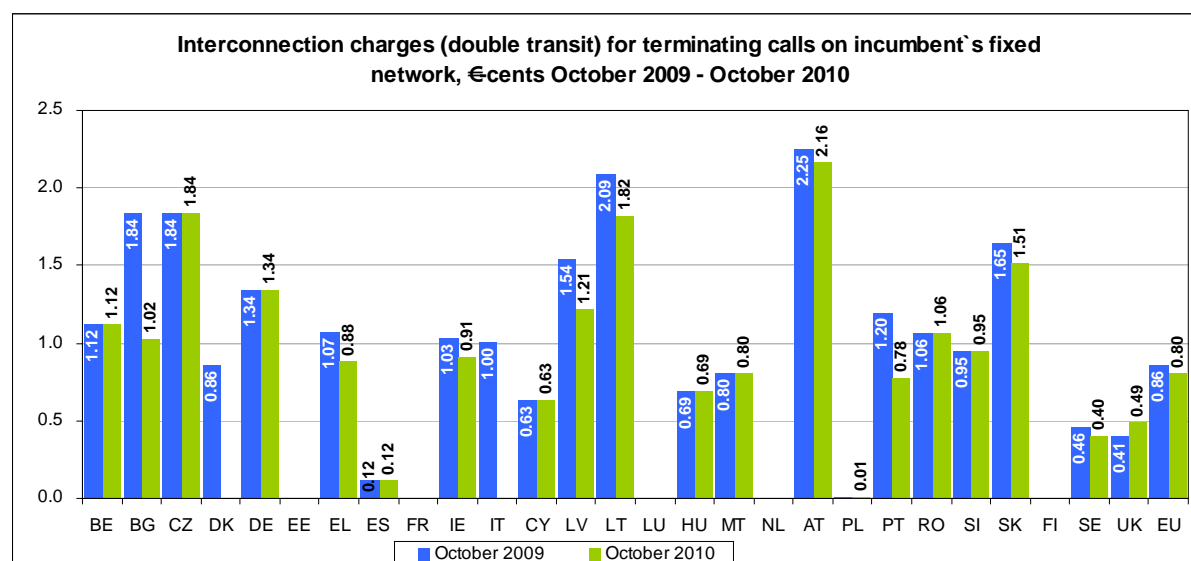
**Lithuania:** Single transit is not applicable.

**Portugal:** Through determination of 21/07/2010, ICP-ANACOM approved the 2010 interconnection prices (<http://www.anacom.pt/render.jsp?contentId=1038911&languageId=1>).

**Romania:** Maximum average tariffs.

**United Kingdom:** Weighted average of disaggregated day, evening, week-end rates.

**Figure 38: Interconnection charges – Double transit, October 2009 – October 2010**



**Bulgaria:** Prices for call termination are imposed as a price control remedy according CRC's Decision № 237/17 of March 2009. According to the glide-path of the Decision, the termination charges at 01.10.2009 are in force from 1 July 2009 and termination charges at 01.10.2010 are in force since 1 July 2010. Set-up charge is not applied. According to Decision № 237/17 of March 2009 the use of Metro Segment is allowed until 1 January 2010. With regards to mobile-to-fixed termination rates, Decision № 237/17 of March 2009 imposed symmetry between the termination rates for mobile-to-fixed and for fixed-to-fixed network. According to the obligation imposed, the incumbent has to terminate mobile traffic in all transit levels at the same prices as the fixed traffic.

**Czech Republic:** The stated charge of double transit is specified by RIO and is not regulated by the NRA.

**Denmark:** Double transit (national, 2010) is deregulated

**Estonia:** Double transit not applicable

**Spain:** For year 2010, data as of 30-06-2010

**France:** Double transit is deregulated

**Finland:** Double transit not applicable.

**Germany:** Peak tariffs. A new decision is expected in June 2011.

**Italy:** According to last market analysis national double transit is no longer subject to price control. Remain subject to price control terminating prices at metropolitan level

**Luxembourg:** Double transit not applicable.

**Malta:** For comparison purposes only. The figure refers to single transit, as double transit is not applicable to Malta due to the islands' geographical size.

**Netherlands:** Double transit is not regulated.

**Portugal:** Through determination of 21/07/2010, ICP-ANACOM approved the 2010 interconnection prices (<http://www.anacom.pt/render.jsp?contentId=1038911&languageId=1>)

**United Kingdom:** Weighted average of disaggregated day, evening, week-end rates.

**Romania:** Maximum average tariffs.

## 4. BROADBAND MARKET

### 4.1 Broadband access definitions

This section provides data on the number and type of broadband lines supplied by both incumbent operators and new entrants/alternative operators in the EU. It also contains information on access lines provided by means of alternative technologies such as fixed wireless access (WLL), fibre and cable modem. Data on mobile broadband access is also available; however data is not of the same quality for all countries. Data on speeds is partially available.

Information has been provided by the national regulatory authorities through the COCOM questionnaires on data for local broadband access. Given the rapid developments in this sector, it has been agreed with NRAs to update the questionnaires on a regular basis every January and July. Unless otherwise stated, the data below refer to the market situation on 1 January 2010.

The definitions used in the charts and data below are as follows:

- **Fully unbundled lines:** Fully unbundled lines supplied by the incumbent operator to other operators (new entrants), excluding experimental lines. In the case of full unbundling, a copper pair is rented to a third party for its exclusive use. As fully unbundled lines (LLU) supplied by the incumbent operator to the new entrants could in principle be used for services other than broadband, the total number of LLU for access to internet will be lower than the total number of LLU.

- **Shared access lines:** Shared access lines supplied by the incumbent to other operators (new entrants), excluding experimental lines. In the case of shared access, the incumbent continues to provide telephony service, while the new entrant delivers high-speed data services over that same local loop.

- **Bitstream access:** It refers to the situation where the incumbent installs a high-speed access link to the customer premises, and makes this access link available to third parties (new entrants), to enable them to provide high-speed services to customers. Bitstream depends in part on the PSTN, and may include other networks such as the ATM network. Bitstream access is a wholesale product that consists of the provision of transmission capacity in such a way as to allow new entrants to offer their own, value-added services to their clients. The incumbent may also provide transmission services to its competitor, to carry traffic to a 'higher' level in the network hierarchy where new entrants may already have a broadband point of presence.

- **Simple resale:** In contrast to bitstream access, simple resale occurs when a new entrant receives and sells on to end users a product (with no possibility of value added features to the DSL part of the service) that is commercially similar to the DSL product provided by the incumbent to its own retail customers, irrespective of the ISP service that may be packaged with it. Resale offers are not a substitute for bitstream access because they do not allow new entrants to differentiate their services from those of the incumbent (i.e. when the new entrant simply resells the end-to-end service provided to him by the incumbent on a wholesale basis).

- **Incumbent's DSL lines:** Lines provided to end users by the incumbent, its subsidiaries or partners (for example an associated company such as a joint venture providing ISP services).

- **WLL:** Broadband internet connections by means of wireless local loop (sometimes referred to as fixed wireless access).

- **Cable modem:** Broadband internet connections by means of cable TV access.

- **L.L. or Other traditional wireline access:** Broadband internet connections by means of dedicated capacity (Leased Lines) provided over metallic copper pairs, including tail ends or partial circuits. "Incumbent's leased lines" include only retail lines and excludes lines provided to other operators. "New entrants' leased lines" include all retail lines provided to end users, even if based on wholesale lines supplied by the incumbent.

- **Fibre to the home (FTTH):** Broadband internet connections by means of fibre optic.

- **Satellite Internet:** Broadband internet connections via satellite.

- **Powerline communications:** Broadband internet transmitted over utility power lines.
- **Other categories:** Internet broadband connections by means of local area networks and other.
- **Retail access:** Access provided to end users.
- **Incumbent:** Organisations enjoying special and exclusive rights or *de facto* monopoly for the provision of voice telephony services before liberalisation, regardless of the role played in the provision of access by means of technologies alternative to the PSTN.
- **New entrant:** Alternative telecommunications operators, as well as internet service providers (ISPs).
- **Mobile Broadband:** Internet access using 3G or higher mobile standards. Mobile Broadband can be accessed either by means of dedicated data devices (modems, cards and USB keys) and mobile handset enabling 3G or higher standard technologies. In the case of access through dedicated data devices the total number of subscribers is taken into consideration. In the case of access through mobile handsets, only active users (those who used the service in the past 90 days) are included.
- **Broadband connection:** an internet connection enabling higher than 144 Kbit/s download speed. As of January 2010 it is estimated that 1-2 Mbps is the minimum download speed and that just a fraction of all retail broadband lines provide speeds of 144 Kbit/s.

## 4.2 Wholesale access

This section shows the availability of fixed wholesale access lines supplied by incumbent operators to new entrants. Separate figures are provided for fully unbundled lines, shared access, bitstream access and resale.

**Table 1: Number of wholesale lines and agreements (full LLU, shared lines, bitstream and resale lines) on 1 January 2011**

Date	Incumbent's PSTN activated main lines	Availability of wholesale access									
		Fully unbundled lines			Shared access lines supplied by the			Wholesale DSL lines supplied			
		Unbundled lines	FUL Requested lines	FUL N. of agreements	Shared lines	SAL Requested lines	SAL N. of agreements	Bitstream access		Simple resale	
Country								Bitstream N. lines	Bitstream N. agreements	Resale N. lines	Resale N. agreements
BE	3 199 330	84 736		9	22 248		9	156 388	14	25 396	15
BG	1 787 418				1	10	3	163	7		
CZ	1 728 963	48 175		6	5 399		6	70 192	20		
DK	1 668 639	1 584 022	N/A	18	35 337	N/A	6	130 795	14	39 719	23
DE	34 167 000	9 500 000		173	67 000		22	832 600	26	1 185 200	12
EE	389 000	8 022	4	6				105	1		
EL	5 203 000	1 346 498	37 839	13	33 250	108	10	37 493			
ES	13 991 449	2 213 149		17	263 962		11	572 033	29	12 131	3
FR	9 128 000	7 690 000			1 194 000			1 799 000			
IE	1 533 295	14 179	confidential	confidential	36 820	confidential	confidential	182 594	confidential		
IT	15 486 402	7 003 661	46 047	35	607 076	172	13	1 882 991	173		
CY	369 622	na		3	168		3	1 946	6		
LV	550 000			2			2	276	12		
LT	627 202	695		2	167		2	1 282	10		
LU	214 000	18 326	426	5	1		5			13 139	7
HU	2 262 274	19 933	136	8	3 947	6	7	137 047	17		
MT	189 543							580			
NL	6 691 000	612 000		9	123 700		5	241 500	ca 20	confidential	confidential
AT	2 430 000	277 852	1 136	37	57		2	43 000	45		
PL	6 874 654	89 458	n/a	6	40 401	n/a	7	525 976	12		
PT	2 632 748	242 103	nd	4				38 763	9	457	2
RO	2 600 000	978		13	244		13	N/A	N/A	N/A	N/A
SI	696 272	61 710	358	3	17 175	38	3	23 494	4		
SK	1 043 611	31	26	1				33 879	18		
FI	2 071 000	295 400			29 200			43 400			
SE	3 959 000	216 224	N/A	N/A	319 069	N/A	N/A	12 554	N/A	99 115	N/A
UK	16 957 820	4 006 629	n/a		3 481 926	n/a	39	160 991	29	2 241 184	435

### 4.3 Retail fixed broadband access

This section provides information on the deployment of fixed broadband access lines by incumbents (and their subsidiaries or partners) and by new entrants (alternative telecom operators or Internet Service Providers) to end-users.

Fixed broadband access can be provided by different means: DSL lines, cable modem, Wireless Local Loop (WLL), fibre, dedicated leased lines and other technologies (such as satellite, powerline communications, local area networks, etc.).

New entrants' DSL lines can be provided to end users by means of fully unbundled or shared access lines, bitstream access or resale. In some Member States, new entrants have started rolling out parallel DSL networks. In all the charts below on fixed broadband retail lines data refer either to 1 January 2009 or 1 January 2010. In some cases only estimates are available or data are as of 1 July or 1 October 2009.

The following table shows the total number of fixed broadband access lines for each Member State, provided by both incumbents and new entrants/alternative operators, and including all types of fixed broadband connections.

Table 2: Number of fixed broadband lines by operator and technology on 1 January 2011

January 2011		New entrants' DSL lines on PSTN						Incumbents' access lines by other means								
Country	Incumbent's DSL lines	Own network	Full ULL	Shared access	Bitstream access	Resale	Total new entrants DSL lines	WLL	Cable modem	Leased lines	Fiber to the home	Satellite	PLC	Other	Public access WIFI Hotspots	Tot. (exc. WIFI)
BE	1 560 736		39 260	6 115	39 386	188 708	273 469			7 236					733	7 969
BG	343 358				139		139			989				48		1 037
CZ	735 702	600	48 175	5 399	70 192		124 366				10 400					10 400
DK	905 052		164 689	45 928	90 319	36 626	337 562	586	368 354		16 421	N/A	N/A	33 096	n/a	418 457
DE	11 900 000	13 000	9 000 000	67 000	832 600	1 185 200	11 097 800			30 000	n.a	18 800			8 000	56 800
EE	147 616	1 750	6 738		105		8 593	6 418			34 637			2	479	41 536
EL	1 102 396		1 070 918	33 250	37 493		1 141 661	74		196	134	1 129				1 533
ES	5 647 411		2 213 149	263 962	572 033	12 131	3 061 275				49 337	9 293				58 630
FR	9 128 000		7 690 000	1 194 000	1 799 000		10 683 000									
IE	confidential		14 179	36 820	182 594		233 593	confidential		confidential		confidential			766	confidential
IT	7 175 000	2 436	3 789 090	113 643	1 882 991	1 191	5 789 351			315	5 930	731		448	2 487	9 911
CY	144 790		30 154	168	1 946		32 268				73				95	168
LV	173 165		13	4	54	292	363	1 043			55 957				57	57 057
LT	211 666			50	1 282		1 332	29 105		55	90 117			13 640	3 785	136 702
LU	110 999		16 169			13 020	29 189		565	402	804				41	1 812
HU	660 683		19 933	3 947	137 047		160 927	600	147 340	n.a.	19 125	n.a.	n.a.	n.a.	n.a.	167 065
MT	62 934				580		580									
NL	2 661 400		612 000	123 700	241 500	confidential	confidential				confidential					confidential
AT	1 080 000		256 350	57	43 000		299 407				270					270
PL	1 985 237	460 795	89 458	40 401	525 976		1 116 630				238	138		6 996		7 372
PT	892 557		229 098		38 763	457	268 318			329	110 794	11			confidential	confidential
RO	878 000	400	400				800				5 400				333	5 733
SI	182 936		61 710	17 175	23 494		102 379				30 139				57	30 196
SK	355 281	42	31		33 879		33 952	confidential			confidential			confidential	22	confidential
FI	766 400		295 400	7 500	43 400		346 300	20 300	235 400		15 200			147 800		418 700
SE	1 005 000		216 224	319 069	12 554	99 115	646 962				118 000			8 000	N/A	126 000
UK	5 577 381	confidential	4 006 629	3 481 926	160 991	2 241 184	confidential									

January 2011	New entrants' access lines by other means									TOTAL broadband lines
Country	WLL	Cable modem	Leased lines	Fiber to the home	Satellite	PLC	Other	Public access WIFI Hotspots	Tot. (exc. WIFI)	
BE	16 544	1 512 265	1 341	1 514			38		1 531 702	3 373 143
BG	10 772	144 815	56	13 596			611 817	N/A	781 056	1 125 590
CZ	720 000	504 000		17 400			156 600		1 398 000	2 268 468
DK	48 057	190 599		154 887	N/A	N/A	95 607	n/a	489 150	2 150 221
DE	29 860	2 900 000	37 000	115 400	23 490	9 600		n.a	3 115 350	26 161 950
EE	33 108	74 650		37 806			14 967	662	160 531	357 797
EL	1 040		1 700	4 323					7 063	2 252 653
ES	119 140	1 997 783	1 066	3 928	1 944		1 342		2 125 203	10 892 519
FR		1 200 000		115 000			135 000		1 450 000	21 261 000
IE	confidential	202 605	confidential	confidential	confidential			1 096	confidential	1 035 772
IT	2 529		3 654	278 777	15 000	1 420	1 243	n.a.	302 623	13 274 398
CY		16 332			488		504	30	17 324	194 455
LV	18 649	25 671	6 423	20 706	39		132 639	174	204 127	434 655
LT	59 586	48 819	1 045	920			227 767	209	338 137	684 052
LU	5	24 233	62					90	24 300	166 259
HU	101 000	748 779	n.a.	3 750	n.a.	89	215 527	n.a.	1 069 145	2 057 820
MT	4 765	53 600		1				12	58 366	121 880
NL		2 562 000		confidential					confidential	6 416 886
AT	28 000	580 000		10 000		4 400	230		622 630	2 002 307
PL	14 052	1 665 816	1 387	4 336			1 321 020	506	3 006 611	6 115 850
PT	22 401	859 574	1 683	19 748			264	nd	903 670	2 175 679
RO	20 000	428 000	10	89 000	551		1 578 000	716	2 115 561	2 999 761
SI	3 884	125 458	23	48 040	1		1 205	974	178 611	494 065
SK	200 328	94 486	285	66 285	327		115 123	56	476 834	893 221
FI	6 400	5 200		5 200			11 200		28 000	1 559 400
SE	3 000	590 000		610 000			1 000	N/A	1 204 000	2 981 962
UK	No data	4 027 516	No data	No data	No data	No data	18 000	No data	4 045 516	19 610 363

