



Brussels, 19.6.2015
SWD(2015) 126 final

COMMISSION STAFF WORKING DOCUMENT

Implementation of the EU regulatory framework for electronic communication - 2015

Table of Contents

1. MARKET OVERVIEW	4
1.1. Indicators	4
1.2. International comparison	7
1.3. Market developments	9
2. MARKET REGULATION.....	10
2.1. Market analysis	10
2.2. Access and interconnection	13
3. BROADBAND PLANS AND FINANCING	14
4. INSTITUTIONAL ISSUES.....	14
4.1. The National Regulatory Authority.....	14
4.2. Authorisation and licences	15
5. SPECTRUM MANAGEMENT	17
6. RIGHTS OF WAY AND ACCESS TO PASSIVE INFRASTRUCTURE.....	19
7. CONSUMER ISSUES.....	20
7.1. The European emergency number 112.....	20
7.2. Number portability	20
7.3. Contractual obligations	20
7.4. Other consumer issues.....	21
8. UNIVERSAL SERVICE.....	21
9. NET NEUTRALITY	23
9.1. Legislative situation	23
9.2. Quality of service	23
Austria	24
Belgium	33
Bulgaria	46
Croatia	56
Cyprus	67
Czech Republic	76

Denmark	85
Estonia	95
Finland	104
France	114
Germany	125
Greece	136
Hungary	148
Ireland	159
Italy	169
Latvia	181
Lithuania	193
Luxembourg	201
Malta	212
Netherlands	222
Poland	232
Portugal	243
Romania	257
Slovakia	266
Slovenia	275
Spain	289
Sweden	301
United Kingdom	313
Glossary	326

Implementation of the EU regulatory framework for electronic communications — 2015

INTRODUCTION

The European Commission's Digital Agenda for Europe (DAE)¹ formed one of the seven pillars of the Europe 2020 Strategy, which set objectives for the growth of the European Union (EU) by 2020. It defined in particular a strategy to take advantage of the potential offered by the rapid progress of digital technologies, in order to generate smart, sustainable and inclusive growth in Europe.

The Digital Agenda's main objective, which is also one of the ten priorities of the new Commission², is to develop a Digital Single Market. In order to achieve this objective, on 6 May 2015 the Commission adopted a Digital Single Market Strategy³. The strategy, which has a multiannual scope, focuses on key interdependent actions to be taken at EU level. The Strategy is built on three pillars, one of which is the creation of the right conditions for digital networks and services to flourish. This requires well-functioning markets that can deliver access to high-performance fixed and wireless broadband infrastructure at affordable prices. In this regard, the EU's telecoms rules aim to ensure that markets operate more competitively and bring lower prices and better quality of service to consumers and businesses, while ensuring the right regulatory conditions for innovation, investment, fair competition and a level playing field.

In the context of the Digital Agenda Scoreboard, which measures the progress of the European digital economy against specific goals set by the DAE⁴, the Commission services publish an annual staff working document describing the situation of the European electronic communications market and the state of implementation of the EU regulatory framework for electronic communications⁵, also in view of the forthcoming review of the telecoms regulatory framework announced in the Digital Single Market Communication. This staff working document complements the quantitative data of the 2014 Digital Economy and Society Index (DESI)⁶, in particular with regard to connectivity, and looks at a set of key regulatory areas.

¹ <http://ec.europa.eu/digital-agenda/digital-agenda-europe>

² http://ec.europa.eu/news/eu_explained/140715_en.htm

³ <https://ec.europa.eu/digital-agenda/en/news/digital-single-market-strategy-europe-com2015-192-final>

⁴ Here are just a few of the specific goals: the entire EU to be covered by broadband by 2013, the entire EU to be covered by broadband above 30 Mbps by 2020, 50 % of the EU to subscribe to broadband above 100 Mbps by 2020 (for a complete list see <http://ec.europa.eu/digital-agenda/en/digital-agenda-scoreboard>).

⁵ As defined in the glossary.

⁶ <https://ec.europa.eu/digital-agenda/en/download-scoreboard-reports>

1. MARKET OVERVIEW

1.1. Indicators

Broadband indicators (December 2011- 2014) — EU average ⁷	(Sources: IHS, VVA, Eurostat, Cocom)			
	2011	2012	2013	2014
Fixed broadband coverage (% of homes)	95 %	97 %	97 %	97 %
NGA coverage (% of homes)	48 %	54 %	62 %	68 %
Fixed broadband take-up (% of households)	62 %	67 %	69 %	70 %
Share of >30 Mbps subscriptions (% of fixed broadband subscriptions)	9 %	15 %	21 %	26 %
Share of >100 Mbps subscriptions (% of fixed broadband subscriptions)	2 %	3 %	5 %	9 %
Share of DSL in fixed broadband (% of fixed broadband subscriptions)	76 %	74 %	73 %	70 %
Incumbent market share fixed broadband (% of subscriptions)	43 %	42 %	42 %	41 %
HSPA Mobile broadband coverage (% of homes)	95 %	96 %	97 %	97 %
LTE Mobile broadband coverage (% of homes)	8 %	27 %	59 %	79 %
Mobile broadband penetration (subscriptions per 100 inhabitants)	47 %	54 %	64 %	72 %
Market share of leading mobile network operator (% of subscriptions)	37 %	37 %	35 %	35 %

The DAE set a target to ensure full basic broadband coverage by 2013. This has been achieved via different technologies. Coverage of fixed basic broadband networks stabilised in the last years. Mobile broadband via 3G networks has achieved a comparable coverage, with very limited differences across Member States⁸. Satellite networks offer ubiquitous coverage for the entire territory of the European Union⁹.

⁷ Sources: coverage data – studies by IHS and VVA; penetration data – figures gathered in the context of the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe (except fixed broadband take-up, provided by Eurostat). Figures on fixed, NGA and LTE coverage, mobile market share and mobile broadband penetration for 2012 and 2011 and on speeds (30 and 100Mbps) for 2011-2013 refer to EU 27.

