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COVER NOTE

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EUROPEAN
COMMISSION

Brussels, 10.5.2017
SWD(2017) 160 final

PART 2/62

COMMISSION STAFF WORKING DOCUMENT

Europe's Digital Progress Report 2017

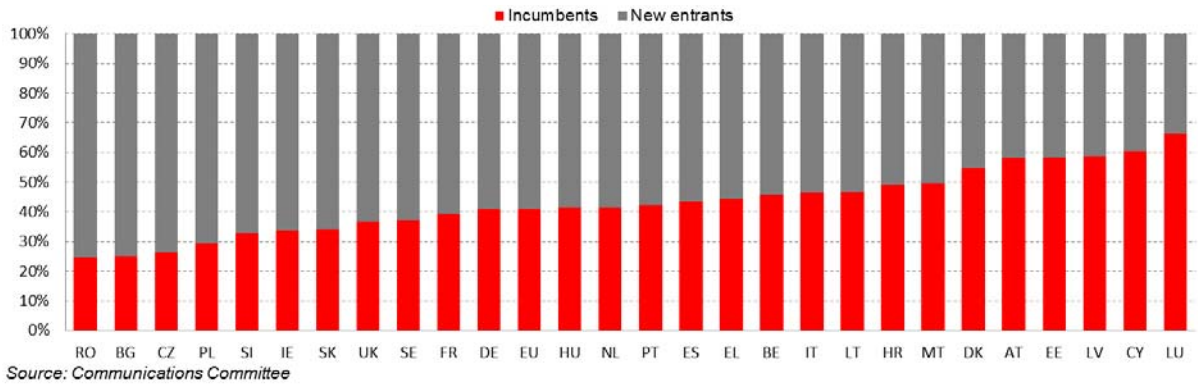
1. Connectivity: Broadband market developments in the EU (continued)

Market shares of incumbents are shown to have large differences across Europe. In 7 out of the 28 Member States, at least half of the subscriptions are provided by incumbent operators

Market shares are calculated at national level for incumbents and new entrants. However, broadband markets are geographically fragmented suggesting that a large number of homes are served by only one provider (most likely by the incumbent operator in this case).

Incumbents have the highest subscription market share in Luxembourg and Cyprus, where the small market size may favour concentration. In contrast, incumbents are the weakest in Europe in Romania, Bulgaria, the Czech Republic and Poland where most subscribers use technologies other than xDSL.

Figure 1.42. Fixed broadband subscriptions — operator market shares, July 2016



Source: Communications Committee

In the DSL market, unbundling reduced the dominance of incumbents, but in VDSL incumbents hold 66 % of subscriptions. Nevertheless, NGA is provided mainly by new entrants because of the high share of cable.

New entrant operators can compete with incumbents by using either the incumbent's network or their own network to offer internet access. In Greece, competition is entirely based on regulated access to the incumbent's access network, while in Italy and France over 80 % of subscriptions are DSL. In Eastern European Member States, competition is rather based on competing infrastructures. This applies also to Belgium, Malta, Portugal and the Netherlands.

Figure 1.43. Market share of incumbents by technology (% of subscriptions) at EU level, July 2016

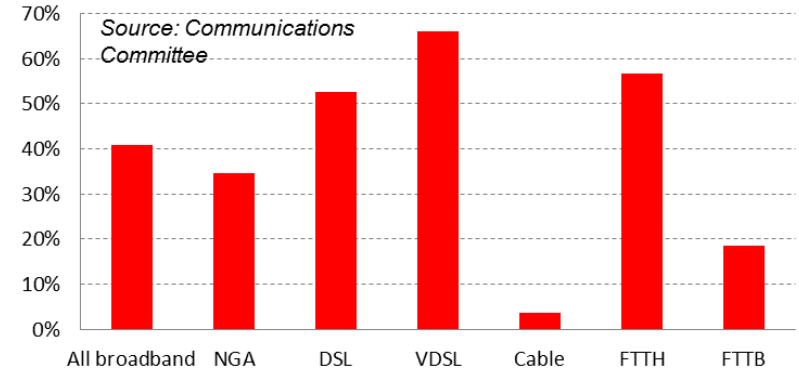
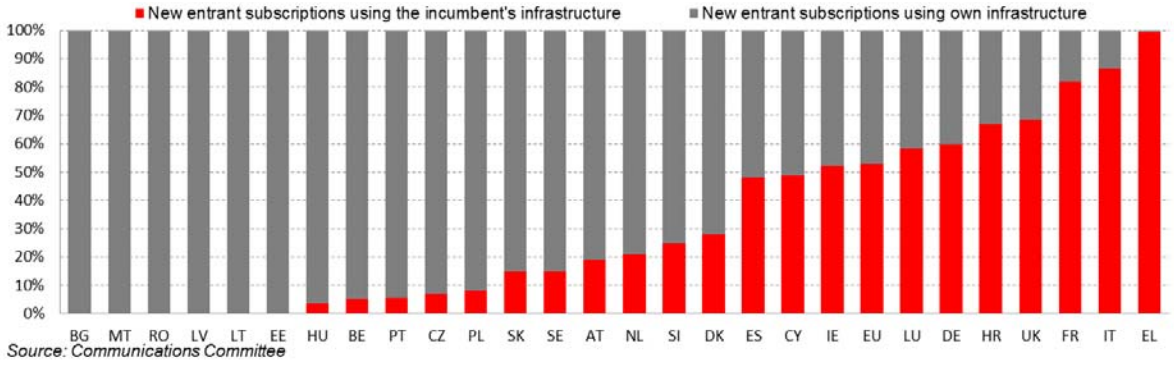


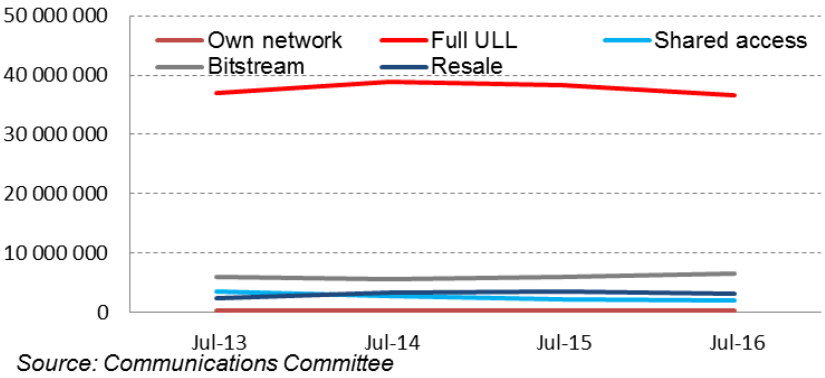
Figure 1.44. New entrants' subscriptions — using own infrastructure or the incumbent's network (% of total), July 2016



53 % of DSL subscriptions belong to incumbents. New entrants mainly use Local Loop Unbundling to sell DSL. In six Member States, the new entrants' presence in the DSL market is marginal.