**Austria:** Several figures are estimates.

**Czech Republic:** New entrants' FTTH lines are included in new entrants' other lines.

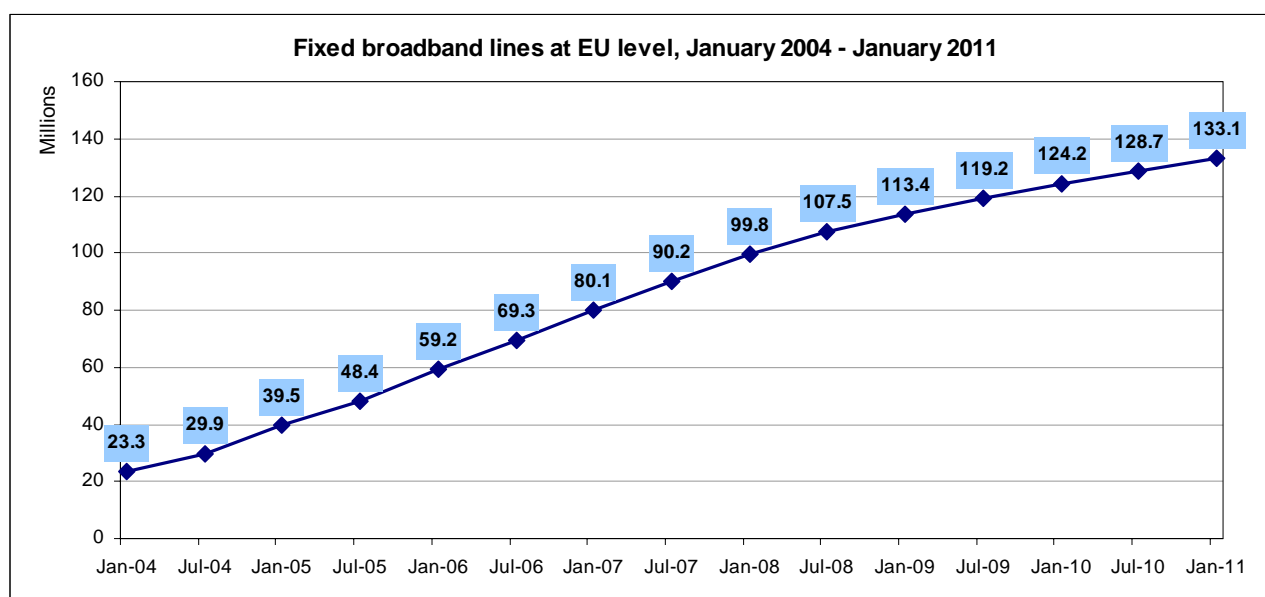
**Germany:** DSL lines include FTTC (VDSL). Fibre lines include FTTB and FTTH, but exclude FTTC (VDSL). Several figures are estimates (new entrants' own network DSL, other traditional wireline access /leased lines/). Full LLU includes wholesale DSL lines (Bitstream access, DSL resale) supplied by alternative operators to other alternative operators on the basis of unbundled local loops provided by the incumbent. Bitstream and resale access include only lines supplied by the incumbent to new entrants. FWA refers to number of subscribers.

**Poland:** Figures in LAN and WLAN are estimates.

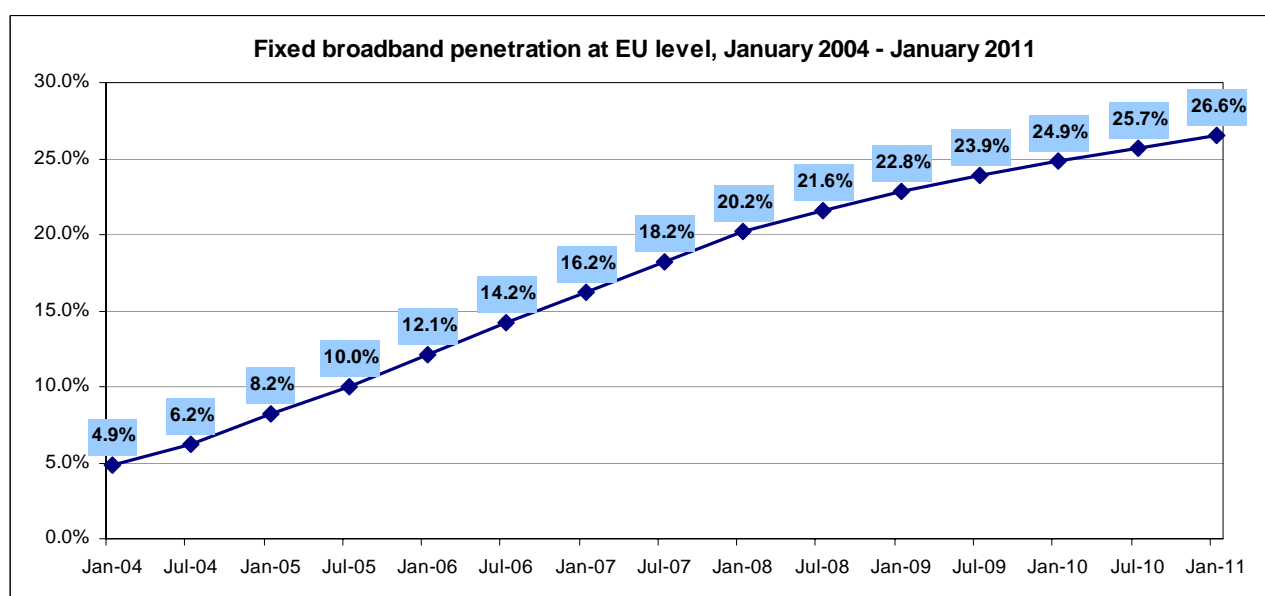
**Romania:** Data are provisional.



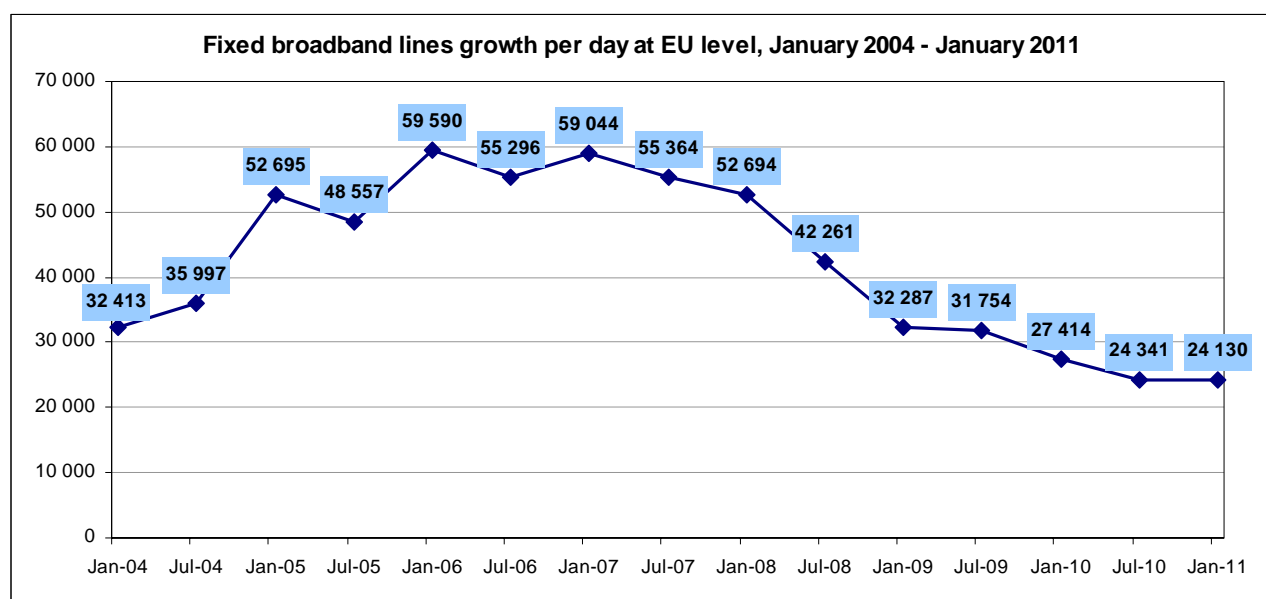
**Figure 39: Fixed broadband lines at EU level, January 2004 - January 2011**



**Figure 40: Fixed broadband penetration at EU level, January 2004 - January 2011**



**Figure 41: Fixed broadband lines growth per day at EU level, January 2004 - January 2011**



**Figure 42: Fixed broadband lines, January 2011**

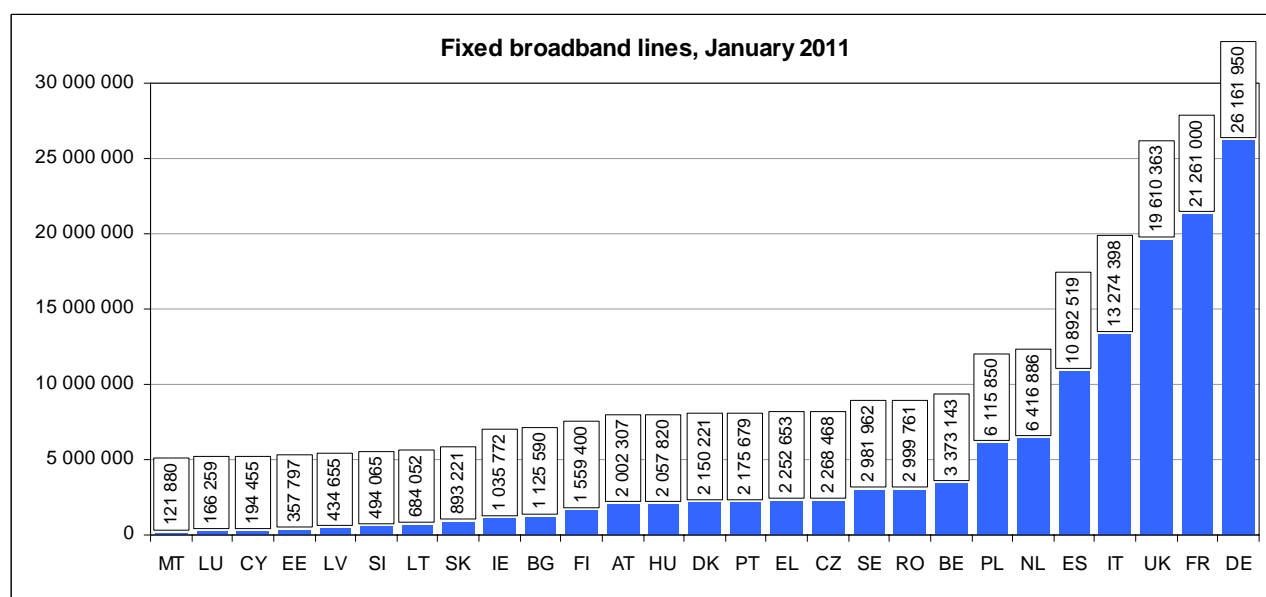


Figure 43: Fixed broadband penetration, January 2011

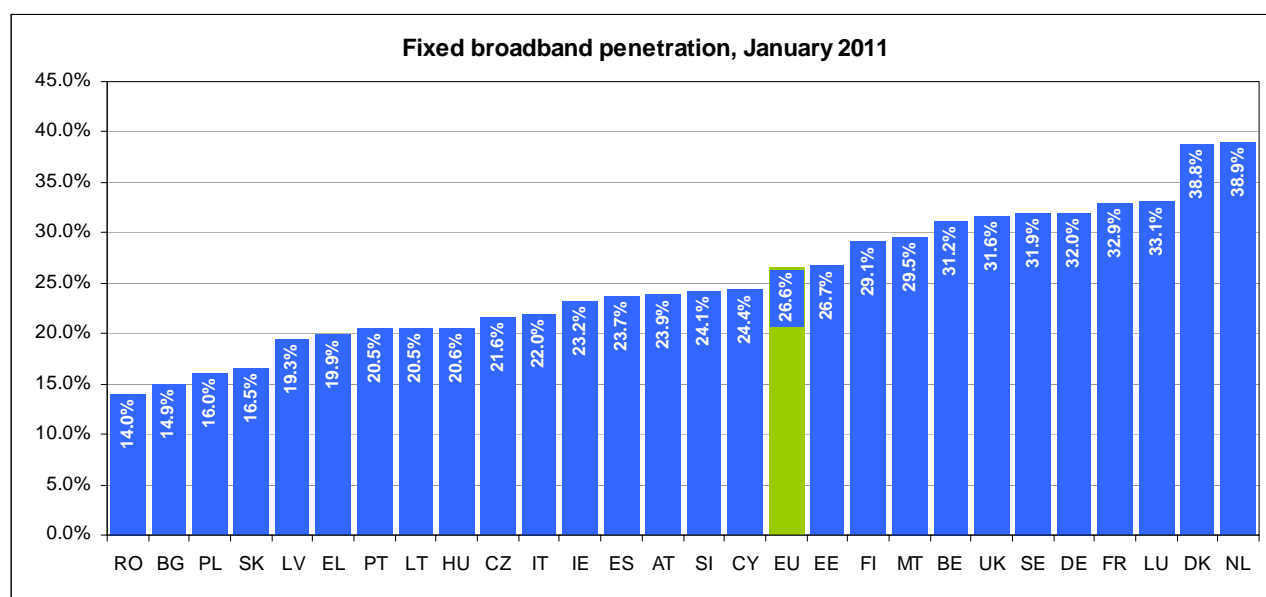
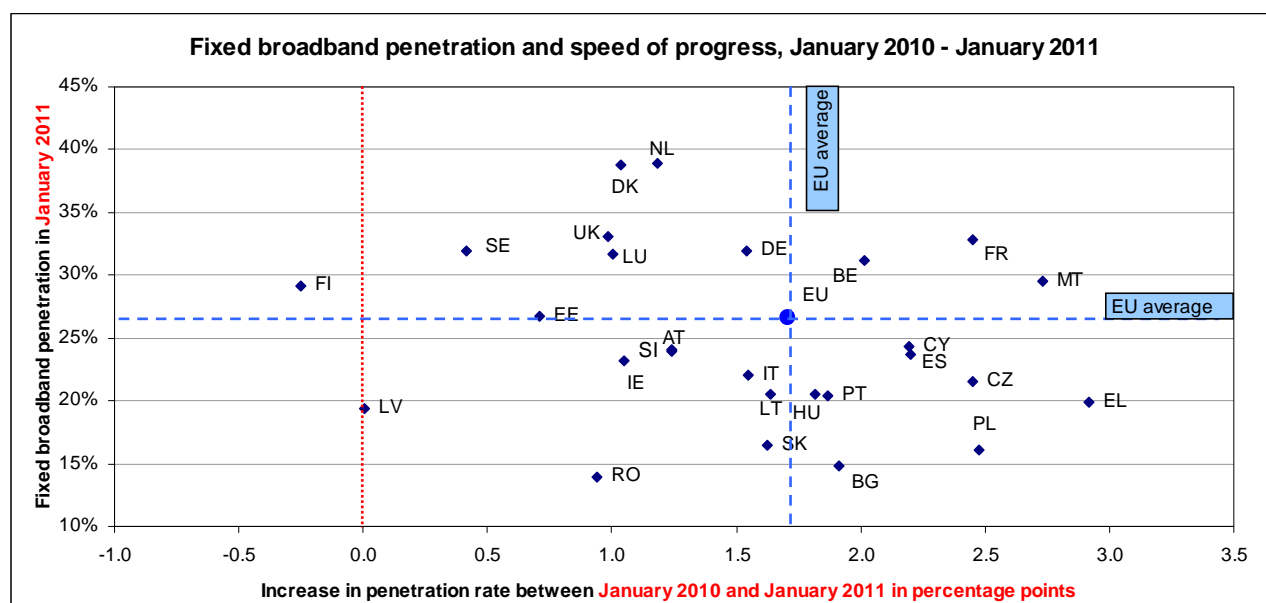
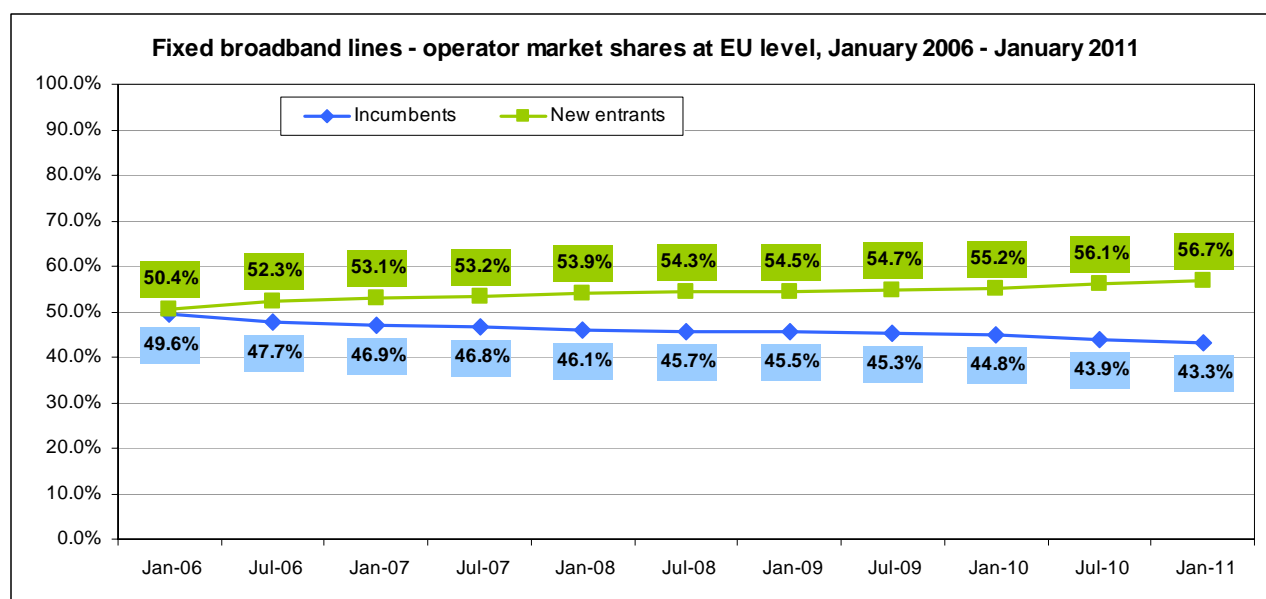