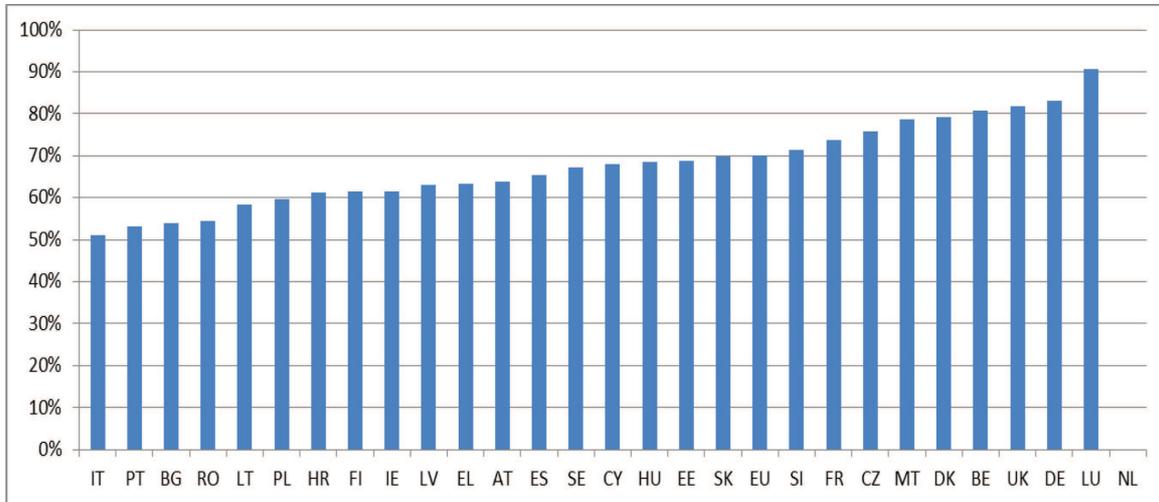
⁸ In 2014, all 28 Member States achieved HSPA mobile coverage above 90 %. For fixed basic broadband, in four Member States (Romania, Poland (where fixed coverage even slightly decreased), Estonia, Slovakia) the figure remains below 90 %.

⁹ http://ec.europa.eu/newsroom/dae/document.cfm?doc_id=8238

Penetration patterns, however, remain very different for fixed and mobile broadband. While still progressing, the growth rate of fixed penetration is gradually slowing down (below 1pp).

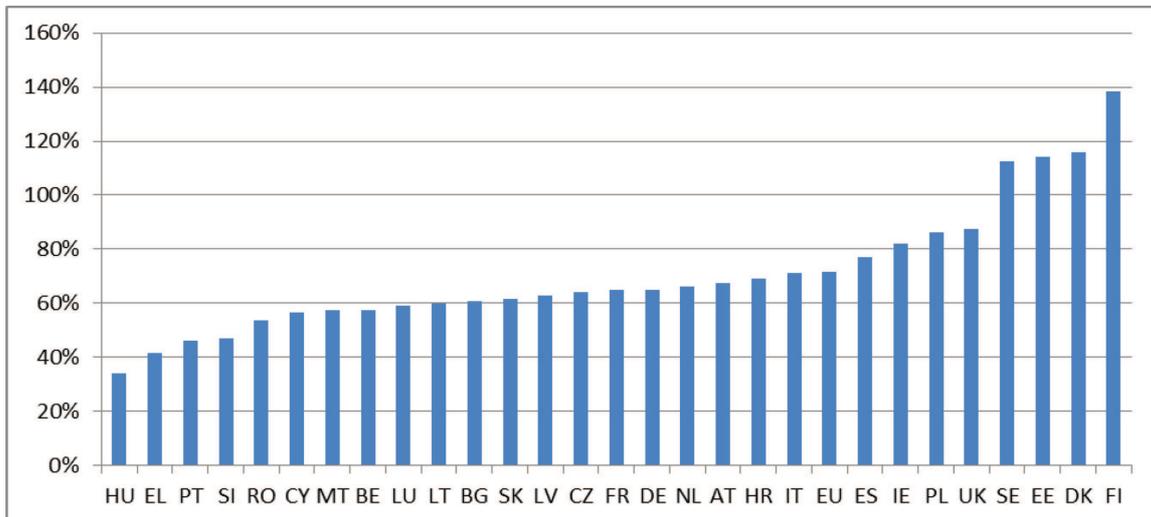
Fixed broadband take-up (as % of households), 2014

(Source: Eurostat)



Mobile broadband penetration, on the other hand, is maintaining a stable growth rate, although with larger variations across Member States than for fixed broadband. Moreover, there is a difference in the patterns of broadband penetration over fixed and mobile networks in different Member States. Some Member States with low fixed broadband penetration show a much higher mobile broadband penetration, and vice versa¹⁰.

Mobile broadband penetration (residential and business subscriptions as % of population), January 2015
(Source: Cocom)



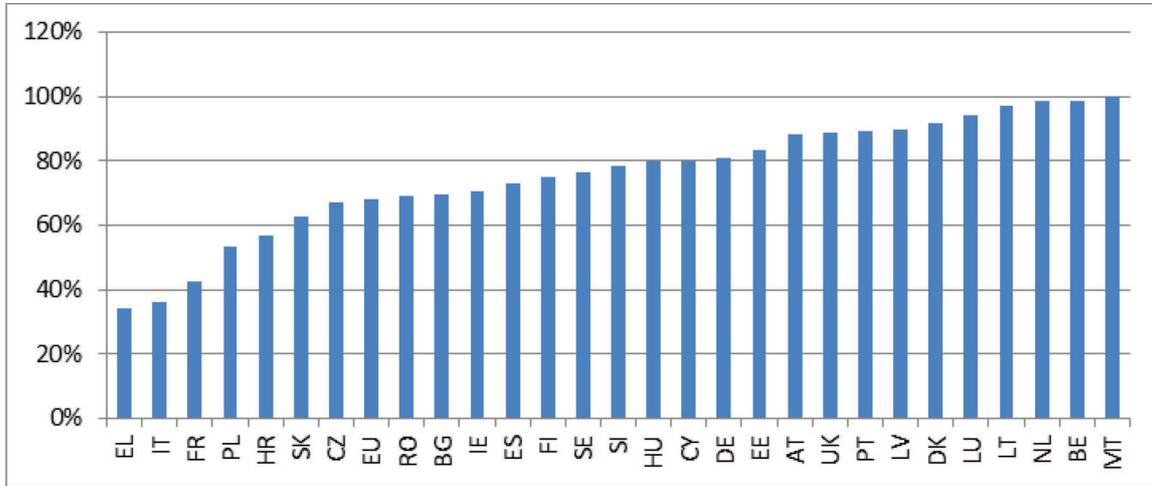
With regard to the more ambitious high speed broadband targets for 2020, the growth in NGA coverage remains substantial, with some Member States at the bottom end catching

¹⁰ E.g. Italy and Poland are in the first category, while Hungary, Slovenia, Luxembourg, Germany, Belgium and Malta are in the second.

up with the others¹¹. The overall growth, however, is slightly lower in 2014 compared with 2013.