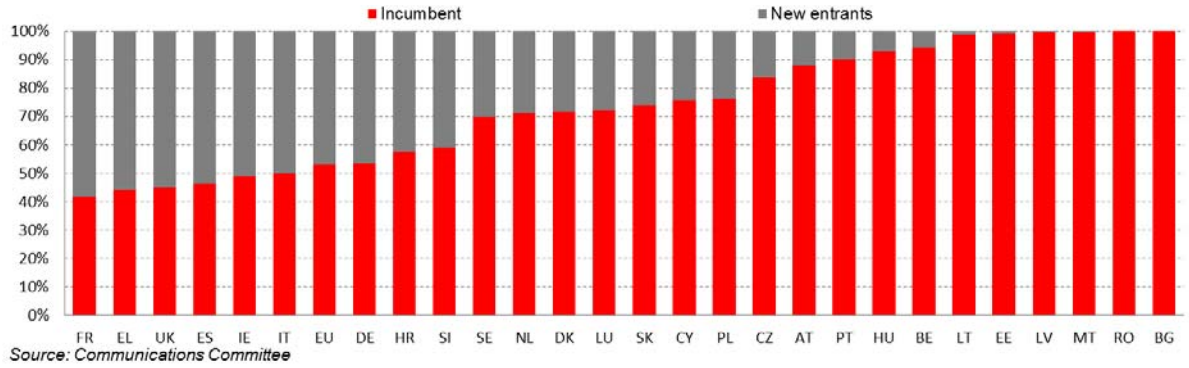
In Bulgaria, Romania, Malta, Latvia, Estonia and Lithuania, there is literally no competition in the DSL market. These Member States, however, have strong platform competition. Alternatively, in France, Greece, the UK, Spain, Ireland and Italy new entrants account for the majority of xDSL subscriptions. In all these Member States, competition is tight due to the possibility of entry via DSL subscriptions provided through Local Loop Unbundling, although in Italy bitstream is also important.

Figure 1.45. Number of DSL subscriptions by new entrants at EU level, given different types of access (VDSL excluded), 2013-2016



Source: Communications Committee

Figure 1.46. DSL subscriptions — operator market shares (VDSL included), July 2016



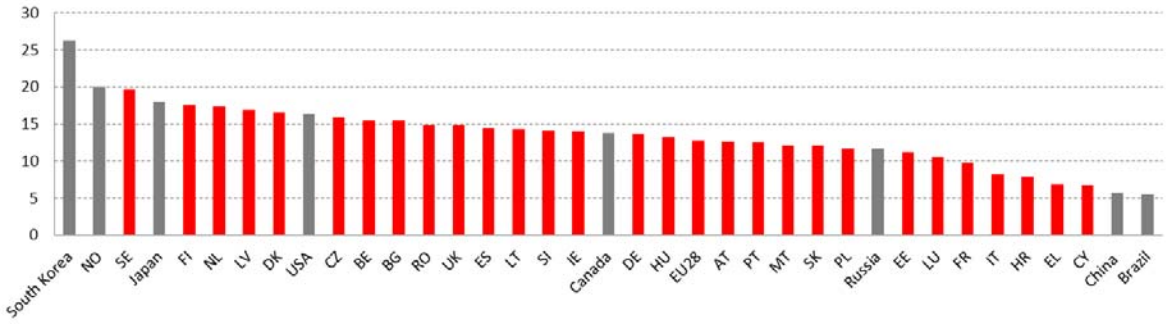
Source: Communications Committee

Average connection speed ranges from 7 Mbps to 20 Mbps in Europe. Sweden, Finland, the Netherlands and Latvia are among the top countries in Europe and worldwide.

South-Korea is the world leader in average internet connection speed at 26.3 Mbps, followed by Norway and Sweden at 20 Mbps. The EU has an average speed of 13 Mbps, which is well below the preceding leading countries, Japan (18Mbps) and also USA (16Mbps). While five Member States have higher speeds than the US, the slower speeds in the EU can be explained by a lower usage of FTTH technology and less coverage of cable.

The worst performing countries include Cyprus, Greece, Croatia, Italy and France with speeds of less than 10 Mbps. With the exception of Cyprus, all these countries have a relatively low coverage of fast broadband technologies (NGA).

Figure 1.49. Average connection speed (Mbps) by country, 2016



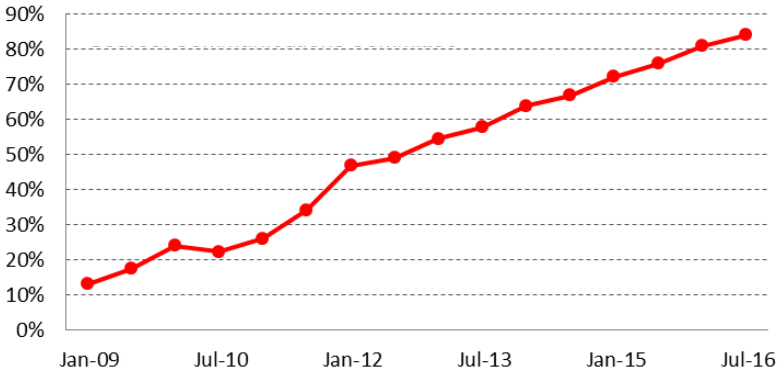
Source: Akamai, Q3 - 2016

There are 84 active mobile broadband SIM cards per 100 people in the EU, up from 34 four years ago. The growth was linear over the last four years with over 40 million new subscriptions added every year.

Mobile broadband represents a fast growing segment of the broadband market. More than 60 % of all active mobile SIM cards use mobile broadband.

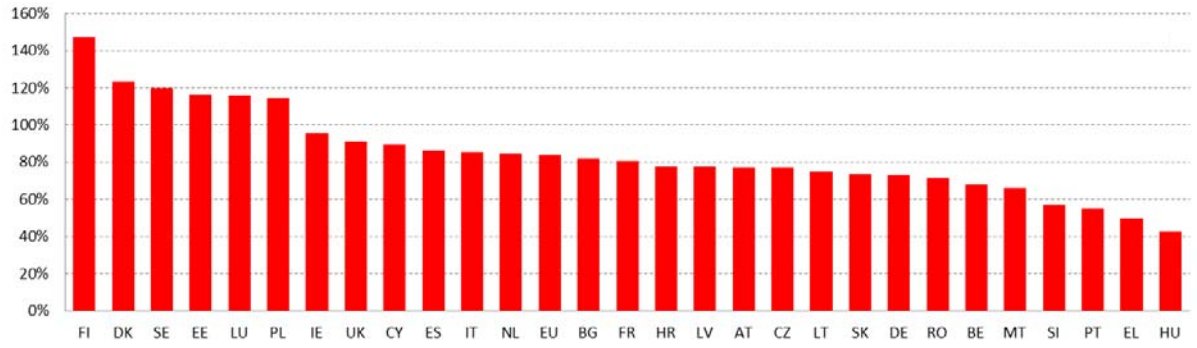
In the Nordic countries and Estonia, Luxembourg and Poland, there are already more than 100 subscriptions per 100 people, while in Hungary and Greece the take-up rate is still below 50 %. Most of the mobile broadband subscriptions are used on smartphones rather than on tablets or notebooks.