Figure 44: Fixed broadband penetration and speed of progress, January 2010 – January 2011



**Figure 45: EU fixed broadband lines – operator market shares at EU level, January 2006 – January 2011**



**Figure 46: EU fixed broadband lines – net adds per day by operator at EU level, January 2006 – January 2011**

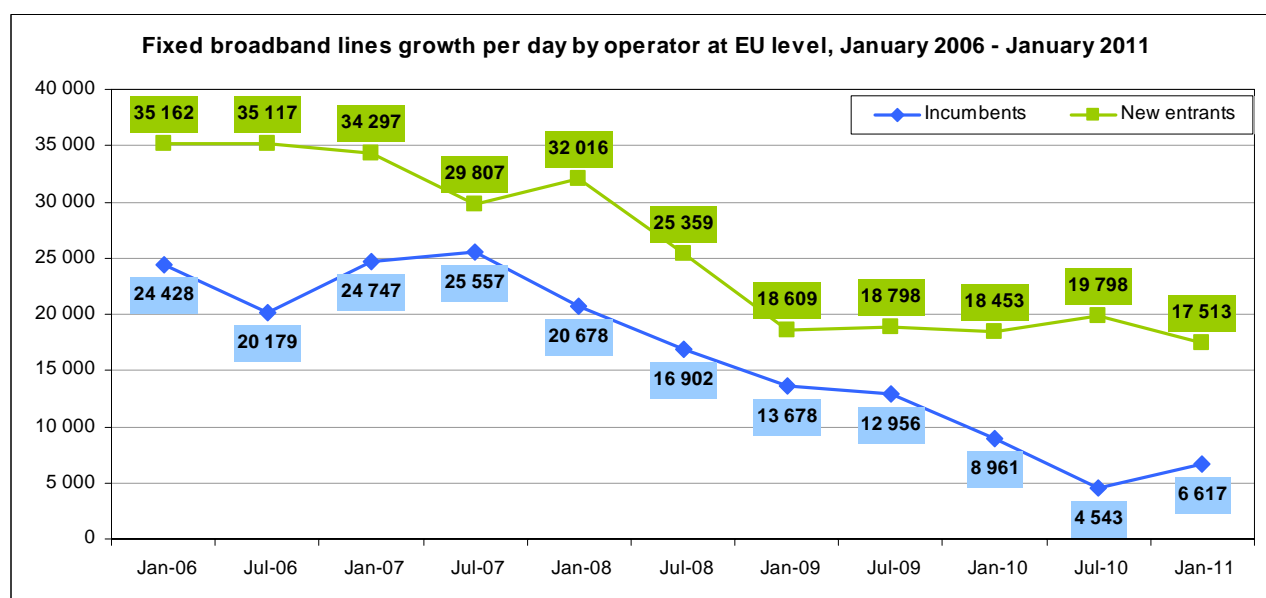


Figure 47: EU fixed broadband lines – operator market shares, January 2011

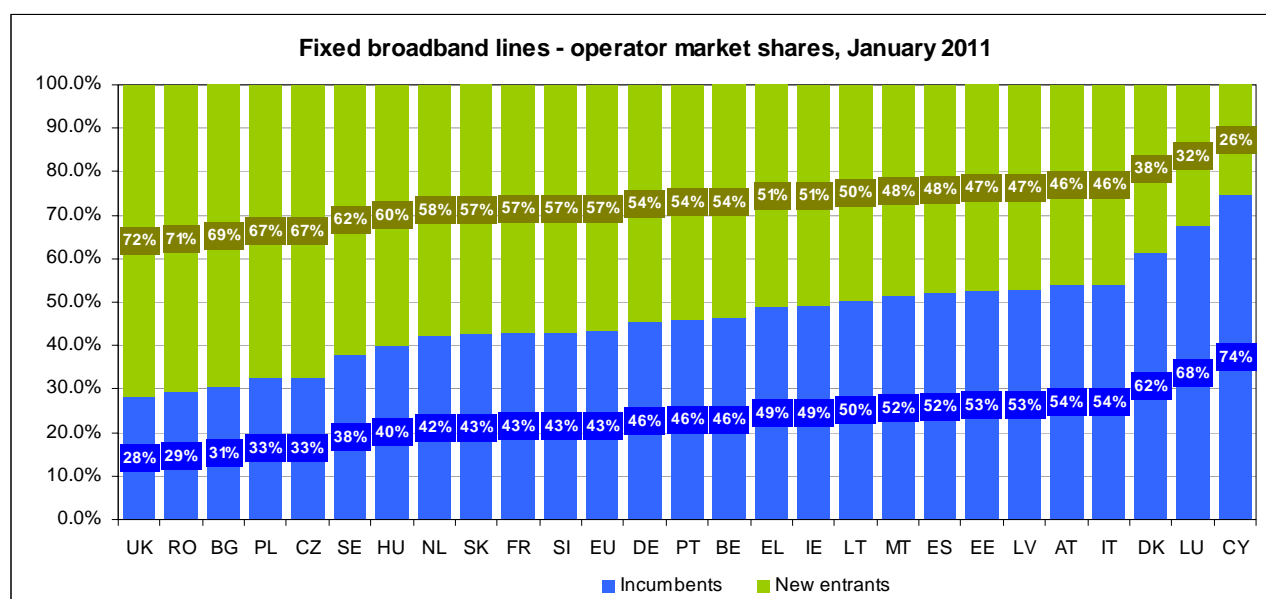
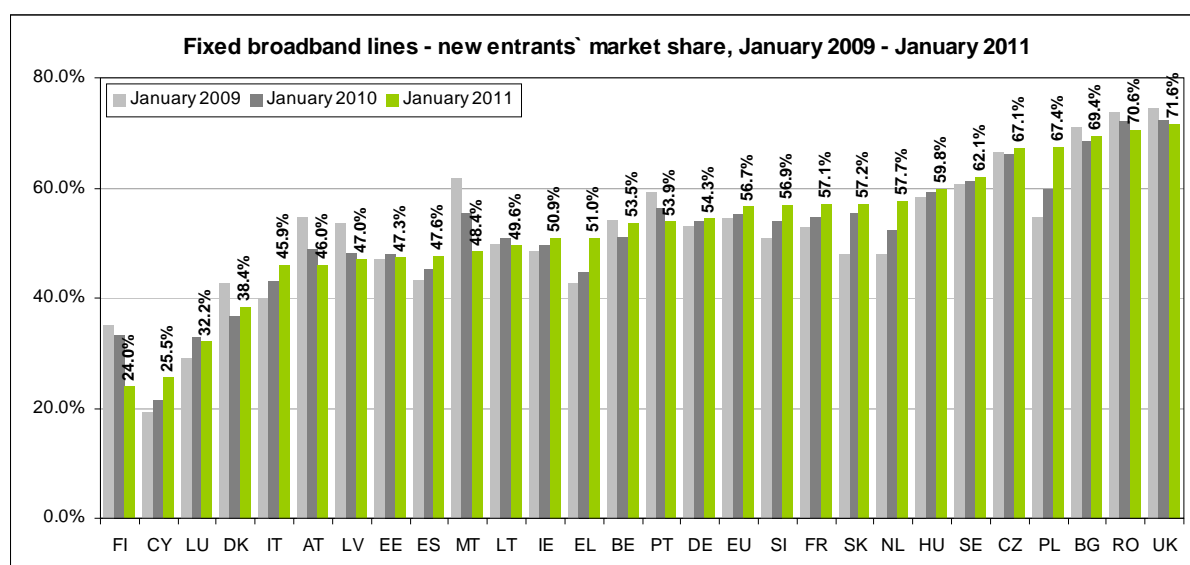
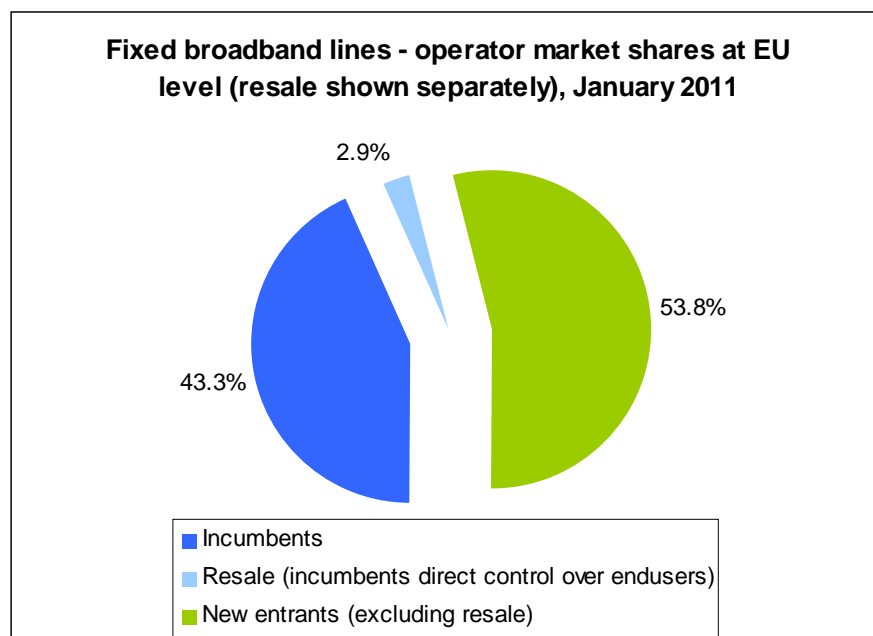


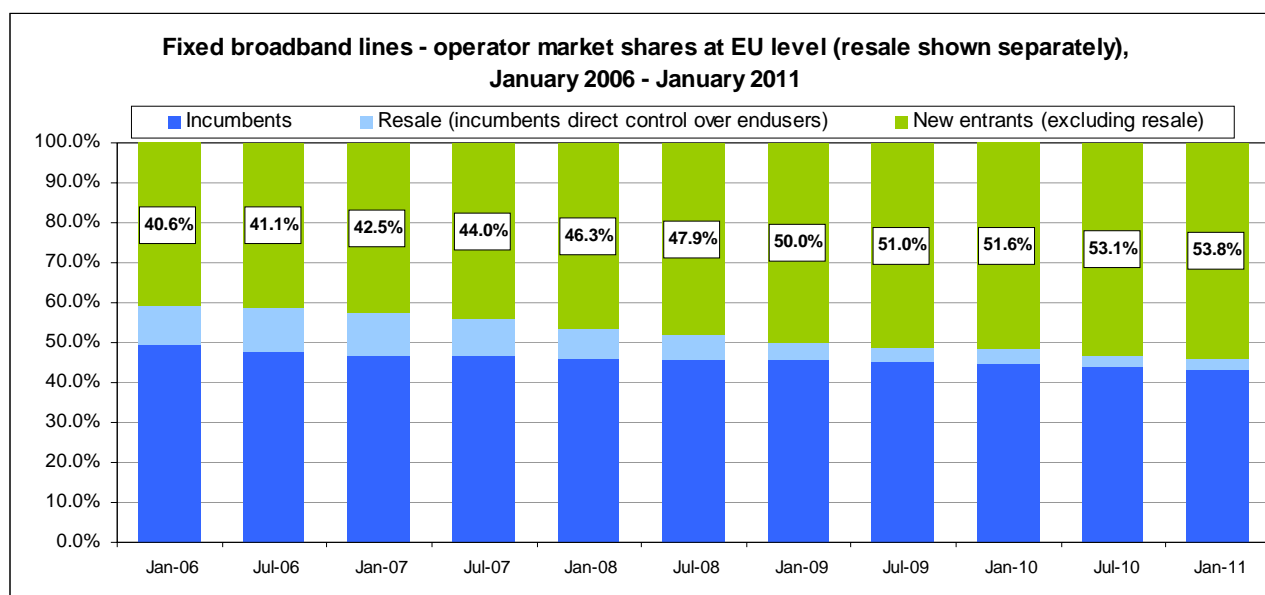
Figure 48: Fixed broadband lines – new entrants' market share, January 2009 – January 2011



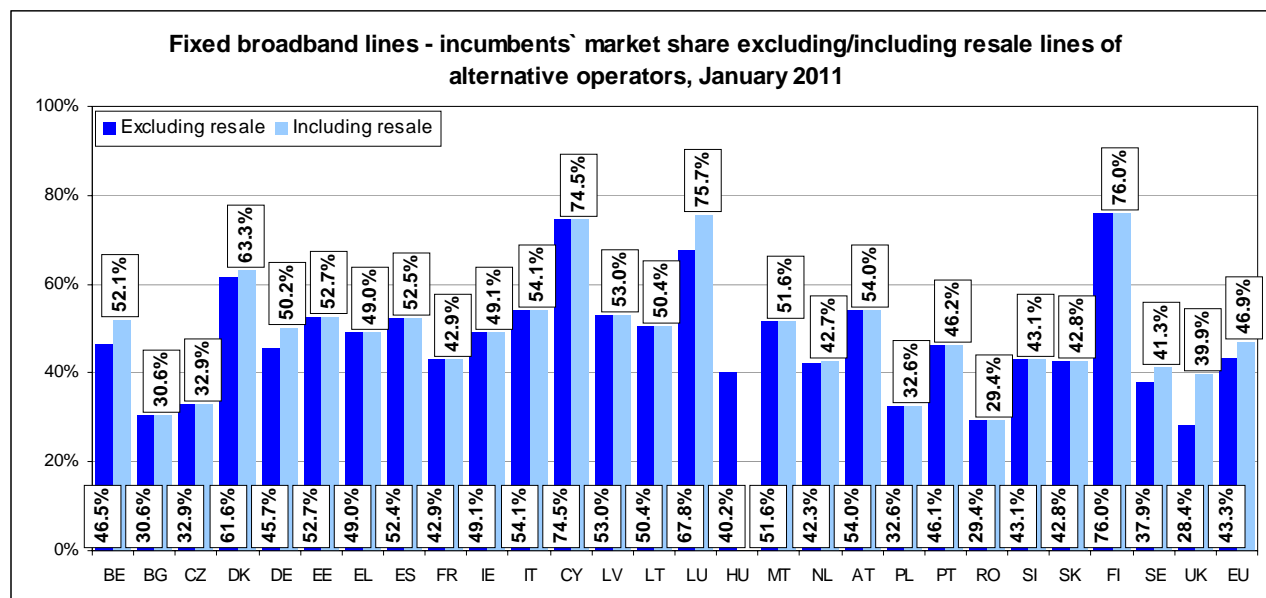
**Figure 49: Fixed broadband lines – operator market shares at EU level (resale shown separately), January 2011**



**Figure 50: Fixed broadband lines – operator market shares at EU level (resale shown separately), January 2006 – January 2011**



**Figure 51: Fixed broadband lines – incumbents' market share excluding/including resale lines, January 2011**



**Figure 52: Fixed broadband lines – technology market shares at EU level, January 2006 – January 2011**

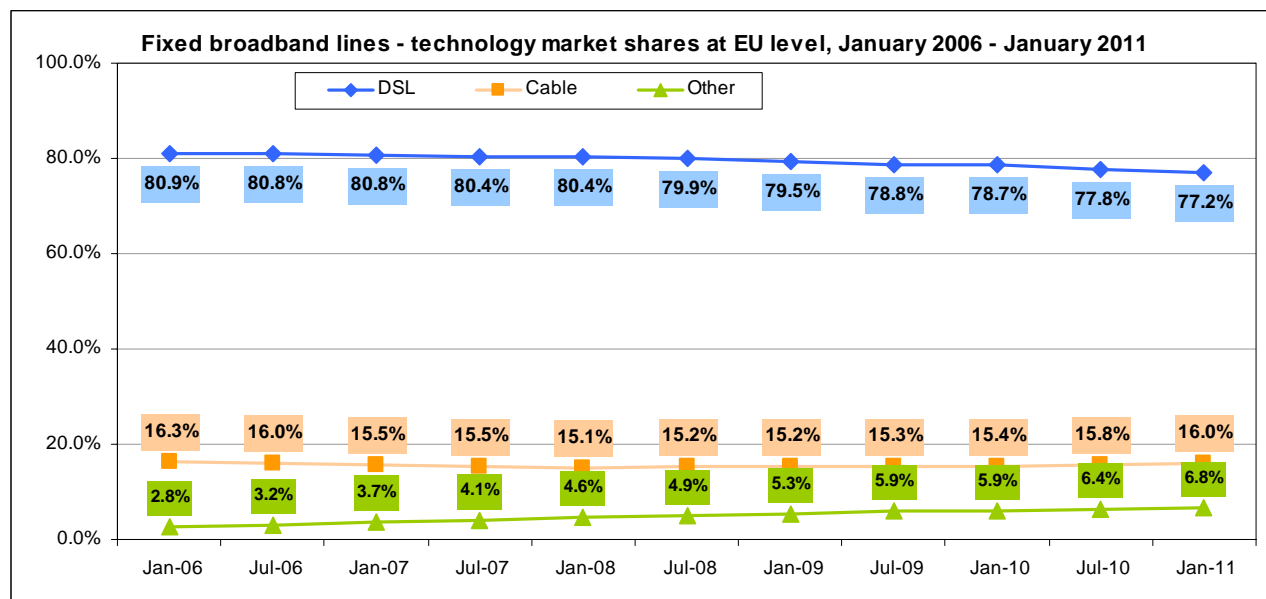


Figure 53: Fixed broadband lines – technology market shares, January 2011

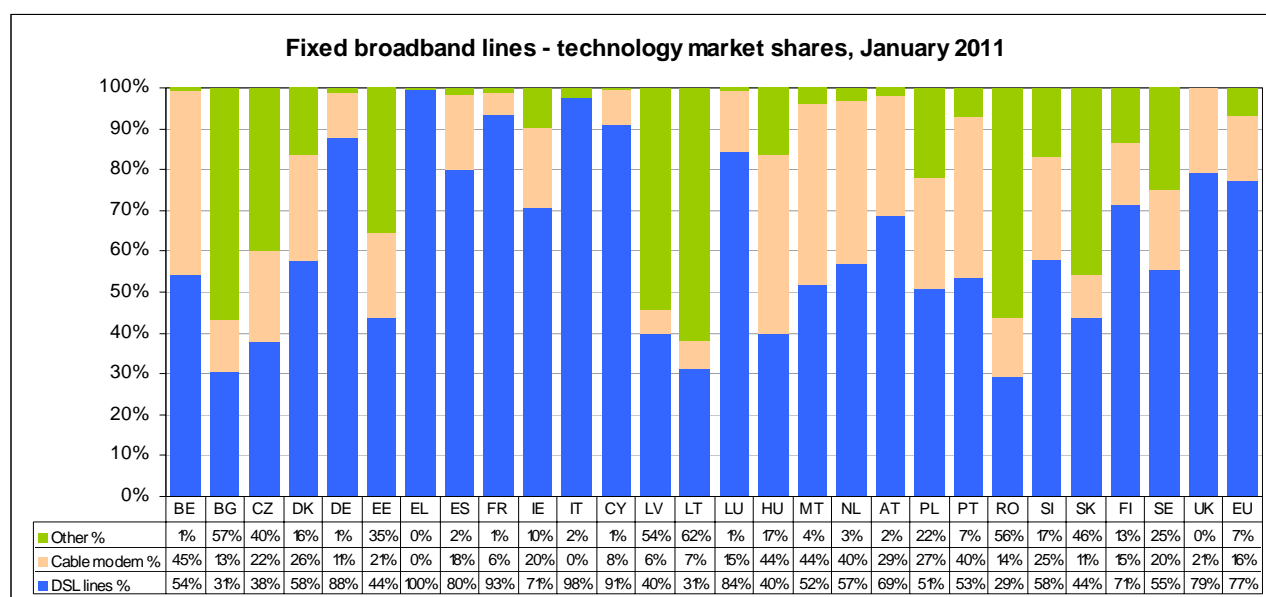


Figure 54: Fixed broadband net adds by technology at EU level, January 2006 – January 2011