Fixed NGA coverage as % of homes, end of 2014

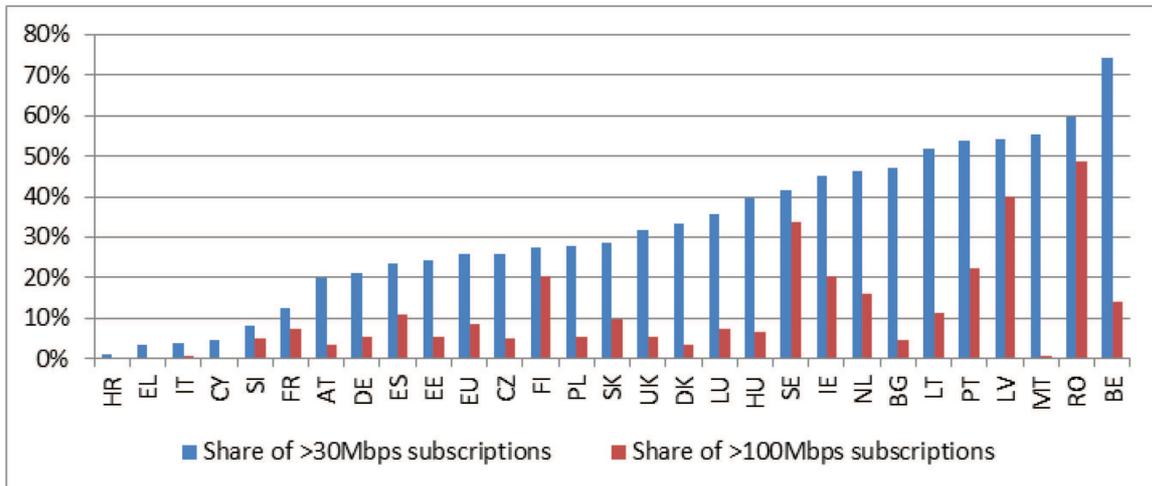
(Source: IHS, VVA)



In spite of the gradual extension of NGA networks, the growth in high speed broadband subscriptions (especially above 30Mbps download) slightly slowed in 2014 compared with previous years, while growth in very high speed subscriptions (above 100Mbps) remained stable. Overall, fixed high speed broadband penetration still varies significantly across the Union, with some Member States continuing to trail behind on NGA take-up¹².

Share of high speed subscriptions (>30Mbps and >100Mbps), January 2015

(Source: Cocom)

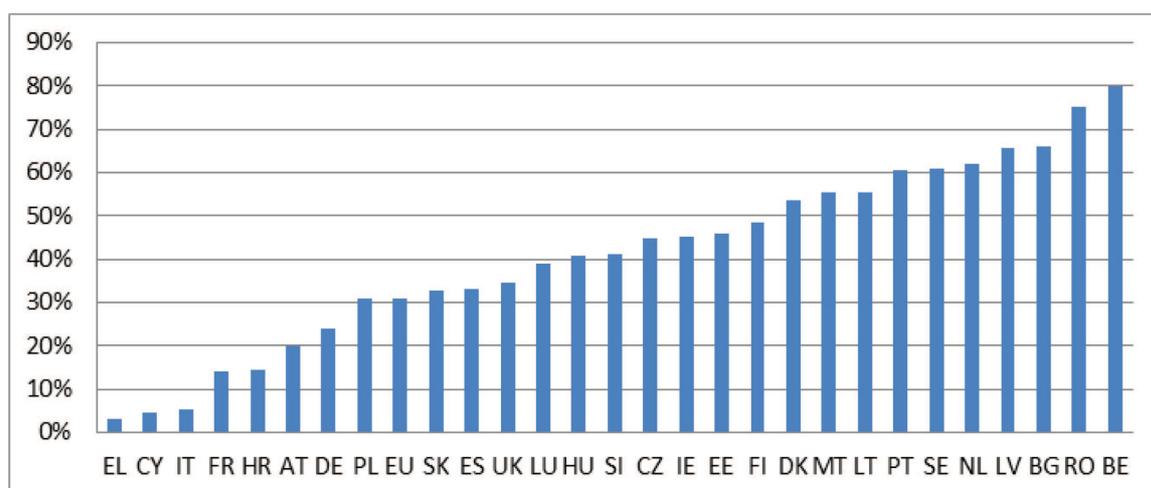


¹¹ Croatia, Italy, Slovakia and Ireland, and to a lesser extent Greece, had major increases.

¹² Italy, Greece and Cyprus.

NGA subscriptions as a % of total fixed broadband subscriptions, January 2015

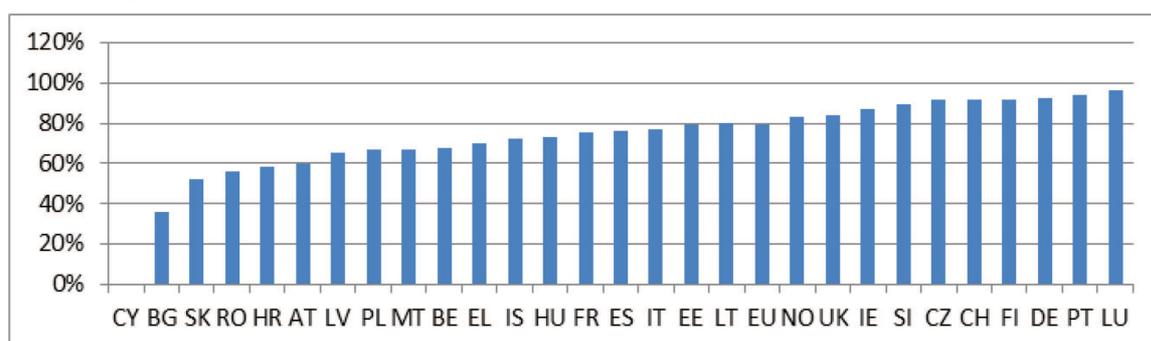
(Source: Cocom)



Finally, after a late start, LTE deployment is proceeding apace and its coverage is increasing, with several Member States reaching coverage of more than 90 % of homes¹³.