Figure 1.50. Mobile broadband penetration at EU level, January 2009 to July 2016



Source: Communications Committee

Figure 1.51. Mobile broadband penetration by country, July 2016



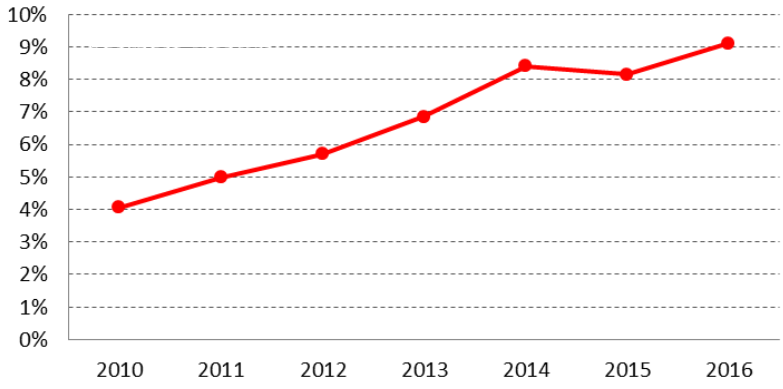
Source: Communications Committee

Mobile broadband is still mainly complementary to fixed broadband. In 2016, 9.1 % of EU homes accessed the internet only through mobile technologies. Finland and Italy were leaders in mobile access to internet with 30% and 22 % of homes using it in 2016.

Europeans access the internet primarily with fixed technologies at home. However, there are a growing number of homes with only mobile internet use. The percentage of homes with purely mobile broadband access grew from 4.1 % in 2010 to 9.1 % in 2016. This indicates that mobile broadband still mainly complements rather than substitutes fixed broadband.

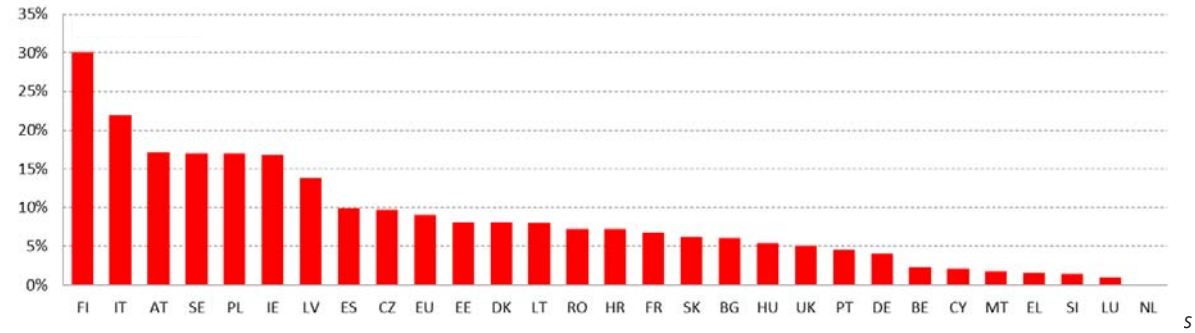
The Netherlands was the Member State with the lowest mobile only access at less than 0.1 %. By contrast, Finland and Italy were leaders in mobile access to internet with 30 % and 22 % of homes in 2016.

Figure 1.52. Households using only mobile broadband at EU level, (% of households), 2010-2016



Source: Eurostat (ICT Households and Individual survey)

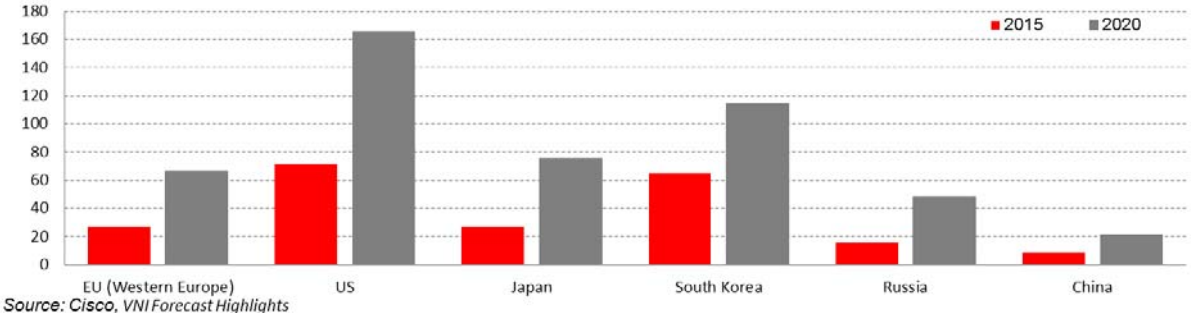
Figure 1.53. Households using only mobile broadband at home, (% of households), 2016



ource: Eurostat (ICT Households and Individual survey)

Internet traffic per capita in western Europe[1] is currently 27 GB per month. By 2020, this figure is estimated to go up to 66.5 GB, while in the US it will be 165 GB.

Figure 1.54. IP traffic per capita (Gigabytes per month and region), 2015 - 2020



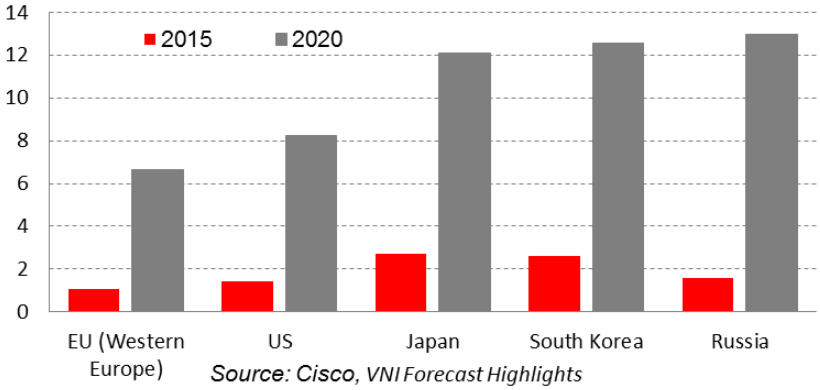
Source: Cisco, VNI Forecast Highlights

Internet traffic per capita in Western Europe is well below those of the US and South Korea. Although, with rapid growth in recent years, it is projected to reach the current levels of US and South Korea by 2020.