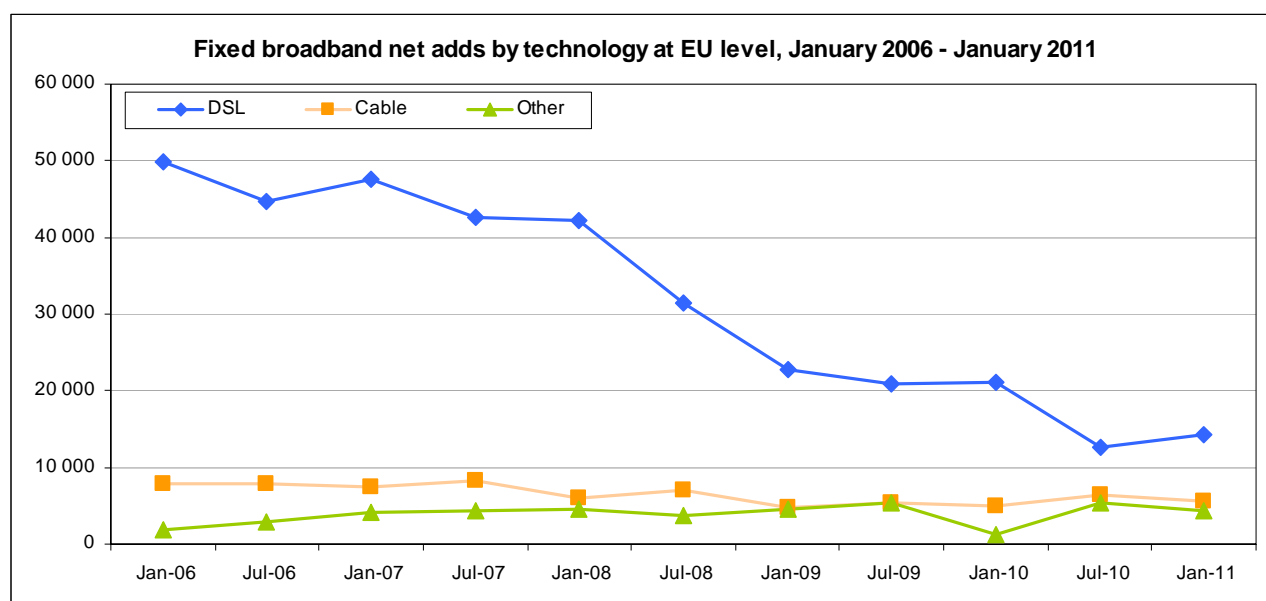




Figure 55: DSL lines, January 2011

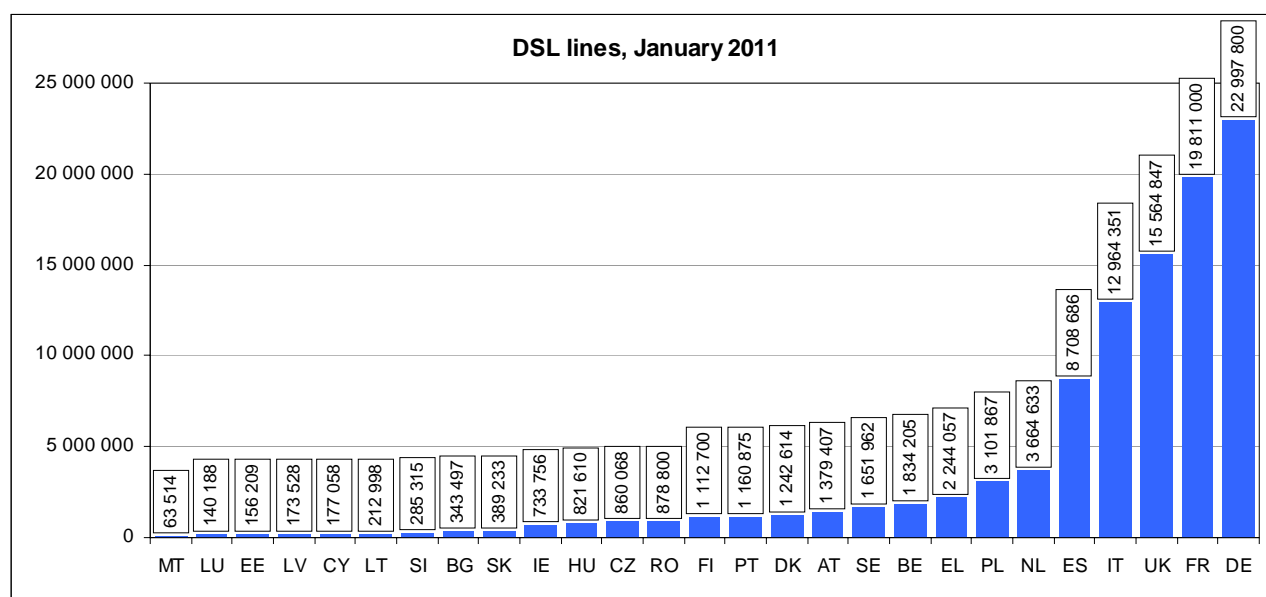


Figure 56: DSL lines and market share at EU level, January 2006 – January 2011

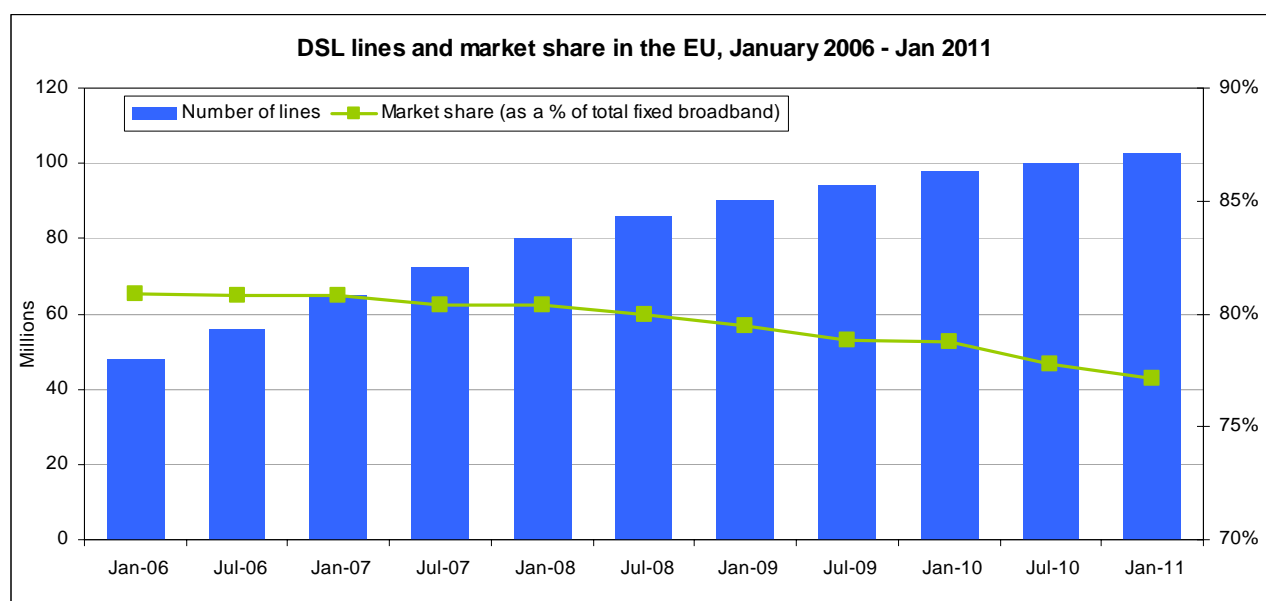


Figure 57: DSL lines – operator market shares at EU level, January 2006 - January 2011

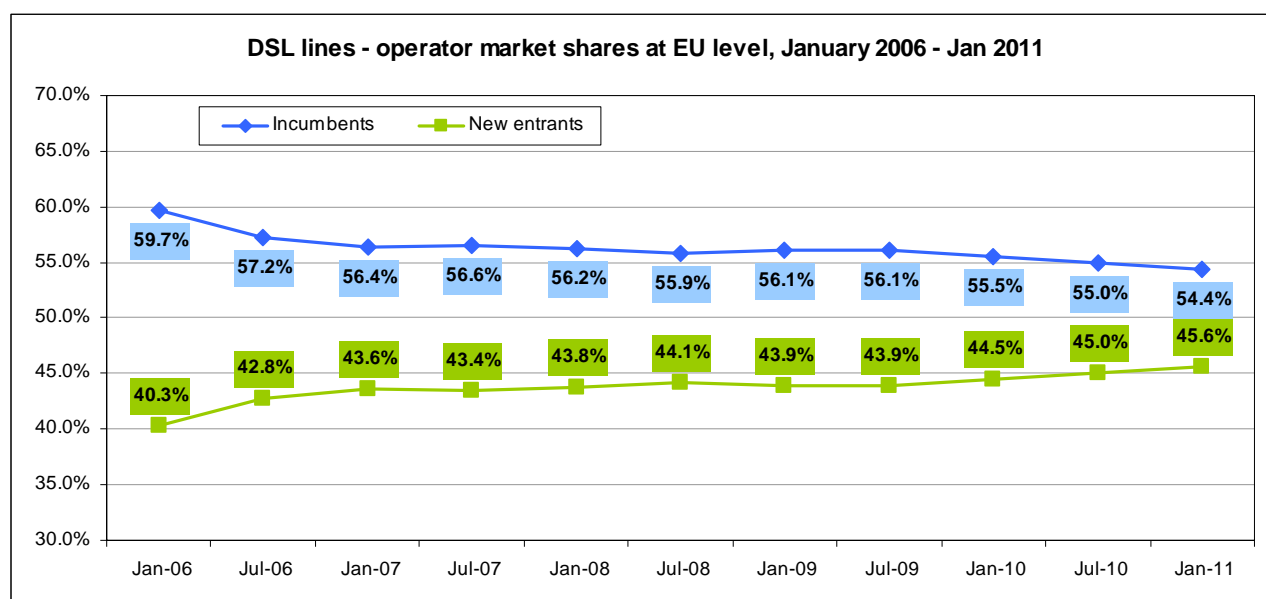


Figure 58: DSL lines – operator market shares, January 2011

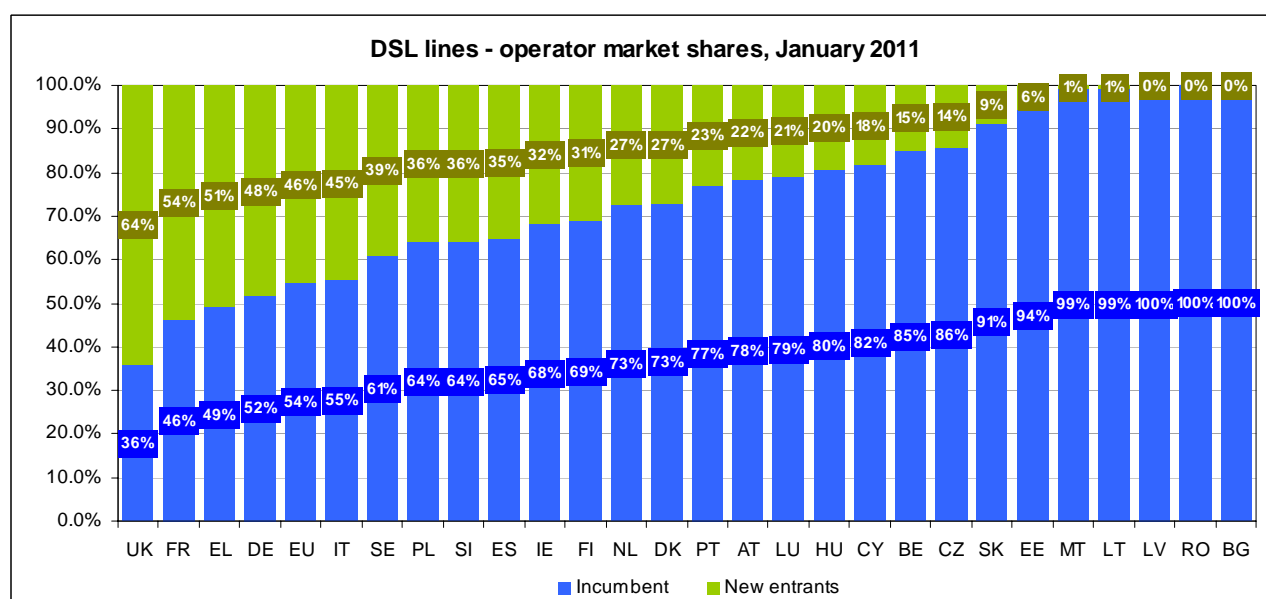


Figure 59: DSL lines – new entrants' market share, January 2009 - January 2011

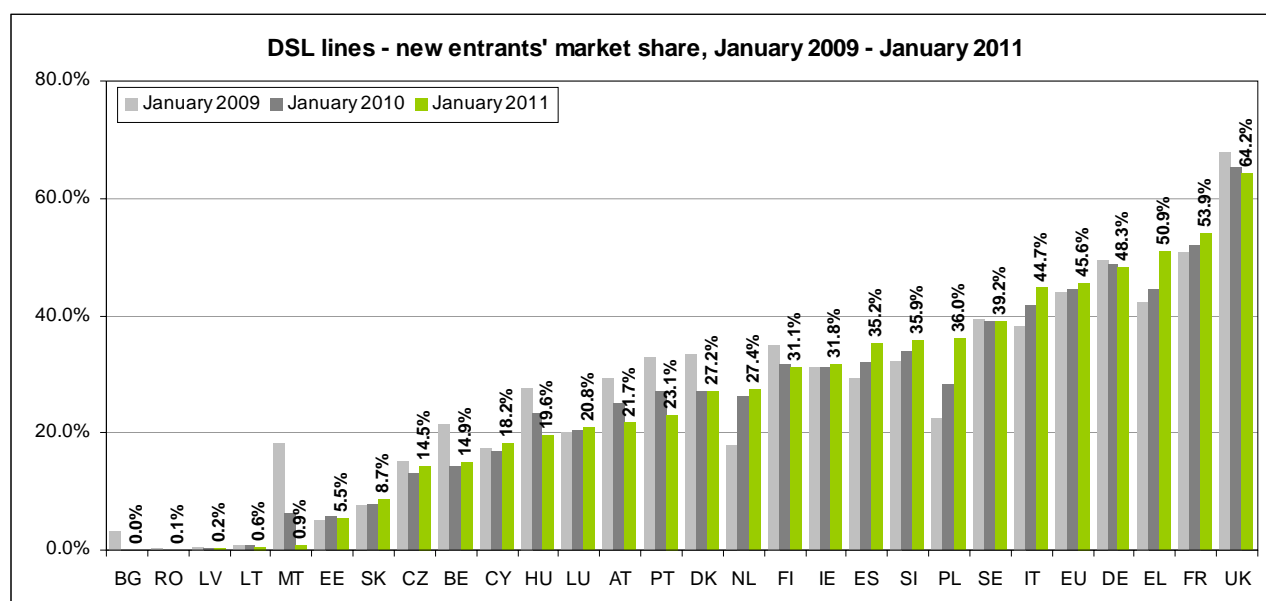


Figure 60: New entrants' DSL lines by type of access at EU level, January 2011

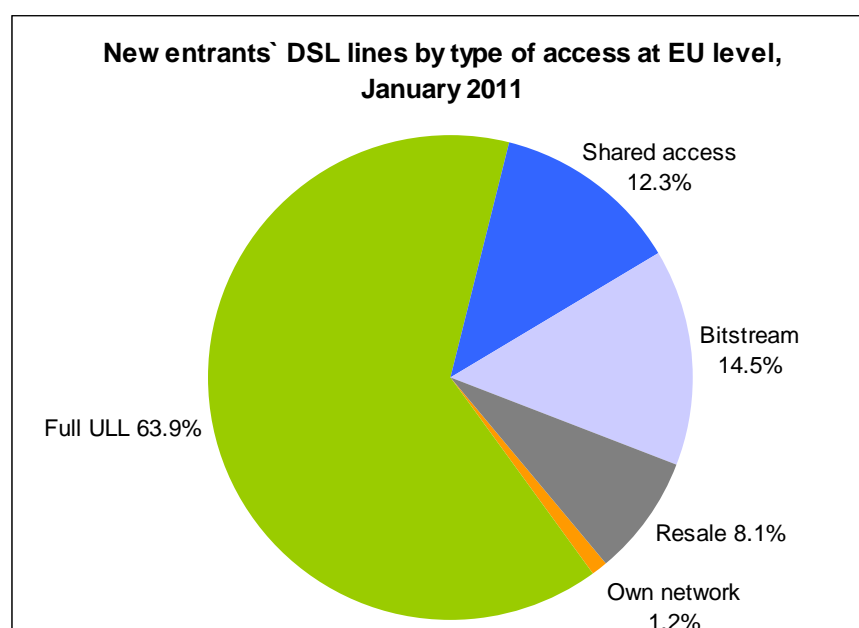


Figure 61: New entrants' DSL lines by type of access at EU level, January 2008 - January 2011