LTE coverage — end of 2014

(Source: IHS, VVA)



1.2. International comparison

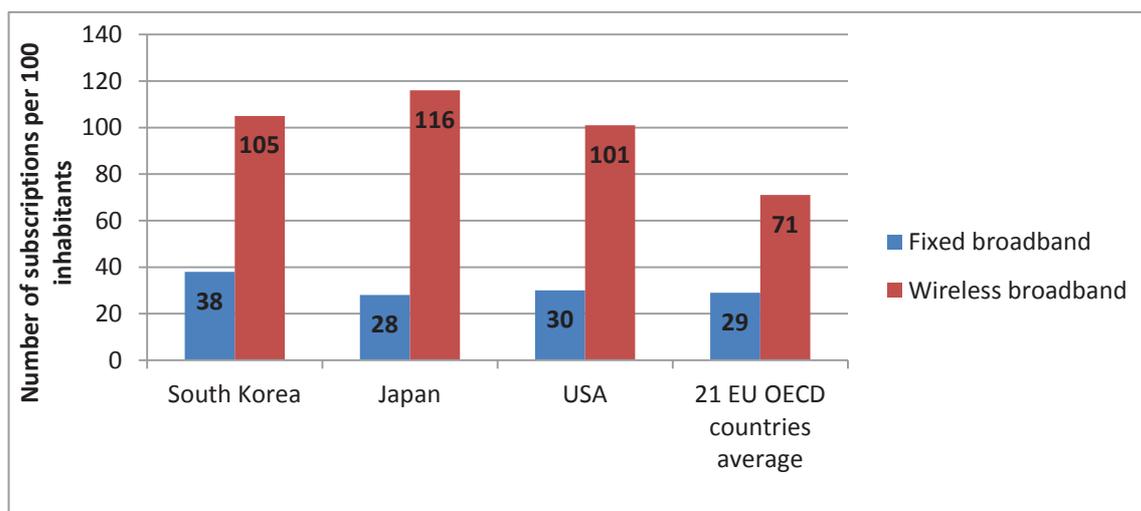
Comparison with non-EU countries shows some similar trends, but also some significant divergences. The trend in fixed broadband subscriptions in Japan, South Korea and USA is not very different from the situation in the EU. The number of fixed broadband subscriptions is increasing slowly but steadily, although the market seems to be reaching saturation point. In June 2014, Japan had 28 fixed broadband subscriptions per 100 inhabitants. In South Korea, this number was 38, and in the USA it was 30, whereas the subscription percentage per 100 inhabitants in the OECD EU countries was 29 %¹⁴. The percentage in Japan and the USA is similar to that in the EU OECD countries and displays similar trends¹⁵.

¹³ Slovenia, the Czech Republic, Finland, Germany, Portugal, Luxembourg. Denmark, Sweden and the Netherlands have reached near full coverage. On the other hand LTE services in Cyprus have not yet been launched.

¹⁴ According to COCOM data, the average number of subscriptions per 100 inhabitants for EU as a whole was 31 % in June 2014

¹⁵ OECD Broadband Portal: Fixed and wireless broadband subscriptions per 100 inhabitants.

OECD Fixed and wireless broadband take-up (subscriptions/100 people) (Source: OECD Broadband Portal)



The penetration of mobile broadband, on the other hand, seems far more advanced in these three countries and is growing in line with the increasing number of services enabled by 3G and eventually also by 4G. Japan, South Korea and the USA have seen substantial progress in the roll-out and take-up of 4G LTE and are all leading markets for 4G LTE. The countries all have substantially higher connection rates than in the EU¹⁶. However, after a slower start, also due to more fragmented spectrum assignments, roll-out and take up of 4G in Europe seems to catch up¹⁷.

LTE is increasingly being deployed around the world. While the USA is the world's largest 4G market, with around 85 million 4G connections at the end of 2013 and plans to launch VoLTE in 2014, the country that is the most developed in this respect is South Korea.

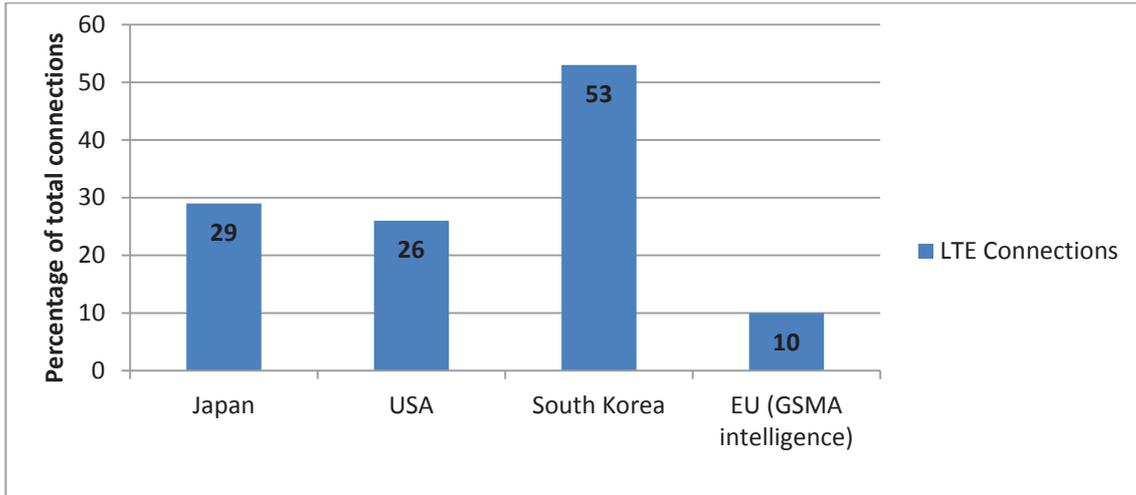
Percentage of 4G connections by market

(Source: GSMA Mobile Economy 2015 / GSMA Mobile Economy North America 2014)

¹⁶ GSMA: The Mobile Economy 2015:

http://gsmamobileeconomy.com/GSMA_Global_Mobile_Economy_Report_2015.pdf

¹⁷ See progress in LTE coverage above as well as FCC, *16th and 17th Mobile Wireless Competition Report*.