Mobile data traffic is a fraction of total IP traffic, and this will remain so despite the large increase forecast by Cisco. Similarly to the overall traffic, mobile IP traffic per capita in the EU is substantially below the US and South Korea. Nevertheless, Western European traffic is estimated to be six times higher in 2020 than in 2015.

[1] France, Germany, Italy, Spain, Sweden, United Kingdom, Denmark, Netherlands, Belgium, Ireland, Norway and Iceland.

Figure 1.55. Mobile IP traffic per capita (Gigabytes per month and region), 2015-2020

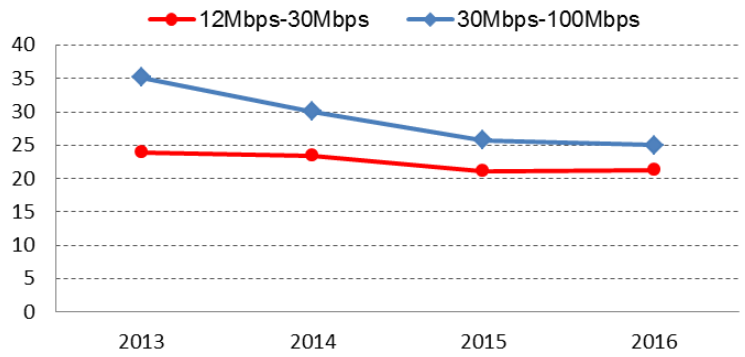


Prices[2] of fast broadband access tend to decrease over time but vary widely across Member States.

Broadband access prices (minimum prices, calculated on Purchasing Power Parity) vary between EUR 11 and EUR 43 for a standalone offer with a minimum download speed of 12 Mbps. The minimum prices were the lowest in Sweden (EUR 11), Bulgaria (EUR 12) and Hungary (EUR 12) and the highest in Spain (EUR 43), Slovenia (EUR 34) and Cyprus (EUR 33).

In the range of minimum download speed of 30 Mbps, European average stands at EUR 25 with a slight decrease from last year.

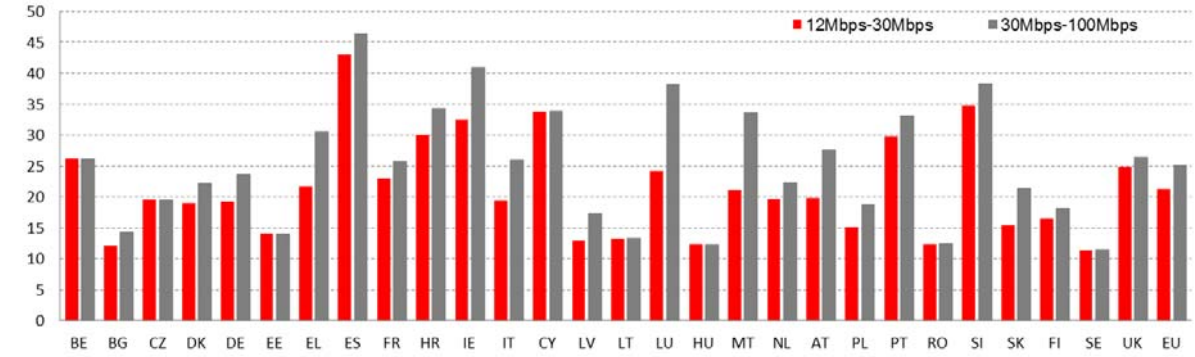
Figure 1.56. Broadband retail prices (EUR PPP) — standalone offers at EU level, 2013-2016



Source: Empirica and Van Dijk

[2] Based on least expensive prices available and expressed in euros adjusted for purchasing power parity, VAT included.

Figure 1.57. Fixed broadband retail prices (EUR PPP) — standalone offers at EU level, Autumn 2016

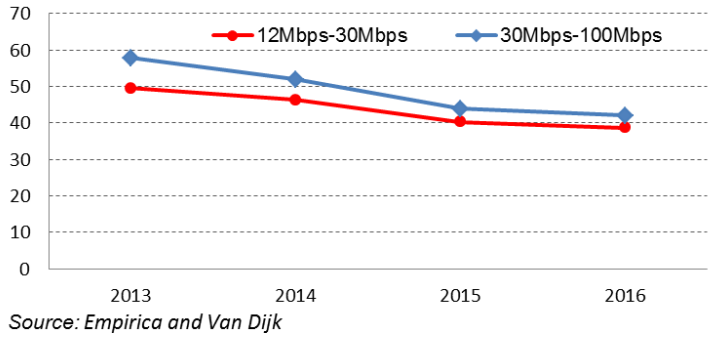


Source: Empirica

Prices[3] of triple play bundles including fast broadband access, fixed telephony and television went down by 27 % since 2013.

The minimum prices for triple play bundles including broadband access (with a download speed between 30 and 100 Mbps), fixed telephony and television vary between EUR 18 and EUR 75 in the EU. The minimum price was the lowest in Bulgaria (EUR 18), Lithuania (EUR 21) and Sweden (EUR 22) and the highest in Ireland (EUR 75), Belgium (EUR 60), Portugal (EUR 59) and Croatia (EUR 56). Prices decreased over time, with the EU average going down from EUR 58 in 2013 to EUR 42 in October 2016.

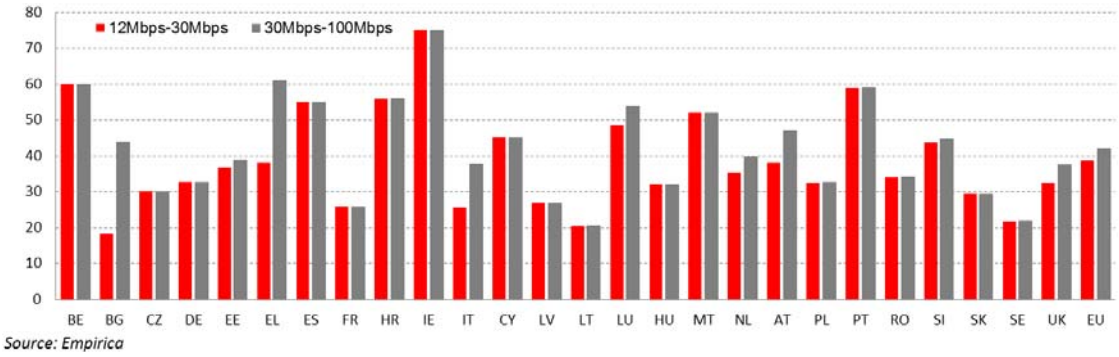
Figure 1.58. Broadband retail prices (EUR PPP) — bundles including broadband, fixed telephony and television at EU level, 2013-2016



Source: Empirica and Van Dijk

[3] Based on least expensive prices available and expressed in euros adjusted for purchasing power parity, VAT included.