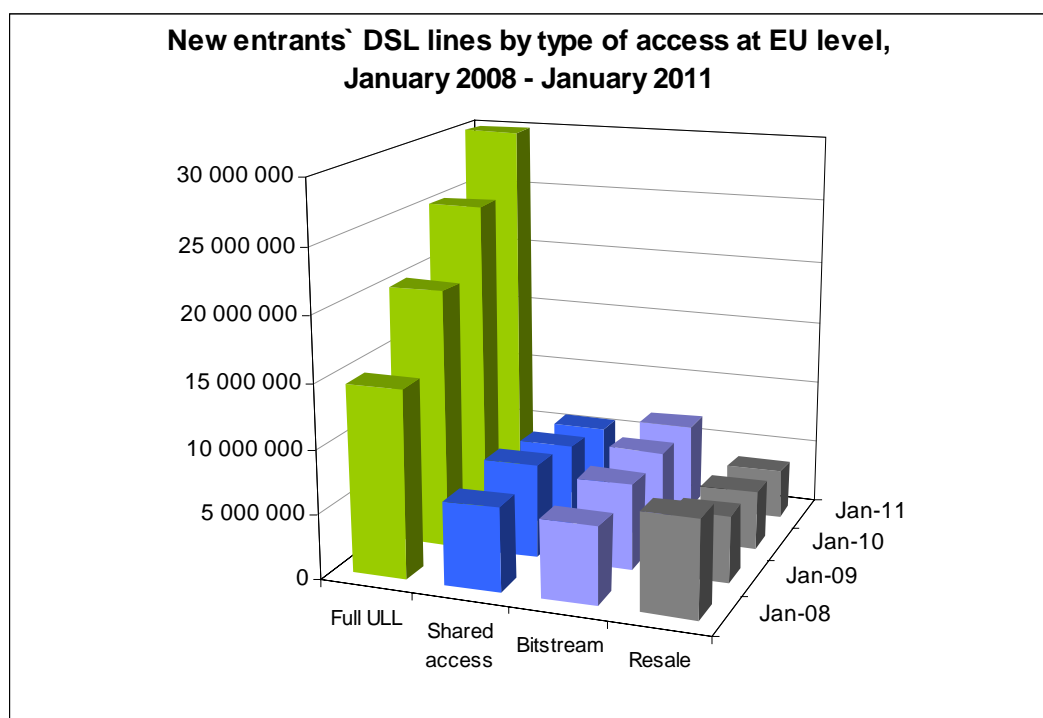


Figure 62: New entrants' DSL lines by type of access, January 2011

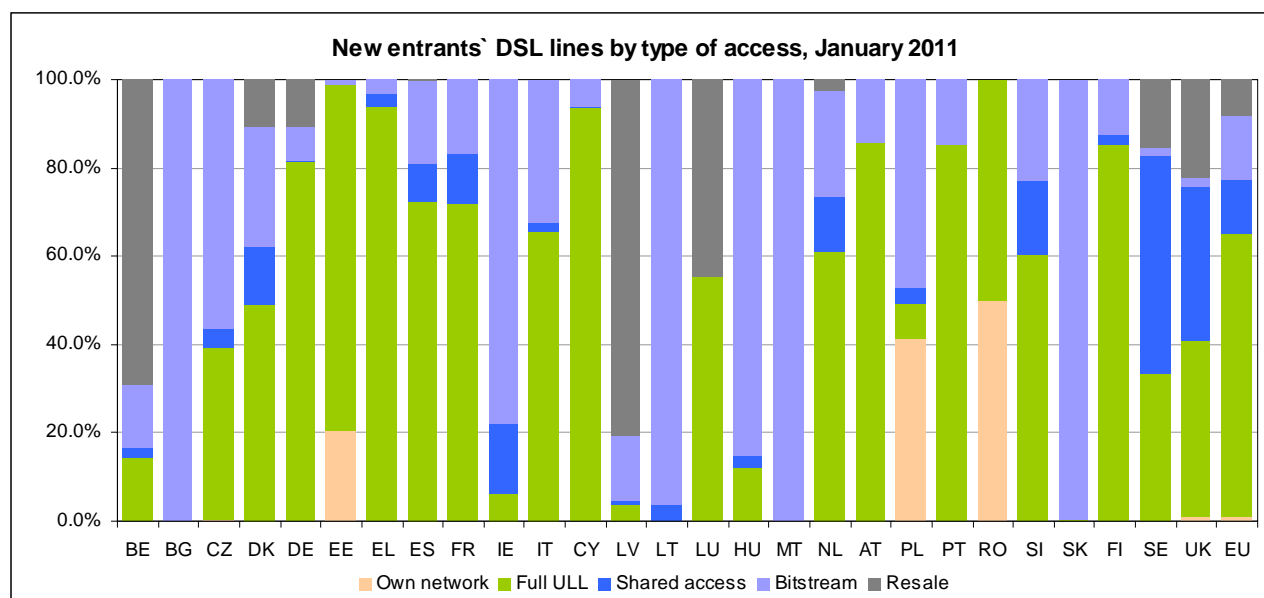


Figure 63: Cable internet lines, January 2011

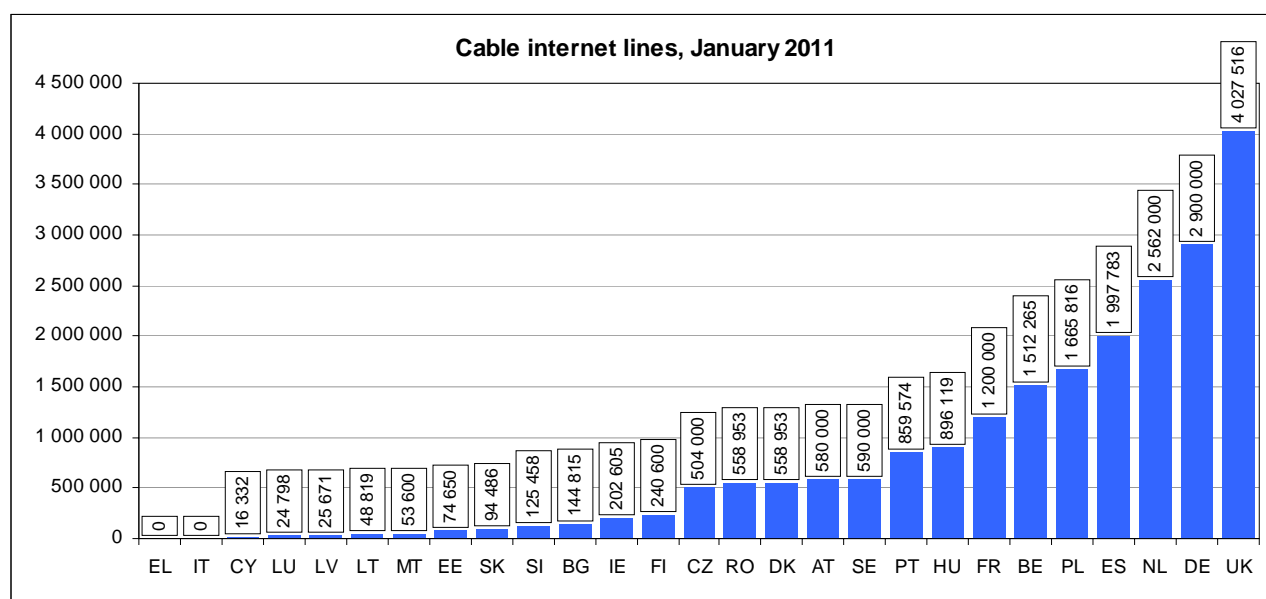
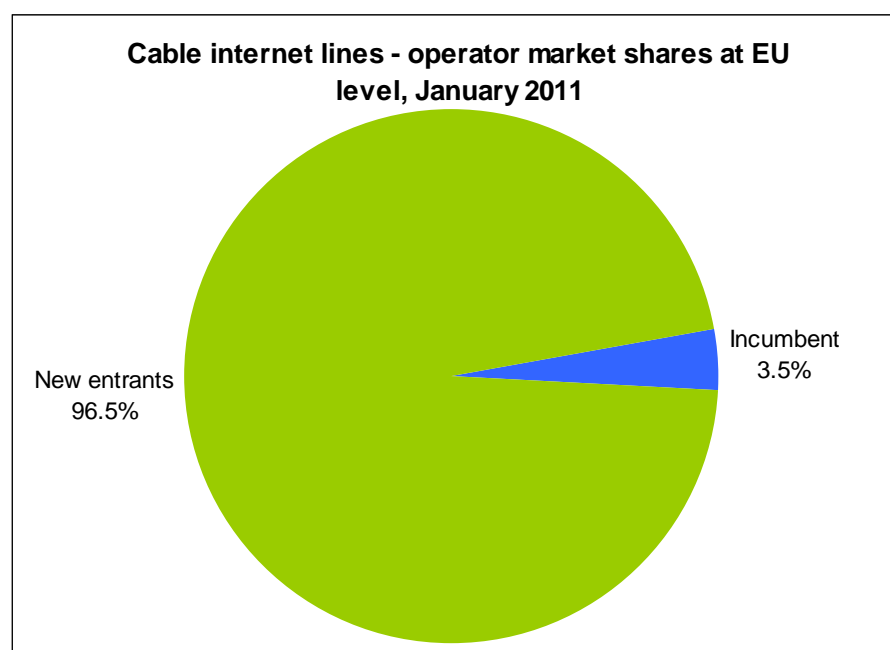


Figure 64: Cable internet lines at EU level, January 2011



#### 4.4 Fixed broadband lines by speed

Figure 65: Fixed broadband lines by speed at EU level, January 2008 – January 2011

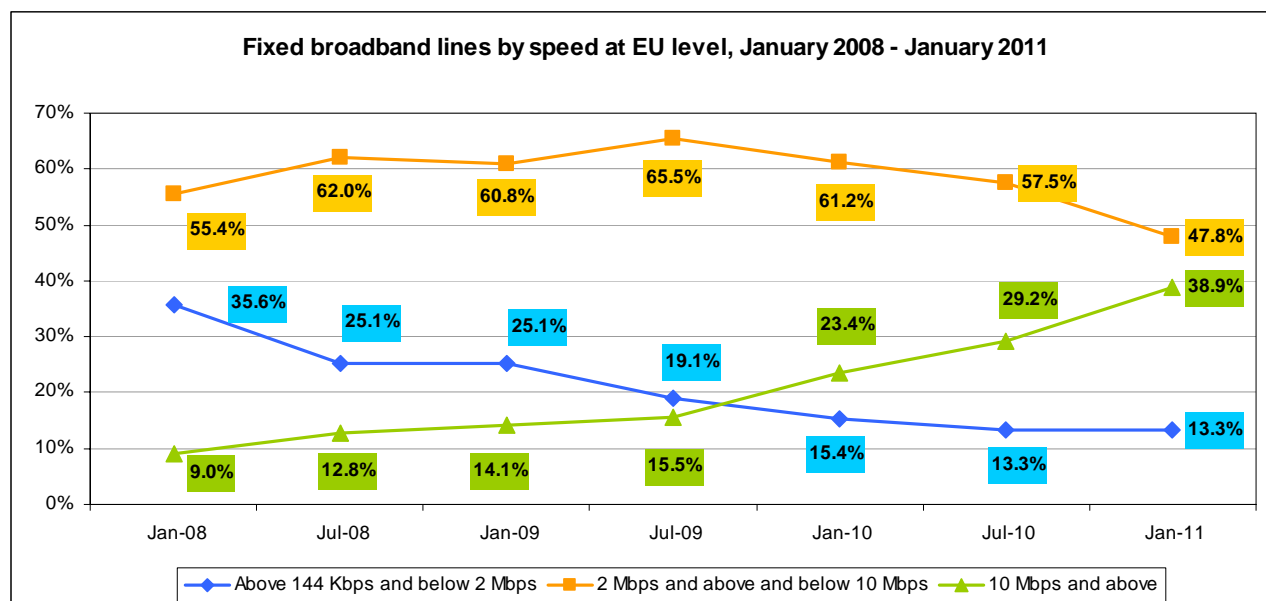
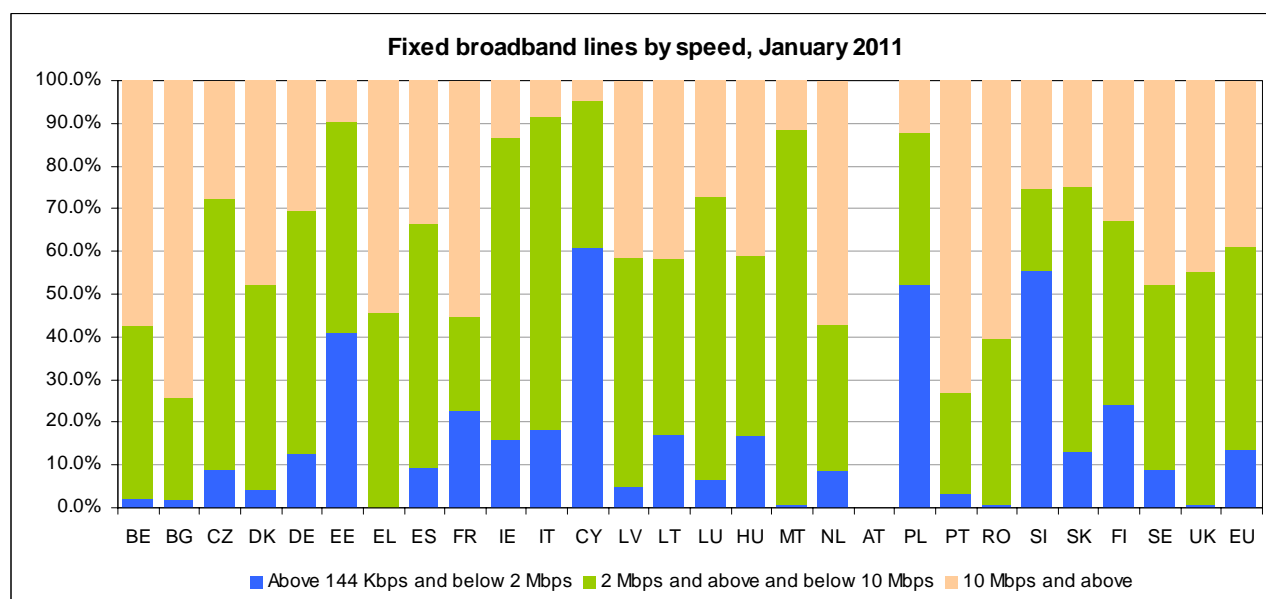
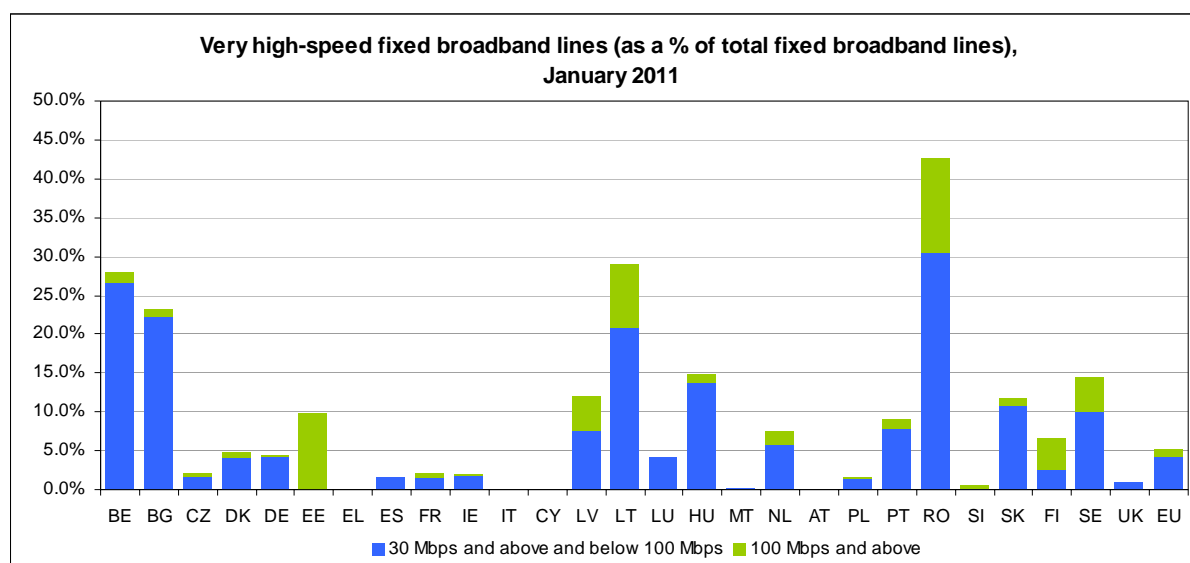


Figure 66: Fixed broadband lines by speed, January 2011



**Figure 67: Very high speed fixed broadband lines, January 2011**

**Austria:** Data are not available.

**Germany:** Figures are partly based on estimates.

**Finland:** Slightly different speed categories were used. The category between 10 Mbps (included) and 30 Mbps only includes between 10 Mbps (included) and 25 Mbps. The category between 30 Mbps (included) and 100 Mbps only includes between 25Mbps (included) and 100 Mbps.