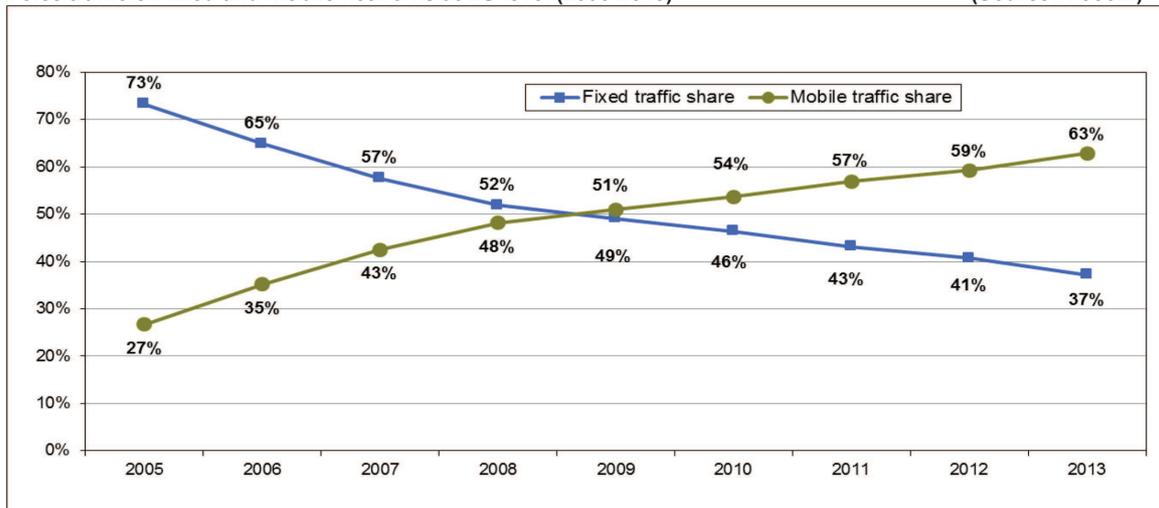
1.3. Market developments

On average, the shrinkage in the incumbents' market share slowed down EU-wide. The EU average for the incumbents' market share in fixed broadband (% of subscriptions) remains at 41 %, the same as in the previous reporting period. However, there are significant variations ranging from 23 % (Bulgaria) up to 69 % (Luxembourg).

The fixed voice market continued its overall decline due to increasing fixed-to-mobile replacement and voice over IP (VoIP) alternatives.

Voice traffic on fixed and mobile networks at EU level (2005-2013)

(Source: Cocom)



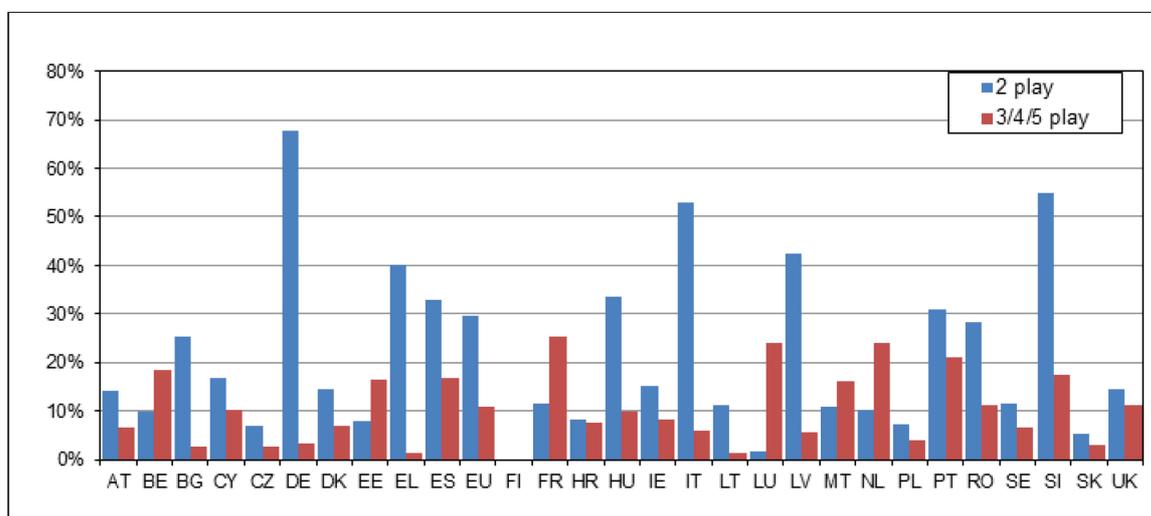
In order to achieve cost savings and efficiencies, mobile network operators (MNOs) are entering into network sharing agreements in response to the increasing need to invest in new networks, in particular with the deployment of LTE. Passive sharing is very widespread in the EU. In some instances companies create joint ventures or outsource assets to tower companies¹⁸ that own and manage passive infrastructure and sites.

¹⁸ Such as in Italy.

Currently MNOs in 12 Member States¹⁹ are involved in various types of active sharing agreements. Regulatory and competition authorities have begun to scrutinise some of these agreements in order to minimise the risk that some types of sharing agreements may lead to a decrease in competition. In addition to network sharing, the trend towards industry consolidation is also continuing, as can be seen from the various transactions (completed or announced) during the reporting period²⁰, some of them still subject to regulatory clearance by the competition authorities.

Bundled offers became increasingly popular throughout the EU, though at very different paces. In the reporting period, the average penetration of bundled offers (subscriptions/population) in the EU has increased by five percentage points from 36 % to 41 % (July 2014). The most common bundle combination was fixed voice with broadband services, although in some countries a significant number of end-users tended to bundle more services together, including mobile and/or internet protocol TV (IPTV).

Double play and triple-play penetration (subscriptions/population), July 2014 (Source: Cocom)



2. MARKET REGULATION

2.1. Market analysis

2014 saw the third revision of the Commission’s Recommendation on relevant product and service markets²¹, continuing the deregulatory trend already witnessed in the

¹⁹ In Cyprus, the Czech Republic, Denmark, Finland, France, Greece, Hungary, Poland, Romania, Spain, Sweden and the United Kingdom.