Figure 1.59. Broadband retail prices (EUR PPP)[4] — bundles including broadband, fixed telephony and television, Autumn 2016



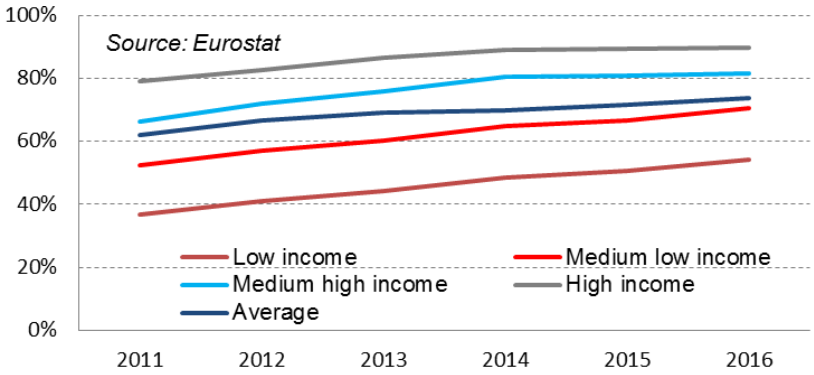
Broadband take-up tends to be lower in Member States where the cost of broadband access accounts for a higher share of income, but this correlation is not strong. The lowest income quartile of the EU population has a significantly lower take-up rate.

Considering overall take-up, European average is 74 % of homes with Luxembourg, the Netherlands at the highest positions and Italy, Bulgaria and Poland lagging behind.

Income plays an important role in broadband take-up. The lowest income quartile has only 54 % take-up rate of fixed broadband as opposed to 90 % in the highest income quartile.

The gap between the lowest income quartile and the national average is particularly large in Bulgaria, Romania, Hungary, Slovenia, Lithuania, Czech Republic, Croatia, Spain and Slovakia.

Figure 1.60. Fixed broadband household penetration by income quartiles at EU level, 2011-2016



[4] No data available for Finland and Denmark.

Figure 1.61. Household fixed broadband penetration and share of broadband access cost (standalone 12-30Mbps download) in disposable income, 2016

Source: Commission services based on Eurostat and Empirica

Member States are catching up in transposing the Cost Reduction Directive (Directive 2014/61/EU).

Since the major source of costs in network deployment is civil engineering costs (accounting for up to 80 % of the total costs), Directive 2014/61/EU includes measures to reduce the cost of deploying high-speed electronic communication networks. The Directive includes measures:

• facilitating access to physical infrastructures of all network operators (i.e. telecom operators, as well as energy, or other utilities);

• improving coordination of civil engineering works;

• providing transparency of permit granting procedures; and

• equipping and accessing buildings with in house physical infrastructure (e.g. mini-ducts) capable of hosting high-speed networks.

The deadline for Member States to transpose this Directive expired on 1 January 2016.

The transposed measures had to apply at the latest as of 1 July 2016 except for the obligation to equip buildings with in-building physical infrastructure and with an access point which applies to new buildings or major renovation works where planning permission has been submitted after 31 December 2016.

In March 2016, the Commission opened infringement proceedings against 27 Member States (all Member States except Italy) who had not yet completed the transposition of the Directive into national law. As a second step, the Commission sent reasoned opinions to 19 Member States in September 2016, urging them to implement measures of cost reduction in deploying high-speed electronic communications networks. Infringement proceedings against seven Member States (Denmark, Ireland, Malta, Poland, Romania, Spain and Sweden) have in the meantime been closed following complete transposition of the Directive. The Commission is

currently assessing further responses by Member States to reasoned opinions. As a next step, the Commission is analysing the conformity of the transposition for the countries that have notified complete transposition of the Directive. Information about national measures transposing the Directive is available here and ongoing infringement proceedings here.

Member States are catching up in transposing the Broadband Cost Reduction Directive (Directive 2014/61/EU).

As of 31 March 2017, 16 Member States have notified to the Commission complete transposition of the Directive (Austria, Cyprus, Denmark, Estonia, Germany, Greece, Hungary, Ireland, Italy, Lithuania, Malta, Poland, Romania, Spain, Sweden, UK). Eleven Member States have notified partial transposition of the Directive (Belgium, Bulgaria, Croatia, Finland, France, Latvia, Luxembourg, the Netherlands, Portugal, Slovakia, Slovenia) while one Member State has not notified any transposition measure so far (Czech Republic). Delays in transposing and applying the measures provided in the Directive may limit opportunities to reduce deployment costs and exploit synergies, which is particularly important in those areas where NGA coverage is lagging behind or upgrades of networks are needed.

Figure 1.62. Transposition of the Broadband Cost Reduction Directive

Member State		Status of notification by MS
BE		○ ● ○
BG		○ ● ○
CZ		● ○ ○
DK		○ ○ ●
DE		○ ○ ●
EE		○ ○ ●
HR		○ ● ○
IE		○ ○ ●
EL		○ ○ ●
ES		○ ○ ●
FR		○ ● ○
IT		○ ○ ●
CY		○ ○ ●
LV		○ ● ○
LT		○ ○ ●
LU		○ ● ○
HU		○ ○ ●
MT		○ ○ ●
NL		○ ● ○
AT		○ ○ ●
PL		○ ○ ●
PT		○ ● ○
RO		○ ○ ●
SI		○ ● ○
SK		○ ● ○
FI		○ ● ○
SE		○ ○ ●
UK		○ ○ ●
		1 11 16

Following the adoption of the 2014 Recommendation on relevant markets, a reduction of *ex ante* regulation is progressively observed as competition in the telecommunications markets across the EU develops

Under EU telecommunications legislation, appropriate regulatory measures on operators should be imposed only following a market analysis showing that a given market is not effectively competitive. This market analysis needs to be periodically carried out by the competent national regulatory authority.

The figure 1.63. shows an overview of markets which are still subject to *ex ante* regulation (red colour), have already been fully or partially deregulated (green/yellow colour), as well as the rounds of market analysis carried out since the adoption of the Regulatory Framework back in

2002. The 2014 Recommendation on relevant markets excluded from regulation two fixed telecoms markets and redefined two other markets in order to reflect market and technology developments. For markets not included in the Recommendation, *ex ante* regulation can be imposed only if a market analysis shows that the market does not tend towards effective competition.

Since the adoption of the 2014 Recommendation, the Commission observes a progressive reduction of *ex ante* regulation as the competition in the telecommunications markets across the EU developes. This trend confirms the Commission's assumption that those markets tend towards effective competition in the Member States. Most markets outside the scope of the Recommendation which are still regulated have only been reviewed once or twice since the entry into force of the Regulatory Framework and market regulation may no longer reflect the effective competitive dynamics observed since the last round. Therefore ensuring a timely review of relevant markets is key to aligning market regulation with technological and market developments.