**France:** Figures are partly based on estimates.

**Hungary:** Speed breakdown is not available for LLU lines.

**Netherlands:** Data for some small operators are not included.

**Romania:** Data are provisional. Data for alternative operators are estimated.

## 4.5 Retail mobile broadband access

Figure 68: Mobile broadband – all active users, January 2011

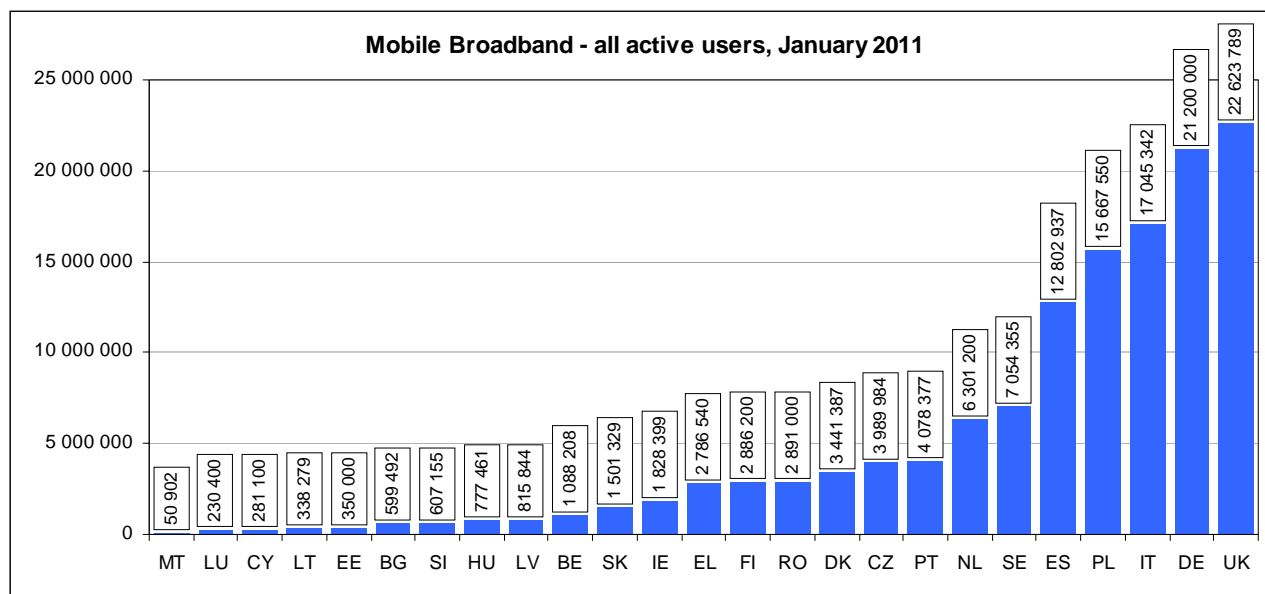
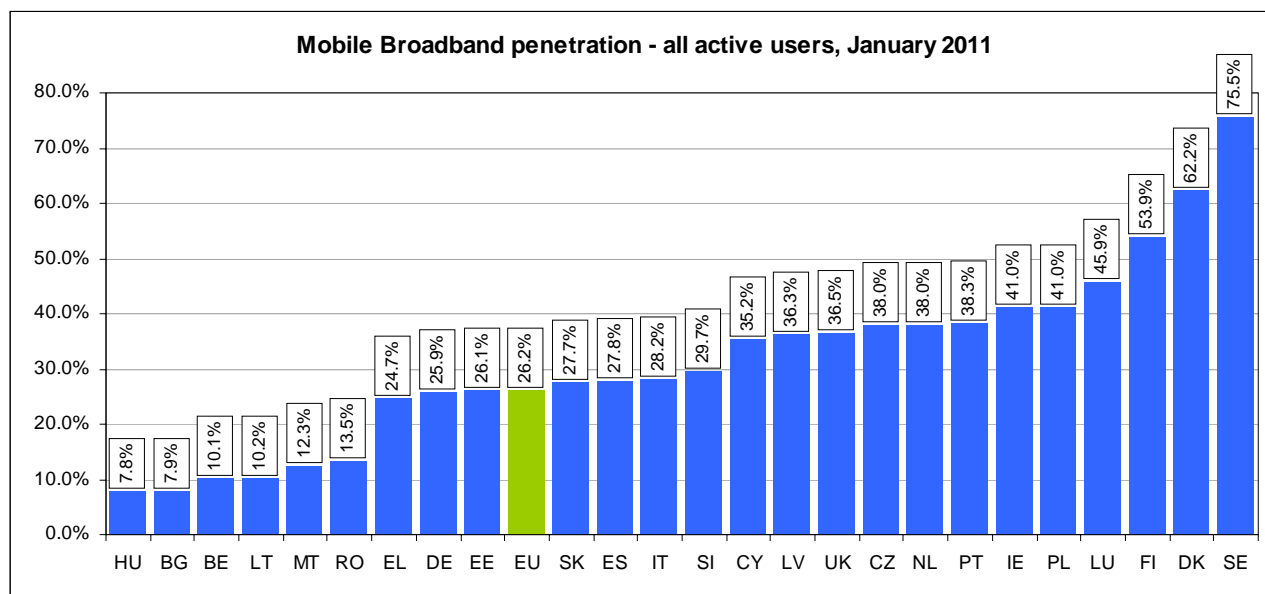
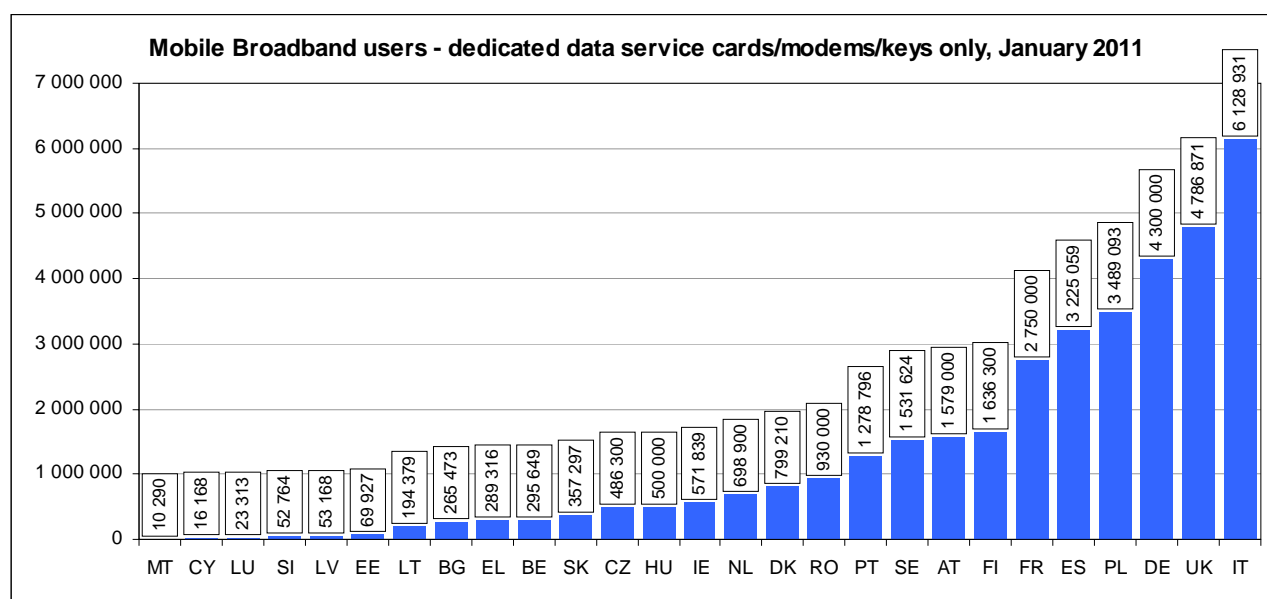
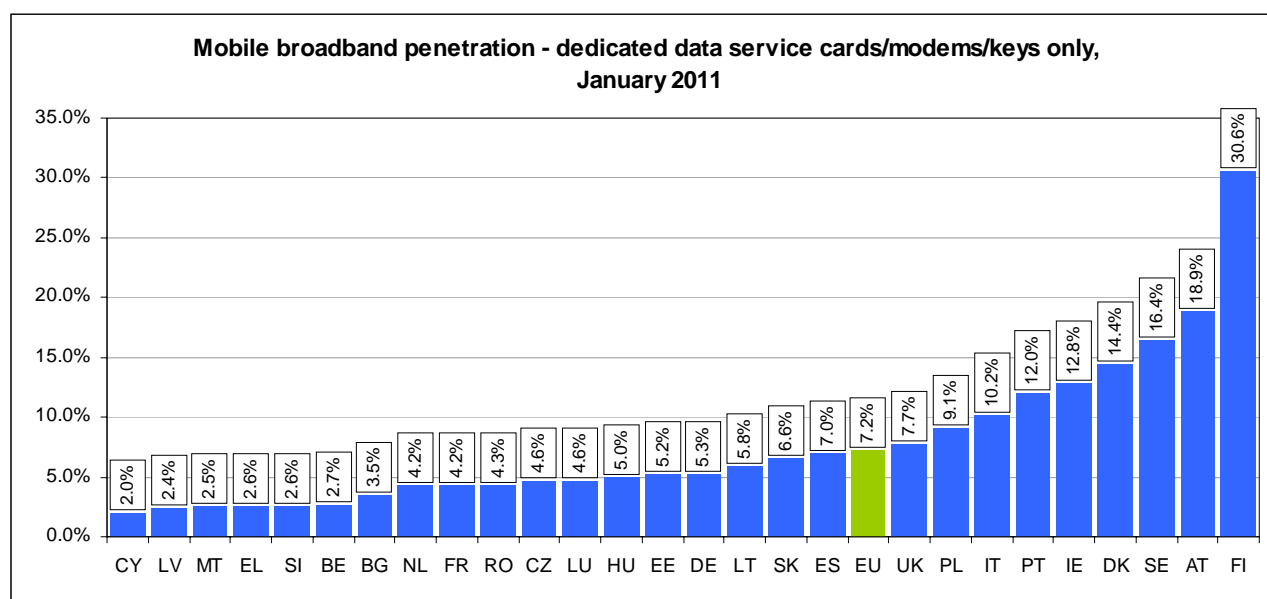


Figure 69: Mobile broadband penetration – all active users, January 2011





**Figure 70: Mobile broadband users – dedicated data service cards/modems/keys only, January 2011****Figure 71: Mobile broadband penetration – dedicated data service cards/modems/keys only, January 2011**

**Austria:** Figures are estimates. Mobile BB dedicated data services via cards/modems/keys" includes the number of contracts with dedicated data volume of 250 MB or more per month as well as dedicated prepaid data services (UMTS/HSPA) with at least 750 MB/quarter downloaded.

**Germany:** Figures are estimates.

**Estonia:** Figure on all active users is an estimate.

**France:** "Mobile BB dedicated data services via cards/modems/keys only" also includes inactive subscriptions.

**Hungary:** Figure on "Mobile BB dedicated data services via cards/modems/keys only" is an estimate.

**Ireland:** Data on all active users does not include one of the operators. Data on Mobile BB dedicated data services via cards/modems/keys only refers to download speeds of 2-10 Mbps.

**Luxembourg:** Figure on "mobile BB dedicated data services via cards/modems/keys only" includes only two operators.

**Netherlands:** Data is as of 1 July 2010.

**Portugal:** Those subscriptions are included that made a mobile broadband connection in the last 30 days.

**Romania:** Data are provisional.

## 4.6 Price of the Local Loop

This section illustrates the cost of connection and monthly rental for both Fully Unbundled Access (full LLU) and Shared Access (SA) to the loop. Monthly rental and connection fees are presented as well as the total average monthly cost, which is calculated as the monthly fee + the connection fee amortised over three years.

Unless otherwise stated in the footnotes, connection fees include the technical expertise to assess the speed that can be conveyed through and disconnection fees (where applicable). Furthermore, only the price for a single line is presented here (charges may be different in the case of subsequent access). It is assumed that the loop is active and it will be used to provide both telephony and DSL services. Unless otherwise stated, figures exclude a whole range of additional one-off costs that may exist in some Member States like cost of co-location, cost for the cable termination point, cost for installation at the end-user premises, etc.

Data is not always comparable with those of the previous reports, due to changes in methodology in some countries.

The following charts illustrate the monthly total cost for the full Local Loop Unbundling and Shared Access (connection and monthly fees) based on the assumption that the loop is used for three years. The EU average since 2005 is also shown.

**Figure 72: LLU monthly average total cost at EU level, October 2005 – October 2010**

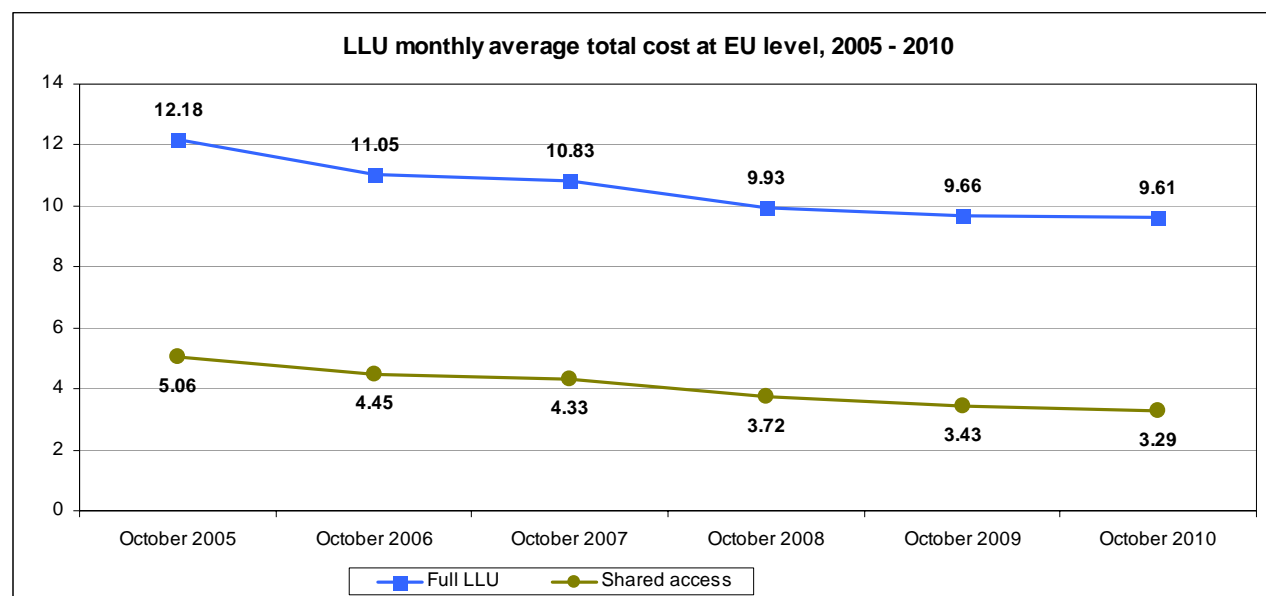
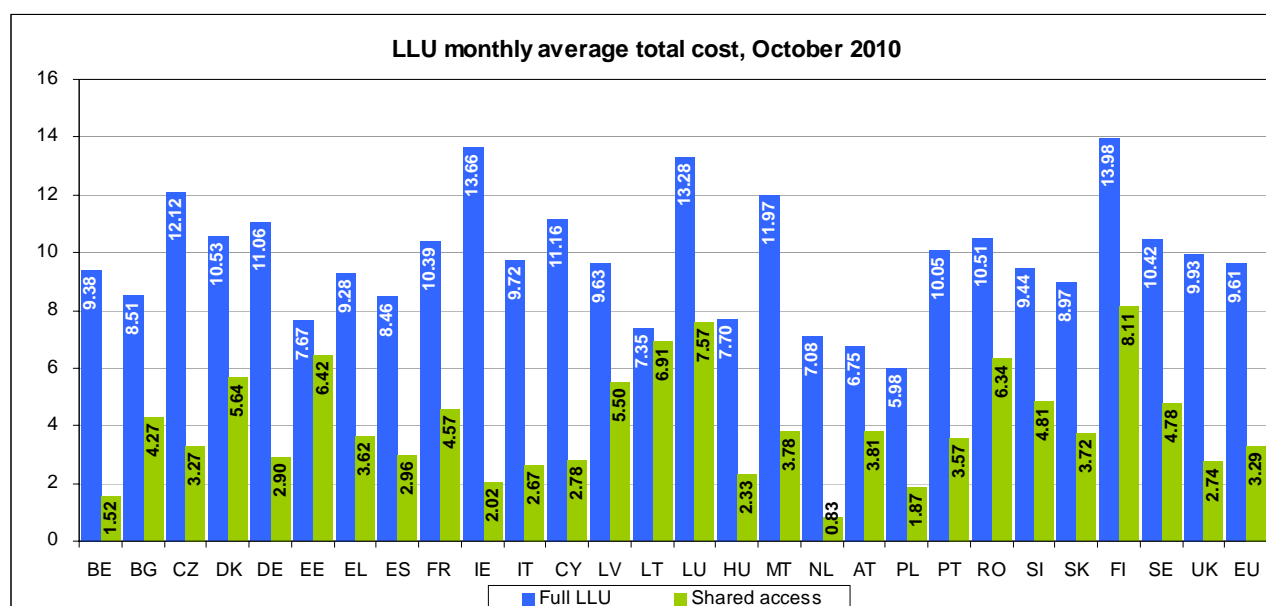