²⁰ E.g. France (Numericable/SFR), Germany (Telefonica Deutschland/E-Plus), Greece (Vodafone/HoL), Ireland (Hutchison Ireland/O2 Ireland), Poland (T-Mobile Polska/GTS Poland), Portugal (ZON/Optimus, Altice/PT Portugal), Slovenia (Telemach/Tušmobil), Spain (Vodafone/ONO, Orange/Jazztel), United Kingdom (BT/EE, Three/O2).

²¹ Commission Recommendation on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services, 9.10.2014, C(2014) 7174 final.

previous overhaul of the Recommendation in 2007. The number of markets that warrant ex-ante regulation has been reduced to four, taking into account in particular progress in competition and technological developments.

Considerable progress has been made in the past year concerning the implementation of the Commission's 2009 Termination Rates Recommendation²², with the vast majority of national regulatory authorities (NRAs) now applying a costing methodology in line with the Commission's recommended approach regarding both fixed and mobile termination rates. This has led to significantly lower termination rates across the EU²³. However, a small number of deviations from the recommended approach remain²⁴, notably the constraints purportedly imposed on the Finnish NRA by national legislation and the continued application of LRIC+ by the German NRA in spite of an increasing number of Article 7a Recommendations by the Commission and guidance from BEREC. The Commission services are following up on these issues with the respective Member States and in the context of an ongoing preliminary Court of Justice ruling in response to a request by a Dutch Court²⁵. At the same time, given the persistent refusal by the German NRA to apply a pure LRIC methodology in this regard, the Commission services are now also exploring what further steps could be taken to ensure the consistency and proper functioning of the internal market in telecommunications.

On the regulation of broadband markets, the Commission is faced with a mixed picture. Although not all NRAs as yet follow the recommended approach when regulating markets 3a and 3b²⁶, we can nevertheless detect a trend whereby an increasing number of NRAs have recently adopted regulatory approaches for the broadband markets (in particular NGA/fibre regulation) that are broadly in line with the Commission's 2013 Recommendation on consistent non-discrimination obligations and costing methodologies²⁷. For the wholesale central access markets, we have witnessed an increasing deregulatory trend, with more and more NRAs either lifting (or proposing to lift) regulation at regional level or, in some instances, even nationally²⁸. The Commission was ready to accept such proposals where the removal of regulation was justified by the competitive conditions in the relevant Member States.

Concerning new technical developments with an impact on the regulatory landscape, an increasing number of NRAs have been confronted with the question of whether to allow the introduction of VDSL-Vectoring technology, given the potential impact this has on

²² Commission Recommendation on the Regulatory Treatment of Fixed and Mobile Termination Rates in the EU, 7.5.2009, 2009/396/EC.

²³ E.g. MTRs have seen a decrease from an EU average of over 4€ct/min in January 2012 to a current average of just below 1€ct/min in the Member States in compliance with the recommended approach.

²⁴ For MTRs, only the Netherlands, Finland and Germany currently deviate from the Recommendation.

²⁵ KPN et al (C-28/15).

²⁶ i.e. wholesale local access provided at a fixed location (3a) and wholesale central access provided at a fixed location for mass-market products (3b).

²⁷ Examples of approaches closely in line with the 2013 Recommendation have been adopted in, for example, Luxembourg, Sweden and the United Kingdom, although the NRAs in those countries tend to interpret the economic replicability test more strictly than envisaged by the Commission.

²⁸ See the recent decision by the Swedish NRA to deregulate the market for wholesale central access on a nationwide basis.

the ability to provide unbundled network access. The Commission has not objected to the removal of a sub-loop unbundling (SLU) obligation in case of VDSL-Vectoring, where the transition process is transparent and where the operator using the vectoring technology is obliged to offer as a substitute an appropriate virtual access product. On this point, the Commission called upon NRAs to ensure that any future virtual access offer serving as a substitute for sub-loop unbundling should display features which are as close as possible to a physical unbundling product, i.e. it should, in principle, be local, service-agnostic, uncontended in practice and allow for sufficient control of the access connection and the customer premises equipment.

Legal developments include a decision by the Court of Justice²⁹ confirming that an NRA has the power to impose on an operator with significant market power an obligation to install, at the request of competing operators, a drop cable not exceeding 30 metres in length connecting the distribution frame of an access network to the network termination point at the end-user's premises, as long as that obligation is based on the nature of the problem identified, proportionate and justified in the light of the objectives set out in Article 8(1) of the Framework Directive. Compliance of NRAs with their obligation to review relevant markets at three-year intervals remains an issue in a large number of Member States. Following contact with BEREC and the individual NRAs, the Commission services are closely monitoring action taken at national level to prevent persistent delays from leading to inappropriate over- or under-regulation. For example, in October 2014 the Commission decided to refer Luxembourg to the Court of Justice for failure to comply with the Framework Directive. After the Luxembourgish NRA provided notification of the markets for which a second round of analysis was still missing, the Commission decided in March 2015 to withdraw the case.