Figure 1.63. Article 7 cases

Article 7 cases as at 30/03/2017

Effective competition - no ex ante regulation
No effective competition - ex ante regulation
Partial competition - partial ex ante regulation

1 1st round-competition/regulation
2 2nd round-competition/regulation
3 3rd round-competition/regulation
4 4th round-competition/regulation

	2014 RECOMMENDATION					2007 REC.		2003 RECOMMENDATION								
	Call term. on fixed network	Voice call term. on mobile networks	Wholesale local access	Wholesale central access	Wholesale high-quality access	Access to PSTN for res & non-res.	Call orig. on fixed network	Local/nat. Call for res.	Internat. call for res.	Local/nat. call for non-res.	Internat. call for non-res.	Retail LL	Transit on fixed network	Trunk segments LL	Access & call orig. on mobile network	Broadcast Transmis.
	Market 1	Market 2	Market 3a	Market 3b	Market 4	ex-Mkt 1	ex-Mkt 2	ex-Mkt 3	ex-Mkt 4	ex-Mkt 5	ex-Mkt 6	ex-Mkt 7	ex-Mkt 10	ex-Mkt 14	ex-Mkt 15	ex-Mkt 18
Austria	3	4	3	3	4	3	3	3	2	4	3	4	1	2	1	3
Belgium	2	2	2	2	1	2	1	3	1	3	1	1	2	1	1	w
Bulgaria	5	3	2	2	3	2	3	2	2	2	2	1	1	1		
Croatia	1	1	1	1	1	1	1	1		1		1		1		
Cyprus	2	3	4	4	2	3	3	3	2	3	2	2	3	2	3	3
Czech Republic	4	4	3	3	3	4	4	2	2	2	1	2	1	1	1	2
Denmark	3	4	3	3	4	3	3	2	2	1	1	2	1	1	1	1
Estonia	3	4	3	3	3	3	3	1	1	1	1	1	1	2	1	3
Finland	2	1	3	3	1	2	3	2	1	2	1	2	2	1	V	3
France	4	4	4	4	2	4	4	1	1	1	1	2	1	2	W	4
Germany	4	5	3	3	2	3	3	2	1	2	1	2	2	1	1	3
Greece	3	3	4	4	2	3	2	3	1	3	1	2	3	2	1	1
Hungary	3	5	3	3	3	6	3	3	3	3	3	3	2	2	2	2
Ireland	3	1	2	2	2	3	2	2	2	2	2	2	2	2	1	2
Italy	3	4	3	3	2	3	2	2	2	2	2	2	3	2	2	2
Latvia	5	4	3	3	3	1	3	4	3	4	3	3	2	1	1	1
Lithuania	4	3	3	3	2	1	2	3	2	3	2	1	2	2	1	5
Luxemburg	3	3	2	2	2	3	3	2	2	2	2	2	1	1	1	
Malta	3	3	2	2	3	3	3	2	2	2	2	3	2	2	2	1
Netherlands	4	4	5	3	3	4	3	2	2	2	2	2	2	2	1	2
Poland	2	3	2	3	1	2	2	2	2	2	2	2	1	1	2	2
Portugal	2	2	3	3	3	2	2	2	2	2	2	1	1	3		2
Romania	2	2	2	1	1	2	2	1	1	1	1		2			1
Slovakia	4	4	3	3	3	4	4	2	2	2	2	2	2	1	1	2
Slovenia	2	5	3	3	2	3	3	2	1	1	1	2	3	1	3	3
Spain	3	3	3	3	3	4	3	2	2	2	2	2	2	3	2	3
Sweden	4	4	3	3	3	3	3	1	1	1	1	2	2	1	1	4
United Kingdom	3	4	2	4	4	4	3	2	2	2	2	4	2	4	1	2

More EU harmonised spectrum underpins future spectrum needs within the EU, while assignment in national markets differs.

Following the adoption in April 2016 of Commission Implementing Decision (EU) 2016/687, harmonising the 700 MHz band, the total amount of spectrum harmonised at EU level for wireless broadband use reached 1090 MHz during the reporting year. The authorisation process for this band was already completed by three Member States (Finland, France and Germany) and the other Member States are expected to authorise the band by 2020, unless there are are justified reasons[5] for a delay until mid 2022 at the latest.

Moreover, with a view to reaching the target of 1200 MHz for wireless broadband set by the radio spectrum policy programme (RSPP), the Commission is working on the possible extension of the 1.5 GHz band to provide additional download capacity for 5G services representing an extension of 51 MHz.

The 800 MHz band (the 'digital dividend') is currently assigned (in two cases not entirely) in 26 Member States, 11 of which had been granted a derogation from the original deadline under Article 6(4) of the RSPP. Two Member States have not yet assigned and/or made available the 800 MHz band; while Malta asked for an extension of the derogation it had been granted, Bulgaria benefits from the exception due to incumbent military use under Article 1(3) RSPP.

When excluding the recently harmonised 700 MHz bands, a 4 percentage points (from 69 to 73 %) increase in the EU-harmonised spectrum assigned on average across Member States for wireless broadband use can be reported since last year. The swift assignment of the 700 MHz band in 3 Member States was a positive development which paves the way for other Member States to take the necessary measures to meet the 2020 deadline.