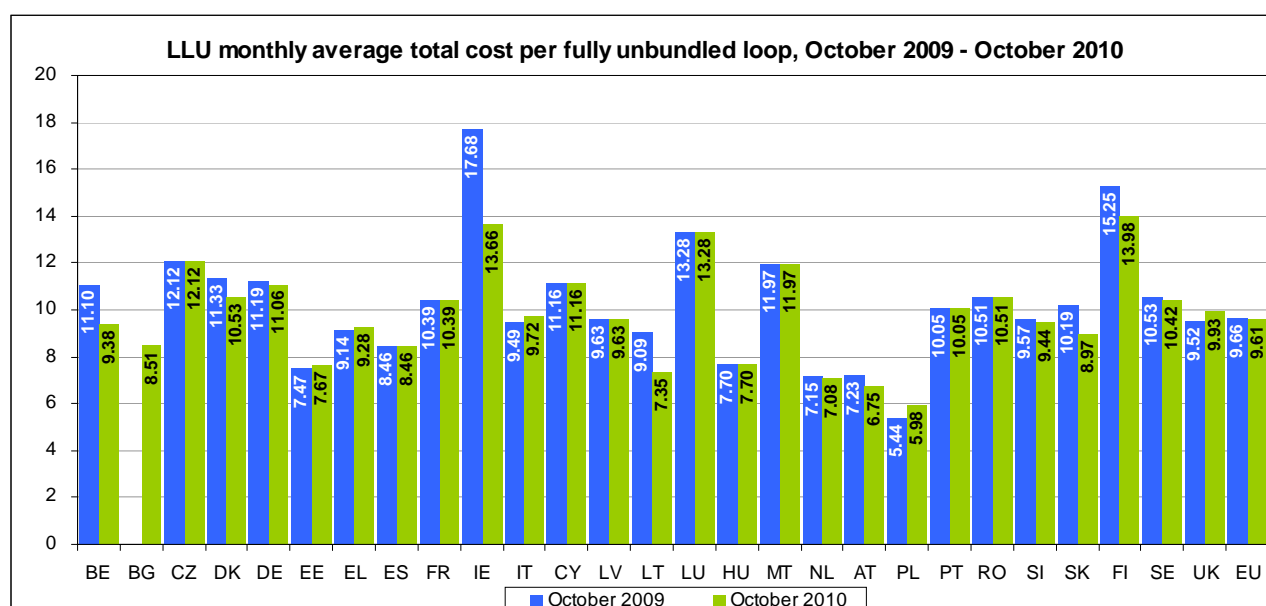
Figure 73: LLU monthly average total cost, October 2010



**Czech Republic:** 2010 prices were revised on 18/10/2010.

**United Kingdom:** On 14/10/2010 the monthly rental for full unbundled local loop and for shared access was changed to £7.42 and to £1.25 respectively following appeal of the charge controls.

Figure 74: LLU monthly average total cost per fully unbundled loop, October 2009 – October 2010

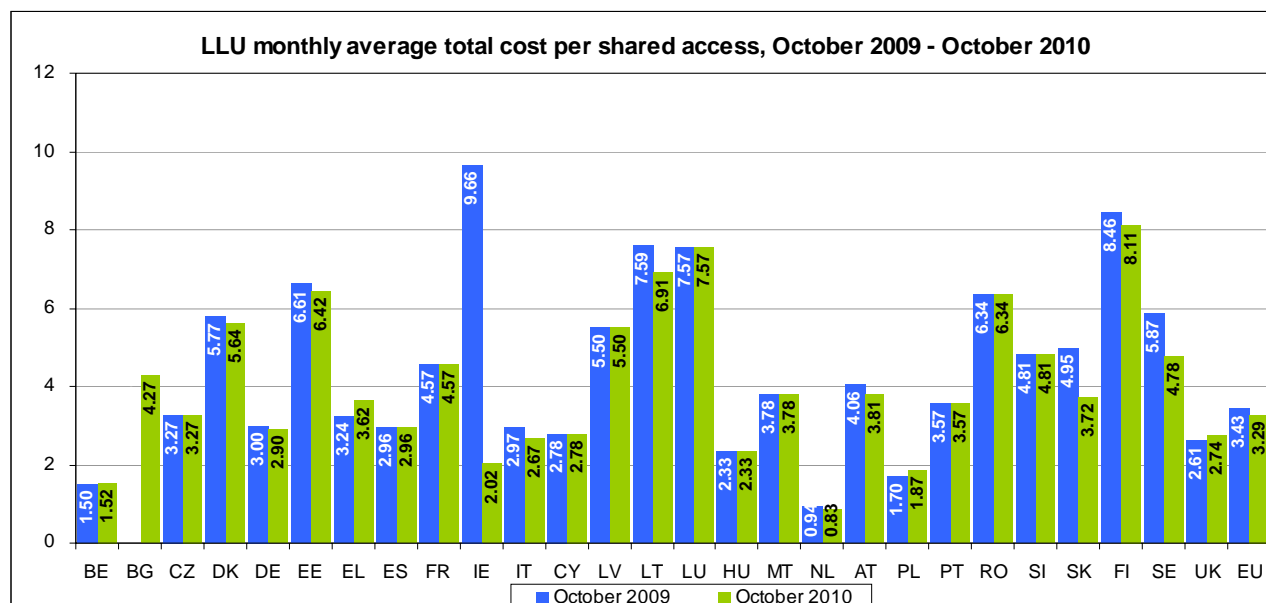


**Bulgaria:** 2009 data are confidential.

**Czech Republic:** 2010 prices were revised on 18/10/2010.

**United Kingdom:** On 14/10/2010 the monthly rental for full unbundled local loop was changed to £7.42 following appeal of the charge controls

Figure 75: LLU monthly average total cost per shared access, October 2009 – October 2010

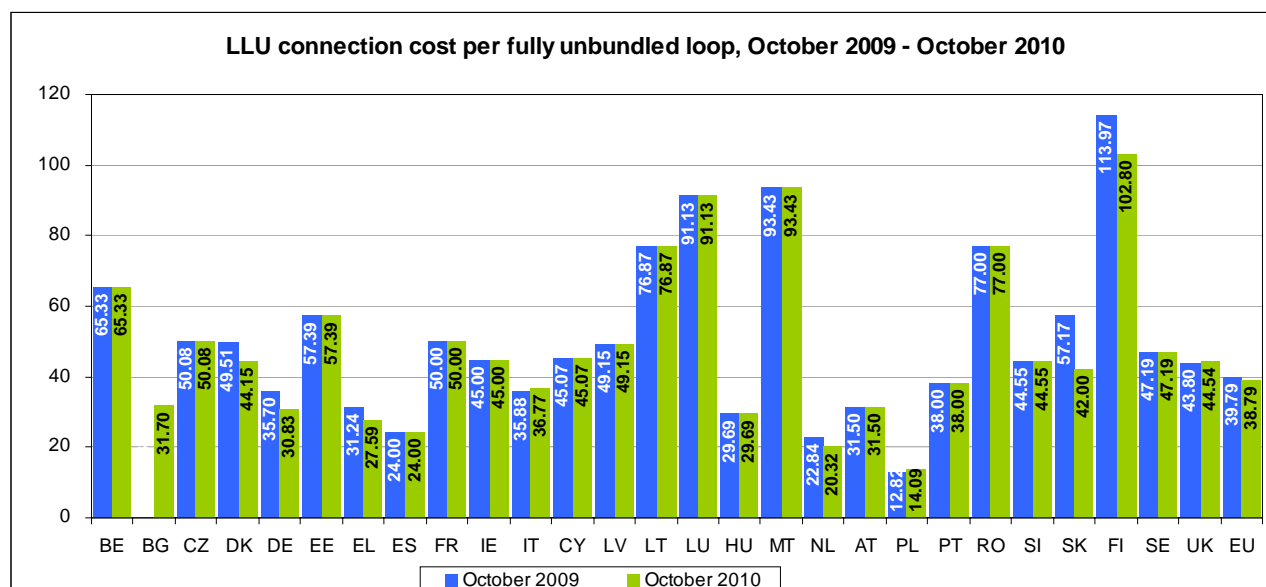


**Bulgaria:** 2009 data are confidential.

**Czech Republic:** 2010 prices were revised on 18/10/2010.

**United Kingdom:** The monthly rate for shared access was adjusted on 14/10/2010 to £1.25 following appeal of the charge controls.

Figure 76: LLU connection cost per fully unbundled loop, October 2009 – October 2010



**Bulgaria:** Prices are part of the incumbent Reference offer for LLU and are available on Vivacom web site (at 01.10.2010). Price includes a twisted copper pair installation fee of 35,00 BGN, an internal copper installation fee of 12,00 BGN per pair. Including 15,00 BGN disconnection fee. The cost of the test to assess the speed is not included. 2009 data are confidential.

**Czech Republic:** Connection fee includes possible reconfiguration of the local loop in order to enable OLOs to provide the final retail service in high quality. No disconnection fees are applicable. 2010 prices were revised on 18/10/2010.

**Denmark:** No disconnection fee

**Spain:** The cost of the synchronization test and the NTU (Network Termination Unit) installation are optional services and are not included in the price. Data are not comparable with figures provided in previous reports.

**Italy:** The reported prices do not include both the charge to assess speed that the disconnection cost. In particular, the cost of the test to assess the maximum speed ("qualification cost") is equal to 7,71 Euro. It is optional and is only due in the case the line was not previously qualified for the same xDSL service. Disconnection charge, equal to 32,72 euro from 1 May 2010, is not due in the case the customer migrates to a different OLO or to the incumbent. Colocation costs are excluded. All prices are applicable from May 2010 and the final decision was notified to the European Commission. Connection price is referred to an Active couple without number portability.

**Latvia:** Connection (7.78 LVL) and testing (27.08 LVL) included.

**Lithuania:** Figures include the cost of the test to access and disconnection cost.

**Malta:** Disconnection fees are included (Full unbundled €33.54).

**Ireland:** ULMP connection charge with successful completion (existing metallic path) – PU & PUI Order Type

**Austria:** no installation or connection fee during promotion periods.

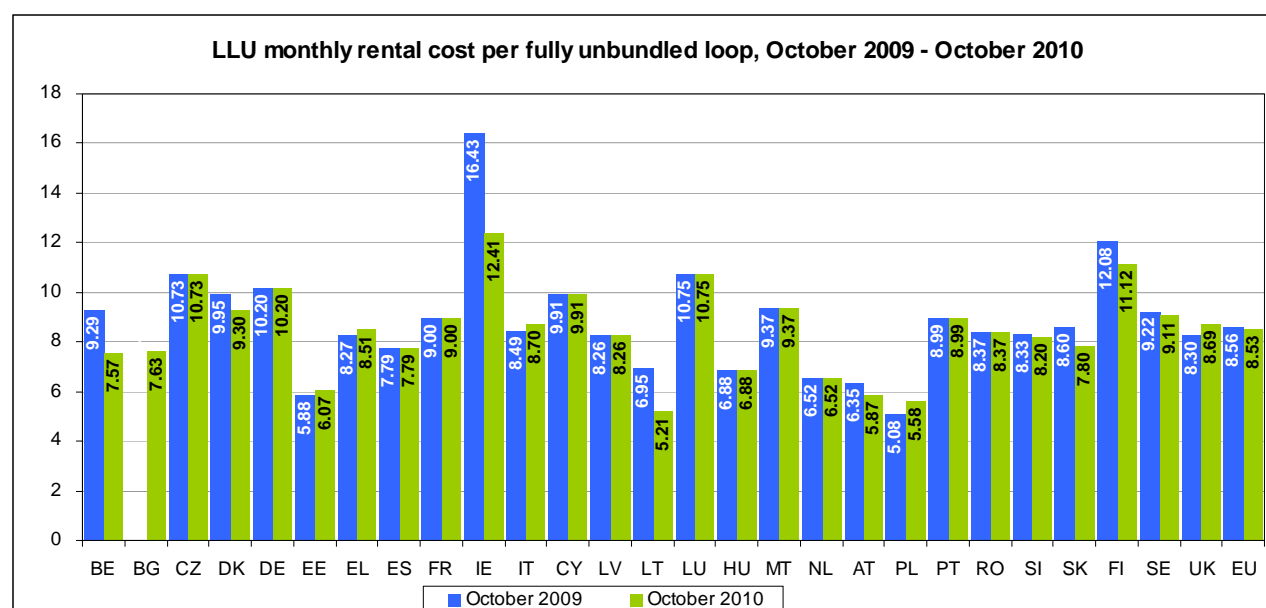
**Poland:** Collocation costs not included. The cost of the splitter is not included because it depends on the incumbent's estimated cost (the price is not included in the reference offer). Disconnection costs included, speed test not included. The fee applies to both active and inactive links. The specified fee is for an active link, the fee for inactive link is 143.83 PLN.

**Portugal:** The test to assess the speed is not requested.

**Romania:** Cost of the test to assess the speed and disconnection fees included.

**Finland:** Weighted average of 31 SMP operators providing ULL.

**Figure 77: LLU monthly rental cost per fully unbundled loop, October 2009 – October 2010**



**Belgium:** Decision of 3 August 2010 available at <http://www.bipt.be/ShowDoc.aspx?objectID=3307&lang=en>

**Bulgaria:** Prices are part of the incumbent Reference offer for LLU and are available on Vivacom web site (at 01.10.2010). Price includes a twisted copper pair rental fee of 14,50 BGN and an internal copper rental fee of 0,43 BGN per pair. 2009 data are confidential.

**Czech Republic:** 2010 prices were revised on 18/10/2010.

**Austria:** Regular ULL price lowered to the value of the former promotional price.

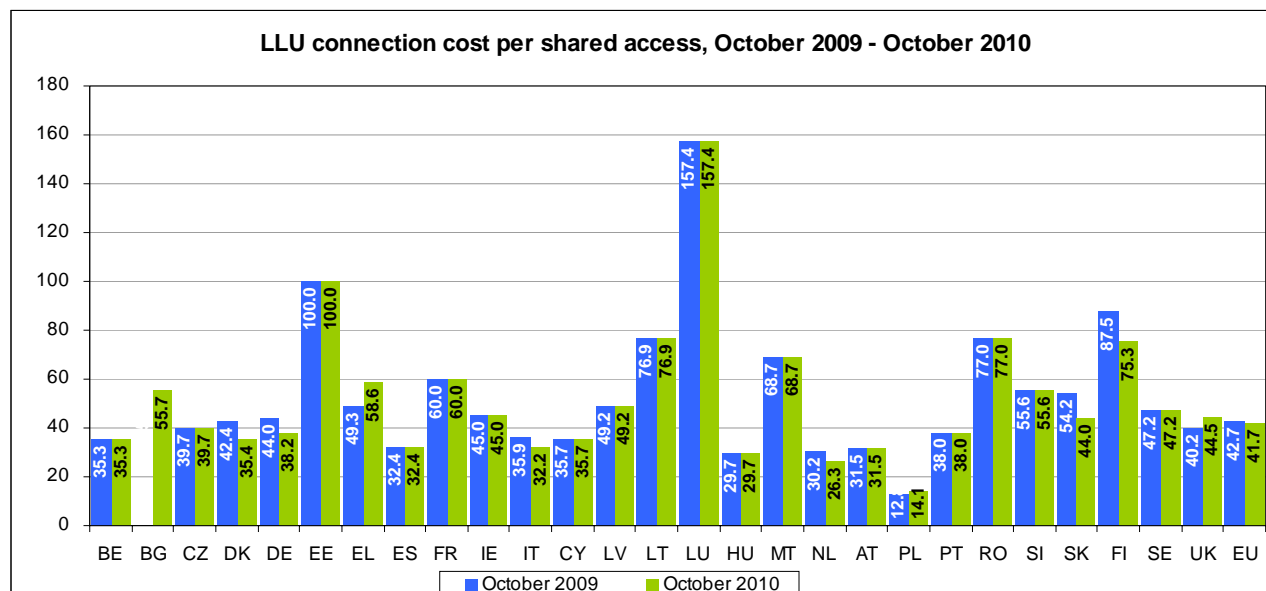
**Finland:** Weighted average of 31 SMP operators providing ULL.

**Poland:** The fee applies to both active and inactive links.

**Portugal:** The splitter is not provided by the incumbent.

**United Kingdom:** On 14/10/2010 the monthly rental for full unbundled local loop was changed to £7.42 following appeal of the charge controls

**Figure 78: LLU connection cost per shared access, October 2009 – October 2010**



**Bulgaria:** Includes a twisted copper pair installation fee of 68,00 BGN, an internal copper installation fee of 29,00 BGN per pair. Including 12,00 BGN disconnection fee. The cost of the test to assess the speed is not included. 2009 data are confidential..

**Czech Republic:** 2010 prices were revised on 18/10/2010.

**Denmark:** No disconnection fee

**Spain:** The cost of the synchronization test is not included. The price of the splitter provided by the incumbent included.