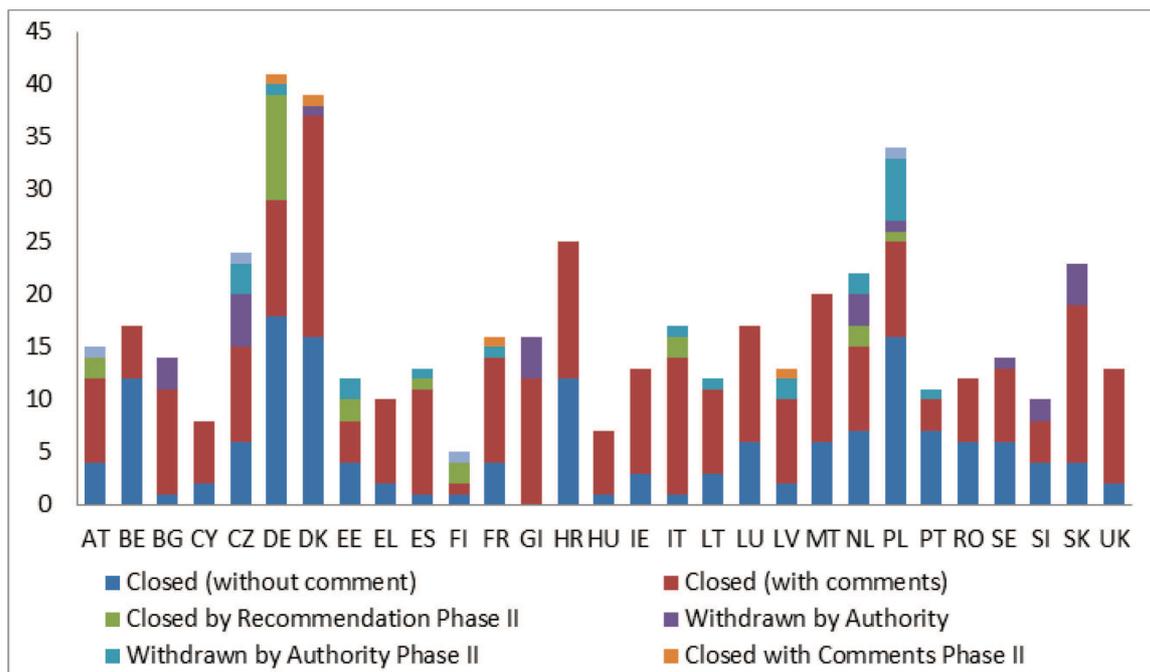
A more general assessment of market regulation across the EU shows that the Commission has issued four veto decisions since the end of the transposition phase following the last review of the regulatory framework³⁰. During the same period, NRAs withdrew 24 notifications during Phase I and 21 notifications during Phase II of the procedure. The cases which led to the opening of detailed investigation (Phase II) can be broadly classified into three separate categories: (i) fixed and mobile call termination markets; (ii) broadband access, i.e. local and central access markets; and (iii) notifications of other or atypical markets, i.e. those outside the Relevant Markets Recommendation (such as SMS termination, IP transit and peering). In all cases, the Phase II investigations aimed at ensuring regulatory consistency in light of EU law. The table below contains an overview of the number of notifications per Member State, with the indication of the type of outcome³¹.

Number of notifications per Member State (with the indication of the type of outcome)

²⁹ C-556/12.

³⁰ i.e. between 26 May 2011 and 29 April 2015.

³¹ The following outcomes are possible: In Phase I, a withdrawal by the NRA, no comments by the Commission, a comments letter, or the opening of a Phase II investigation, which in turn can conclude by a withdrawal of the NRA, a decision by the Commission to lift its reservations, a veto under Art.7, and a Phase II Recommendation under Art. 7a.



2.2. Access and interconnection

The migration to an all-IP based network architecture is gaining momentum. Two incumbents have already completed the migration³² while in at least 11 other Member States³³, the incumbent has already announced plans to migrate.

In addition to the regulation of IP-based interconnection for voice services, a number of NRAs³⁴ have announced or adopted measures to prepare and manage the transition towards all-IP networks, either by setting a deadline for the full transition of all operators or by addressing technical issues (e.g. location of the point of interconnection) and pricing features.

With only a few remaining exceptions, all operators offer IP interconnection products. As a consequence of the migration to all-IP, offers for the provision of IP-based interconnection voice services are under regulatory scrutiny in an increasing number of Member States. Reporting obligations for IP-based interconnection for voice services agreements are in place in 10 Member States³⁵, while regulated reference offers for IP-based interconnection for voice services have been set up in 13 Member States³⁶.

3. BROADBAND PLANS AND FINANCING

By May 2015, a large majority of Member States had adopted national broadband plans: these were either integrated within broader digital strategy documents or were standalone

³² In Austria and Slovakia.

³³ Belgium, Denmark, France, Germany, Hungary, Italy, Luxembourg, the Netherlands, Poland, Romania and the United Kingdom.

³⁴ Bulgaria, Croatia, Cyprus, Germany, Italy, Portugal and Slovenia.

³⁵ Belgium, Bulgaria, Croatia, Cyprus, Germany, Spain, France, Greece, Latvia and Romania.

³⁶ Austria, Bulgaria, Croatia, Cyprus, Denmark, Germany, France, Hungary, Greece, Italy, Slovenia, Spain and Sweden.

documents specifically dedicated to broadband deployment. Their objectives are either in line with or more ambitious than the speed targets set up in the DAE, although with varying time scales, ranging from 2015 to 2022. The Member States that have not yet adopted their national broadband plans are in the process of finalising them³⁷. Some Member States are doing this in order to fulfil the ex ante conditionality criteria under the ESIFs (European Structural and Investment Funds) regulations with regard to the adoption of next generation networks (NGN) plans.

Although most of the financing should come from the private sector, funding for the relevant national projects for network roll-out also comes both from national public funds and from the EU, via the European Regional Development Fund and the European Agricultural Fund for Rural Development. 22 Member States have allocated ERDF and/or EAFRD funding to broadband deployment for the period 2014-2020, totalling approximately EUR 6 billion. However there are significant differences between Member States in terms of net amounts and percentages of ERDF and/or EAFRD funds earmarked for broadband deployment. Overall, despite significant commitment and ambitious plans to catch up over NGA deployment, for example in France or Italy, the level of public financing in EU Member States has not always matched the amount of public investment required. Innovative funding solutions will continue to be needed in the coming years to reach the national and EU targets, particularly in order to provide access to 30 Mbps connections for all Europeans by 2020. For example, France has provided the first case of the use of project bonds in the telecoms sector, with the company Axione refinancing some public sector projects with long-term needs. The CEF (Connecting Europe Facility) and the EFSI (European Fund for Strategic Investment) will provide further opportunities to use financial instruments (e.g. guarantees, loans, equity) to underpin innovative business models designed to enhance the leverage effect of public financing in supporting private investments. The use of financial instruments for broadband deployment is also encouraged under the European Structural and Investment Funds.

4. INSTITUTIONAL ISSUES

4.1. The National Regulatory Authority

There were significant improvements in several Member States in 2014 with regard to the independence of the national regulatory authority. Following action or enquiries by the Commission, some forms of ministerial or legislative intervention in NRA activity have been eliminated³⁸ and safeguards for the independence of the regulator against dismissal have been reinforced³⁹.