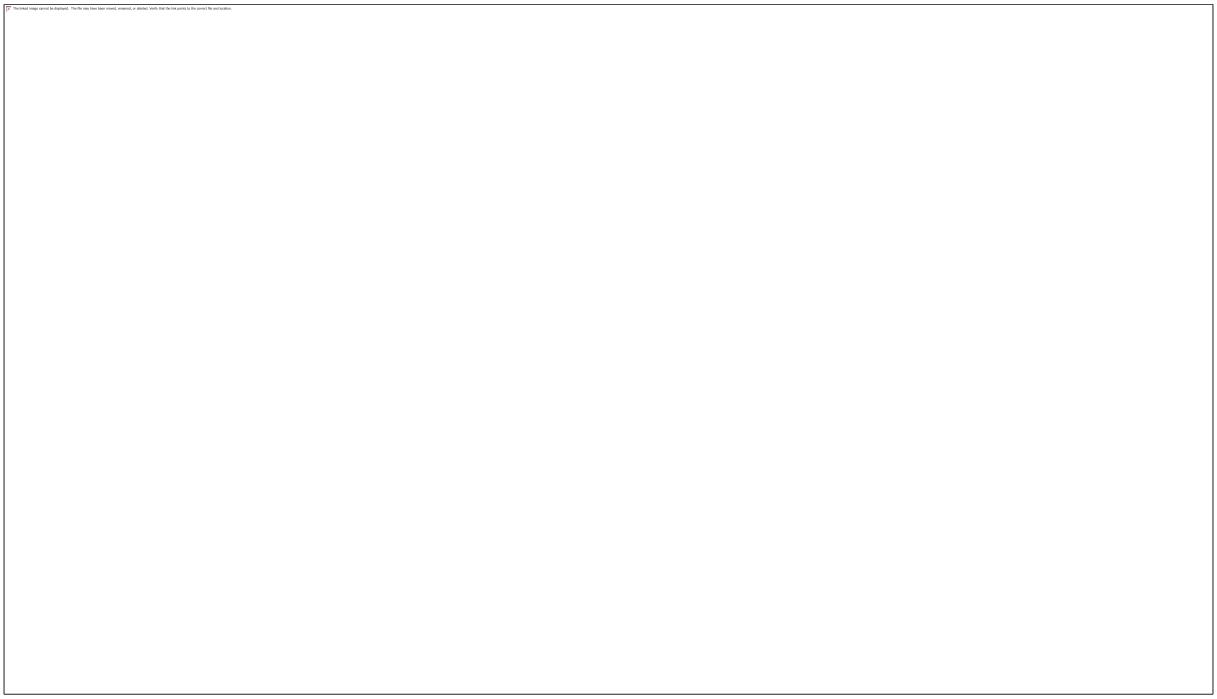
Bands above 1 GHz have the potential for additional capacity. Whilst these remained partly unassigned in many Member States, they will play an even more relevant role in the deployment of 5G services.

Lack of assignment may be due to different reasons depending on the circumstances in each Member States, such as delays in making the spectrum available and in the timely carrying out of assignment procedures, lack of market interest, use for defence purposes, etc.

In view of these different circumstances and regulatory conditions applicable to different bands, lack of assignment does not necessarily mean non-compliance with EU law.

[5] A limited list of justified reasons is contained in the annex of the Decision of the European Parliament and the Council on the use of the 470-790 MHz band in the Union.

Figure 1.64. Assigned spectrum in harmonised EU bands, December 2016[6]



Development of national broadband plans

Since the adoption of the digital agenda for Europe (DAE) 2020 targets — i.e. coverage of 30 Mbps download for all Europeans and take-up of 100 Mbps subscriptions for at least 50 % of European households — most Member States have gradually adopted national broadband plans (NBPs). They are devised to integrate all relevant aspects of an effective broadband policy and resources enabling policy makers and public authorities to properly plan public interventions in the telecommunications sector.

At the time of writing, a large majority of Member States had already started implementing their NBPs, albeit with various time horizons ranging from 2017 to 2022. Some NBPs are integrated within broader strategic approaches, others are documents specifically dedicated to broadband deployment. In some countries, multiple official documents drafted by different national authorities exist that specify aspects related to such broadband developments.

Content-wise, nearly all Member States' NBPs focus on reaching minimum download speeds — in most cases in terms of coverage (availability of commercial offer on a given territory) and sometimes also penetration (actual take-up in the form of internet access subscriptions). In

[6] Spectrum figures have been slightly updated after the publication of the Digital Economy and Society Index in the Netherlands, Romania, Bulgaria, Belgium, Malta, Hungary, Denmark, Slovakia and Slovenia.

contrast, emphasis on upload data rates is rather exceptional (e.g. Denmark, Italy, Luxembourg or Ireland). In addition, operational measures to foster demand for digital applications and high-speed internet access are relatively infrequent.

Notably, some Member States have held consultations on their draft national broadband plans. These include for instance the Czech Republic ('Digital Czech Republic'), France ('National Programme for Very High Speed Broadband') and the Slovak Republic ('National Strategy for Broadband Access in the Slovak Republic).*

Some Member State (Sweden, Germany and Austria) have already started to adapt the targets of their National Broadband Plans to the new EU broadband targets for 2025 proposed by the Commission in its September 2016 Communication "Connectivity for a Competitive Digital Single Market - Towards a European Gigabit Society" (see https://ec.europa.eu/digital-single-market/en/connectivity-european-gigabit-society).

** OECD OECD countries with public consultation procedures prior to drafting their national broadband plans are: Canada ('Improving Canada's Digital Advantage'), Ireland ('Next Generation Broadband'), Japan ('Path of light'), and the United States ('Connecting America: The National Broadband Plan')*

Broadband targets in national broadband plans

Although some NBPs do not have targets on penetration/uptake or have set targets on other features (e.g. upload speeds), the following general observations can be made:

- 11 Member States surpass the DAE-2020 targets (Austria, Belgium, Bulgaria, Denmark, Estonia, Finland, Germany, Hungary, Luxembourg, Slovenia and Sweden),
- 14 Member States are convergent with the DAE-2020 targets (Croatia, Cyprus, Czech Republic, Greece, Ireland, Italy, Latvia, Lithuania, Malta, Netherlands, Poland, Portugal, Slovakia and Spain),
- 3 Member States fall short of meeting the DAE-2020 targets (France, Romania and the United Kingdom).

Declared broadband targets in NBPs are, first and foremost, guideposts, whose practical feasibility and actual success will depend on the utilisation of appropriate means, including legal measures and financial resources. Therefore, it is important that Member States have the necessary resources and tools in place, rather than merely policy targets, to facilitate the effective rollout of broadband infrastructure on their territories.

The following figure shows a visualization of the broadband targets of the Member States in comparison to the DAE connectivity targets.