**Finland:** Weighted average of 31 SMP operators providing ULL.

**Ireland:** LS Connection Charge with successful completion (existing metallic path - access seeker provides exchange splitter)

**Italy:** The reported prices do not include both the charge to assess speed that the disconnection cost. In particular, the cost of the test to assess the maximum speed ("qualification cost") is equal to 7,71 Euro. It is optional and is only due in the case the line was not previously qualified for the same xDSL service. Disconnection charge, equal to 32,72 euro from 1 May 2010, is not due in the case the customer migrates to a different OLO or to the incumbent. Colocation costs are excluded. All prices are applicable from May 2010 and the final decision was notified to the European Commission. The splitter cost is included (price on public consultation)

**Lithuania:** Figures include the cost of the test to access and disconnection cost. Frequency splitter's price is included.

**Latvia:** Connection (7.78 LVL) and testing (27.08 LVL) included. Connection of splitter is 640 LVL.

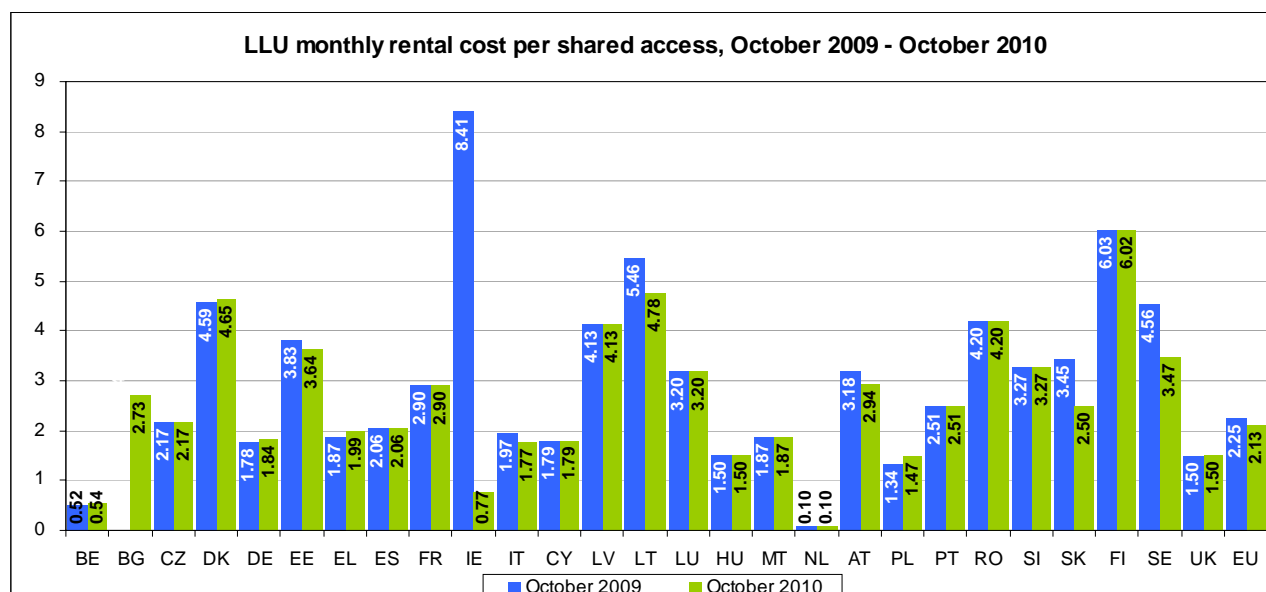
**Malta:** Disconnection fees included: Shared Access €26.76

**Poland:** Collocation costs not included. The cost of the splitter is not included because it depends on the incumbent's estimated cost (the price is not included in the reference offer). Disconnection costs included, speed test not included. The fee applies to both active and inactive links. The specified fee is for an active link, the fee for inactive link is 143.83 PLN.

**Portugal:** The test to assess the speed is not requested.

**Romania:** Splitter price included

**Figure 79: LLU monthly rental cost per shared access, October 2009 – October 2010**



**Belgium:** €0,87 (incl. splitter maintenance fee)

**Bulgaria:** Includes a twisted copper pair rental fee of 4,90 BGN and an internal copper rental fee of 0,43 BGN per pair. 2009 data are confidential.

**Czech Republic:** Price of the splitter is included in the monthly rental price. 2010 prices were revised on 18/10/2010.

**Austria:** 50% of full ULL monthly rental.

**Finland:** Weighted average of 31 SMP operators providing ULL.

**France:** 1,8 € for line and 1,1 € for splitter.

**Latvia:** Cost of splitter is 13.87 LVL.

**Malta:** Splitter to be procured by OAOs.

**Poland:** The specified fee is for an active link, the fee for inactive fee link is 22 PLN

**Portugal:** The splitter is not provided by the incumbent.

**Romania:** Maximum average tariffs

**United Kingdom:** The monthly rate for shared access was adjusted on 14/10/2010 to £1.25 following appeal of the charge controls.

## 5. CONVERGED SERVICES - BUNDLED OFFERS

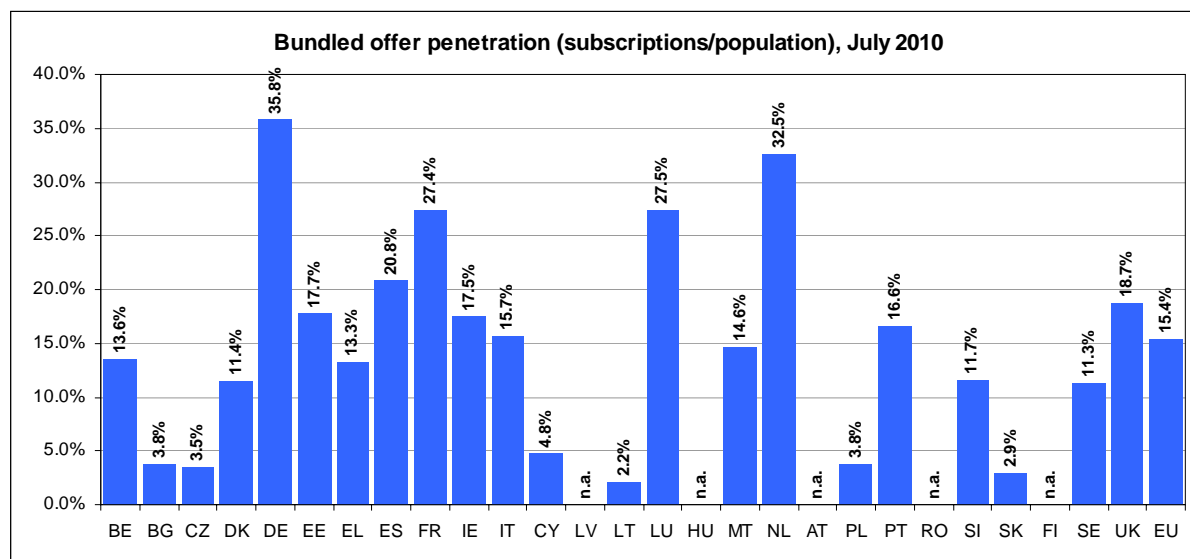
Fixed broadband offers are increasingly bundled to other services (e.g.: fixed telephony or television). Although bundling is hard to measure (sometimes services in one offer are invoiced separately, sometimes not), it is becoming a key element of the fixed electronic communications markets.

'Bundled offer' means a commercial offer of a single operator which includes two or more services such as fixed and mobile public telephony services, access to TV programmes and broadband internet access, offered for a single price and as part of one bill. NRAS however may use different definitions, so the figures shown in this report are not always comparable.

Data in this section is purely indicative and can be completed with the Eurostat E-Communications Household survey. The differences with this Progress Report results can be attributed to a different definition (due to the billing of the services) and the lack of data for some countries. Although not every Member State is collecting data to measure the extent of this market development, the situation is likely to improve in the following Reports.

The charts show the penetration of bundled services (measured as the % of the population subscribing to such offers) and the number of operators providing these offerings.

**Figure 80: Bundled offer penetration, July 2010**



**Belgium:** Data as at 1 October 2010.

**Bulgaria:** Data of subscribers as of December, 31, 2009. Bundles include VPN and Data VPN, Voice VPN, data VPN and Internet access, Voice over WiMax network and Internet access, Fixed telephony, Voice over WiMax network and Internet access).

**Czech Republic:** Bundled offers include jointly offered services which are provided for a sole discount price. Bundled offers do not include services that are offered separately (e.g. incumbent services).

**Denmark:** Triple play comprises internet, telephony (either mobile or fixed) and TV.

**France:** Subtotals for double and triple play are estimates.

**Germany:** Double Play: The figure for Mobile voice telephony and BB are based on NRA's estimates. Triple Play: Cable operators are not included. Access to TV programs, broadband internet access and fixed voice telephony is marketed as a single offer by cable operators but not for a single price. Therefore, bundled offers provided by cable operators do not fall under the definition used by the European Commission in this report.



**Latvia:** Not available.

**Netherlands:** Data as of 31-12-09. Cable TV is always offered separately. OPTA counts dual play + cable TV as triple play. Figures do not necessarily refer to a single offer with a single price.

**Hungary:** Not available

**Austria:** Data not available

**Portugal:** All figures refer to 31-12-2009. Double play and triple play subscriptions are billed, marketed and sold together (and perceived by the consumers as multiple play offers according to the market research by the NRA) but might not have a single price (every part of the bundle has one individual price).

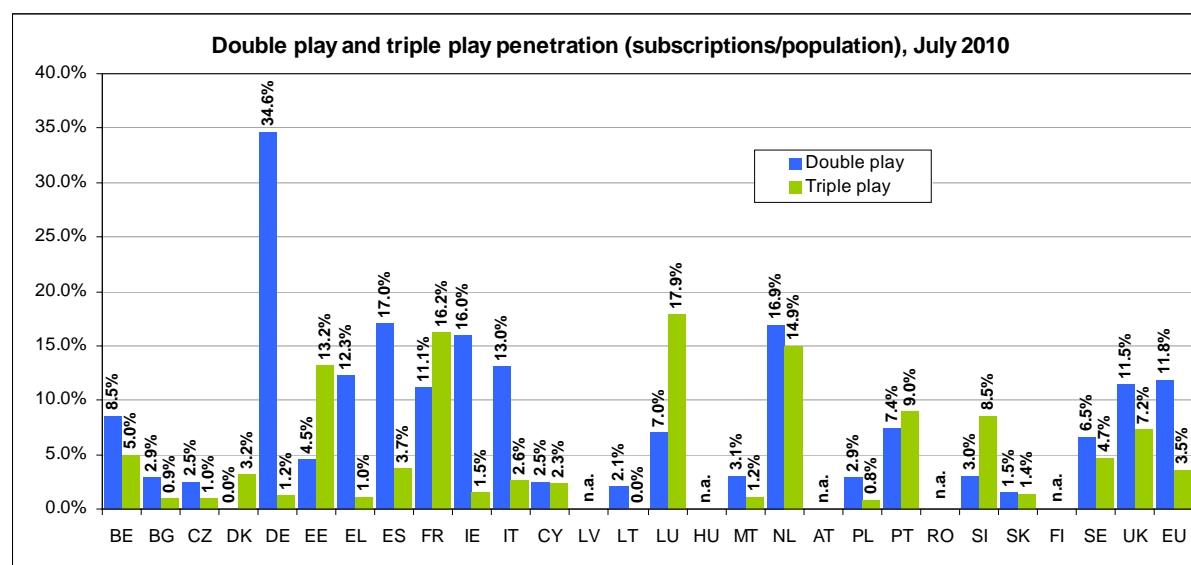
**Romania:** Not available

**Finland:** Data not available.

**Sweden:** All figures as of 31 December 2009.

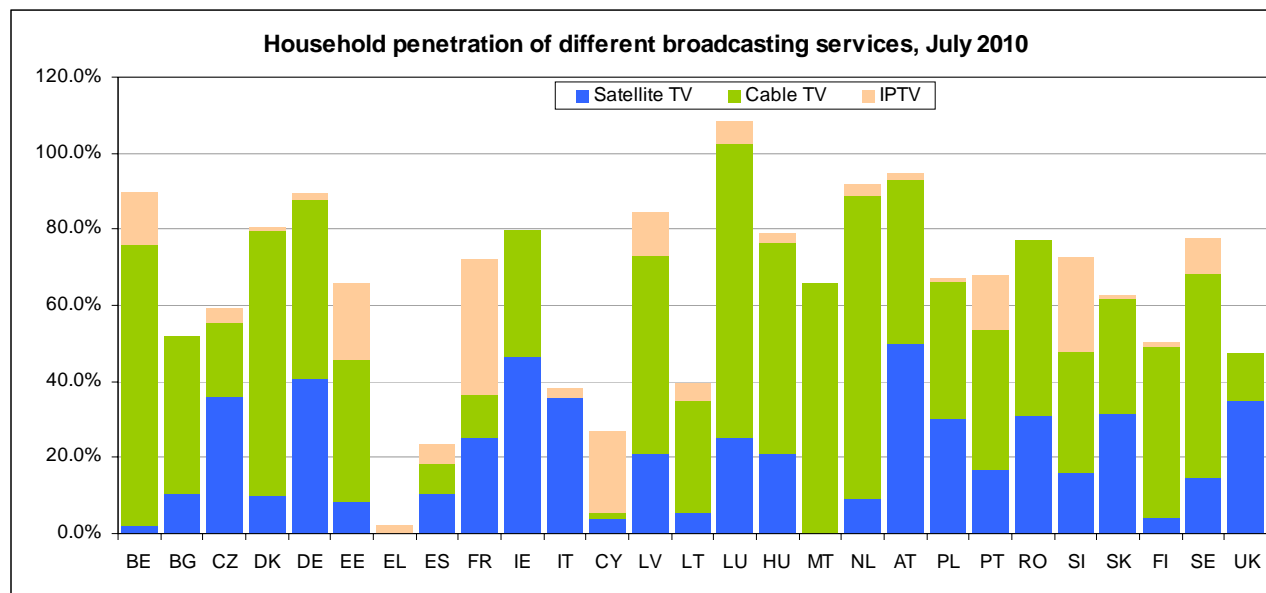
**United Kingdom:** A small number of households claim to have more than one bundle, so sub-totals (and any subsequent adding together) may contain a small amount of double counting.

**Figure 81: Penetration of double and triple play, July 2010**

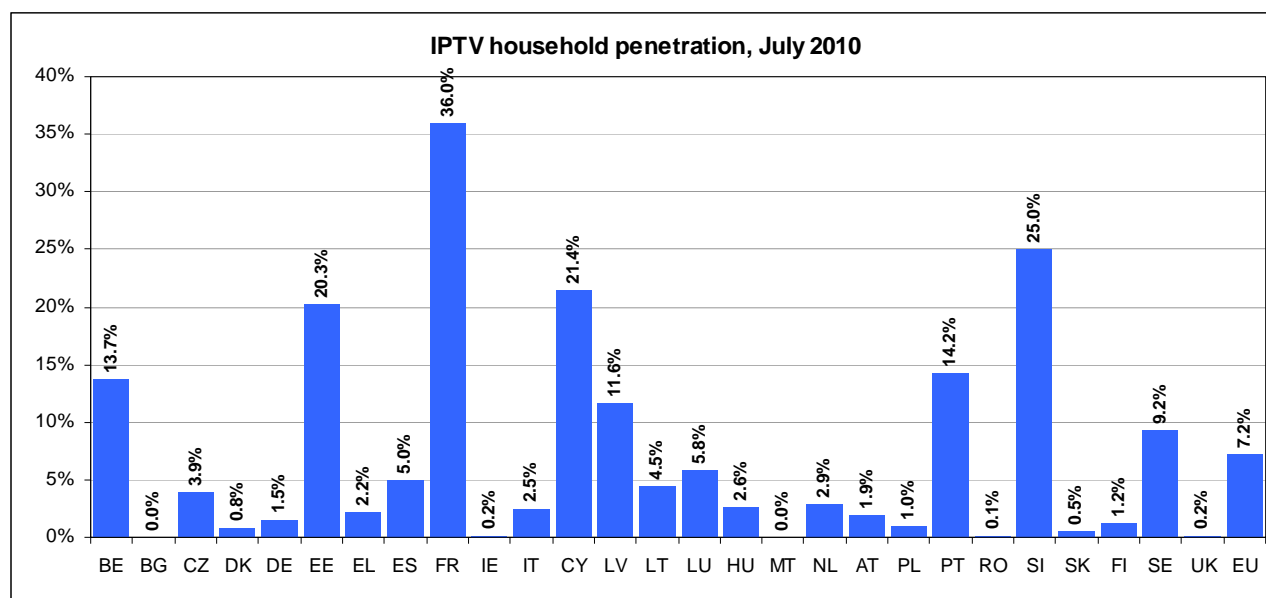


## 6. BROADCASTING

**Figure 82: Household penetration of different broadcasting services, July 2010**



**Figure 83: IPTV household penetration, July 2010**



**Belgium:** Data are as of 1.1.2010, Source satellite TV: journal De Tijd 30.12.2009

**Bulgaria:** Data are as of December, 31, 2009

**Czech Republic:** Only digital satellite TV is included.

**Germany:** Data are as of 01/01/2010. DVB-T (2,0 Mio.) is excluded. Source: SES ASTRA

**Denmark:** The figures are based on an annual survey and should therefore be considered estimates.

**Estonia:** Number of TV households using satellite TV is estimation.

**Italy:** As at march 2010. Source of data for satellite is Digita n.18/2010 on Makno data. IPTV subscriptions include Fastweb, Telecom Italia and Wind.

**Luxembourg:** Figures are estimates.

**Latvia:** Figures are estimates by the Latvian Association of Electronic Communication. Figures represent HS using the particular technology as main technology.

**Netherlands:** the figure for IPTV includes only IPTV delivered over DSL.

**Romania:** The value for Satellite TV represents only the DTH subscriptions. July 2010 figures are provisional

**Slovenia:** Satellite TV includes also households without subscriptions. Number for paying satellite TV households is 25.351.