Figure 1.65. National Broadband Plans

MS	NBP-Targets	MS	NBP-Targets
Austria	99 % coverage with 100 Mbps by 2020	Italy	100 % coverage with 30 Mbps by 2020. 85 % HH penetration of 100Mbps services by 2020
Belgium	50 % HH penetration with 1 Gbps by 2020	Latvia	100 % coverage with 30 Mbps by 2020. 50 % HH penetration with 100 Mbps service by 2020
Bulgaria	100 % coverage with 30 Mbps by 2020. 50 % of households and 80 % of businesses subscribing >100 Mbps by 2020	Lithuania	100 % coverage with 30 Mbps by 2020. 50 % penetration with 100 Mbps by 2020
Croatia	100 % coverage with 30 Mbps by 2020. 50 % HH penetration with 100 Mbps service by 2020	Luxembourg	100 % coverage with 1 Gbps by 2020
Cyprus	100 % coverage with 30 Mbps by 2020. 50 % HH penetration with 100 Mbps service by 2020	Malta	100 % coverage with 30 Mbps by 2020. 50 % HH penetration with 100 Mbps service by 2020
Czech Republic	100 % coverage with 30 Mbps by 2020. 50 % HH penetration with 100 MBps service by 2020	Netherlands	100 % coverage with 30 Mbps by 2020. 50 % HH penetration with 100 Mbps service by 2020
Denmark	100 % coverage with 100 Mbps download and 30 Mbps upload by 2020	Poland	100 % coverage with 30 Mbps by 2020. 50 % HH penetration with 100 Mbps service by 2020
Estonia	100 % coverage with 30 Mbps by 2020. 60 % HH penetration with 100 Mbps by 2020	Portugal	100 % coverage with 30 Mbps by 2020. 50 % HH penetration with 100 Mbps service by 2020
Finland	99 % of all permanent residences and offices should be located within 2 km of an optic fibre network or cable network that enables connections of 100 Mbps by 2019	Romania	80 % coverage with 30 Mbps by 2020. 45 % HH penetration with 100 Mbps service by 2020
France	100 % coverage with 30 Mbps by 2022	Slovakia	100 % coverage with 30 Mbps by 2020.
Greece	100 % coverage with 30 Mbps by 2020. 50 % HH penetration with 100 Mbps by 2020	Slovenia	96 % coverage with 100 Mbps, 4% coverage 30 Mbps by 2020.
Germany	100 % coverage with 50 Mbps by 2018	Spain	100 % coverage with 30 Mbps by 2020. 50 % HH penetration with 100 Mbps service by 2020
Hungary	100 % coverage with 30 Mbps by 2018. 50 % HH penetration with 100 Mbps service by 2020	Sweden	95 % coverage with 100 Mbps by 2020
Ireland	100 % coverage with 30 Mbps by 2020. 50 % HH penetration with 100 Mbps service by 2020, expecting upstream bandwidth around 17 to 21 Mbps.	United Kingdom	95 % coverage with 24 Mbps by 2017

Source: Atene KOM: Study on National Broadband Plans in the EU (SMART 2014/0077) — draft/ongoing.

Funding national broadband plans

In a number of cases, Member States have decided to use extensively the European Investment and Structural Funds (ESIF) — notably the ERDF and the EAFRD — for a total programmed amount of over EUR 6 billion by 2020.

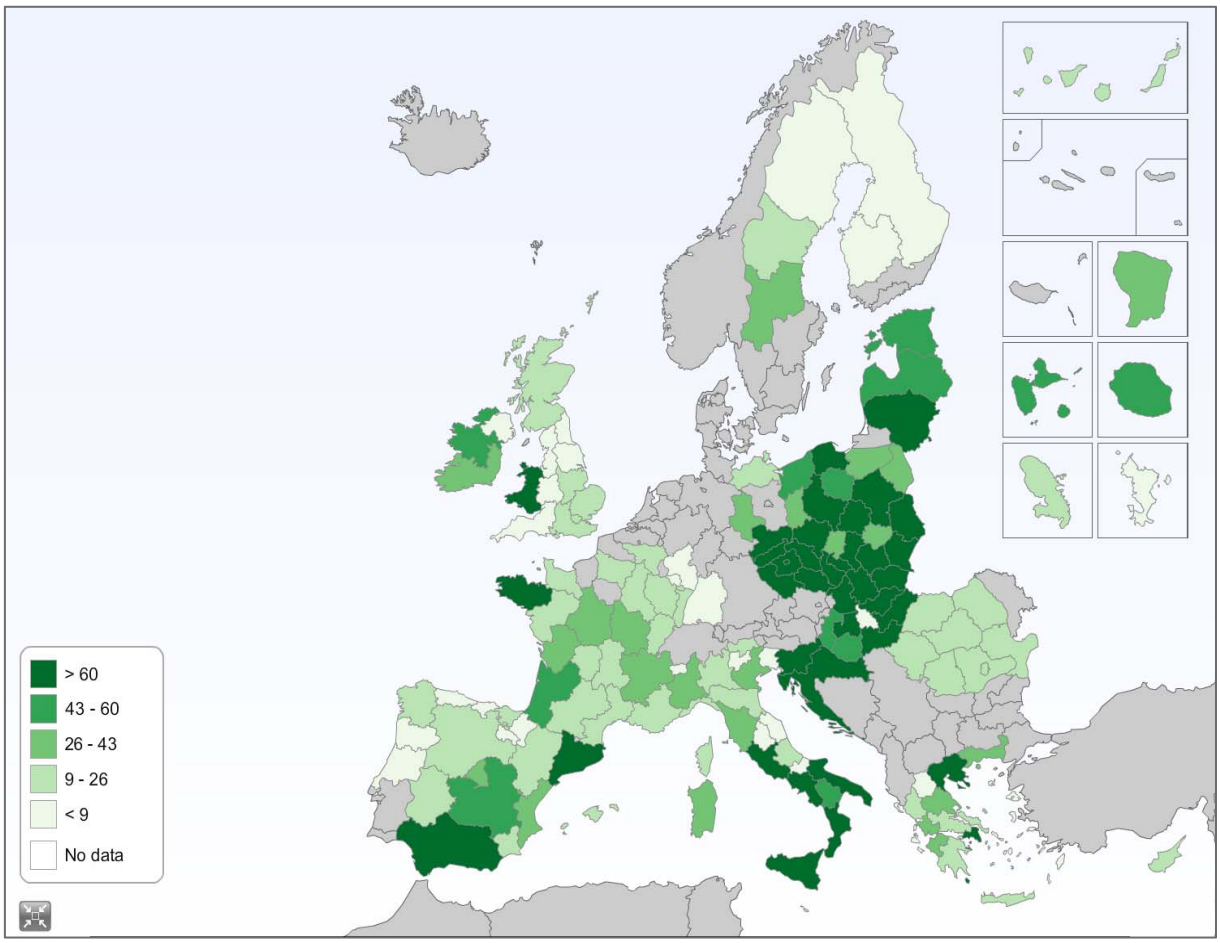
Countries like Poland and Italy plan to invest more than a EUR 1 billion of ERDF each; France, the Czech Republic, Spain and Hungary are in a range of EUR 400 million to EUR 700 million of ERDF each; Croatia, Greece and Slovakia between EUR 200 million and EUR 400 million of ERDF each.

For EAFRD, Italy has programmed the biggest budget on broadband infrastructure amounting nearly EUR 273 million. Germany and Sweden have also allocated significant budget, around

EUR 223 million for Germany an EUR 157 for Sweden. Investments from EAFRD planned from the remaining thirteen Member States range from EUR 65 to 0.3 million.

In addition, financial instruments, including the European Fund for Strategic investments and the forthcoming Connecting Europe Broadband Fund, aim at maximising the leverage of public funding dedicated to the roll-out the next generation of broadband networks.

Figure 1.66. ERDF investment in broadband and digital networks in ESIF Operational Programmes (million EUR)



Source: European Commission, ICT monitoring Tool (http://s3platform.jrc.ec.europa.eu/ict monitoring).