With regard to powers and resources, some Member States changed the scope and allocation of the tasks of their NRAs in 2014⁴⁰ and several Member States reduced their NRAs' budgets⁴¹.

³⁷ Such as Croatia, Cyprus, Greece and Slovenia.

³⁸ In Belgium, the Netherlands and in France.

³⁹ In Latvia, Sweden.

⁴⁰ Such as in Estonia and Slovakia.

The above developments confirm two recurring trends regarding the independence and regulatory capacity of NRAs. The first concerns the restructuring or modification of the competences of NRAs, which has happened in no less than 11 Member States in the past five years⁴², often motivated by attempts to make savings. The second is Member States' propensity to keep or regain control of regulatory issues by transferring competences back to ministries (Spain), trying to ensure a power of review (Belgium, the Netherlands), influencing the NRA's decisions by exercising control over its work programme (Belgium, Portugal, Slovenia) or giving it policy directions (Ireland).

In this context, the Court of Justice ruled that the *Teleklagenævnet*, the Danish body with the power to rule on appeals against decisions of the Danish NRA, cannot be regarded as a court or tribunal for the purposes of Article 267 TFEU as it lacks the requisite degree of independence⁴³.

4.2. Authorisation and licences

Transposition of the revised Authorisation Directive has resulted in overall harmonisation of the procedures applicable to national and cross-border operators. However, in recent years there has been some uncertainty over the application of the national notification requirements and their impact on the general authorisation systems in several Member States⁴⁴. The Commission services raised the matter with the Member States concerned, almost all of which subsequently removed certain establishment and guarantee requirements or abolished additional notification requirements⁴⁵. However, the Commission is currently pursuing infringement proceedings against the Czech Republic on this subject. The legal issues in this area were also clarified by a preliminary ruling of the European Court of Justice in 2014⁴⁶, according to which EU law precludes the imposition of national registration requirements in addition to those provided for in the Authorisation Directive, and must be interpreted as meaning that operators cannot be required to establish branches or a separate legal entity in the country where the services are provided.

How NRAs apply the provision in EU law on administrative charges has raised several implementation and interpretation issues over the past few years. Recent developments in the Court of Justice's case-law clarified the scope of administrative charges and linked them to the general authorisation procedure⁴⁷. In spite of these clarifications, there have been a number of cases where the Commission has had to look into how the systems of

⁴¹ In Bulgaria, Italy, Greece, France, as well as in Slovakia where the new postal competences were accompanied by a decrease in resources.

⁴² Belgium, Denmark, Estonia, Hungary, Ireland, Italy, the Netherlands, Slovenia, Slovakia, Spain, the United Kingdom.

⁴³ C-222/13. The case did not directly address the question of whether the *Teleklagenævnet* fulfils the independence requirements of the Framework Directive.

⁴⁴ The Czech Republic, Greece, Hungary, Romania, Slovakia, Portugal.

⁴⁵ Greece, Hungary, Romania, Slovakia, Portugal.

⁴⁶ *UPC DTH Sàrl v Nemzeti Média* (C-475/12).

⁴⁷ *Telefónica de España SA* (C-284/10) and *Vodafone Omnitel* (C-228-232/12 and C-254-258/12), *Commission v. France* (C-485/11), *Vodafone Malta* (C-71/12).

administrative charges are being implemented in various Member States⁴⁸. The Court also provided clarifications on the degree of discretion allowed to Member States in setting the appropriate amount of fees for rights of use as well as in deciding the intended use of the income derived from that fee⁴⁹.

In 2014 the Commission services also investigated a number of cases concerning the amendment or renewal of rights of use, in particular those linked to spectrum resources⁵⁰.

In addition to administrative charges and fees for rights of use, the electronic communications sector or the provision of electronic communications is often subject to additional financial burdens in the form of taxation and various fees in several Member States⁵¹. This trend continued in 2014⁵². Examples of such financial burdens include fees and taxes relating to infrastructure⁵³.

Radiation thresholds for electromagnetic fields (EMF) generated by the operation of electronic communications networks place further limits on the deployment of these networks. Following an exchange of views with the Commission services, the Brussels Capital Region in Belgium adopted higher thresholds in 2014, which were subsequently challenged in the courts. Other Member States with historically stricter standards⁵⁴ than those recommended by the Council⁵⁵ kept their levels unchanged. This leaves the majority of the Member States with EMF limits in line with the EU-wide recommendations.

At the end of 2014, the two mobile satellite services (MSS) operators selected by the Commission in 2009 are authorised in 23 Member States. In three Member States only one is authorised, while in two Member States none are authorised. Finally, six Member States⁵⁶ have taken enforcement actions, coordinated pursuant to Decision 2011/667/EU, in order to ensure compliance with the conditions applicable to the provision of MSS.

On the assignment to non-ECN/S providers⁵⁷ of rights of use for numbers, there are some disparities of approach amongst Member States. Some clarified that numbering resources

⁴⁸ Latvia, Italy, Lithuania.

⁴⁹ Telefonica Moviles Espana SA (C-85/10), Joined Cases Provincie Antwerpen v Belgacom NV van publiek recht (C-256/13) and Mobistar NV (C-264/13).

⁵⁰ France, with regard to the power to modify the rights of use granted to TV channels; Croatia, with regard to increase of spectrum fees; Poland, with regard to extension of rights of use in the 900 and 1800MHz band without public consultation. Following the launch of infringement proceedings against Hungary in 2014 concerning the award of temporary licenses to radio stations, Hungary has addressed the Commission's concerns.

⁵¹ Italy, Hungary, Malta, France, Spain, Slovakia.

⁵² Portugal, Romania and, due to new regional provisions, Spain.

⁵³ Romania, Belgium.

⁵⁴ Croatia, Greece, Italy, Lithuania, Poland, Slovenia.

⁵⁵ OJ L 199, 30.7.1999, p. 59.

⁵⁶ Finland, Germany, Spain, Sweden in 2014, United Kingdom and France in the first quarter of 2015.

⁵⁷ i.e. providers that do not fulfil the definition of electronic communications networks (ECN) and services (ECS) under Article 2 of Directive 2002/21/EC of the European Parliament and of the Council of 7

are assigned to electronic communications providers only⁵⁸. Other Member States allow other service providers to access special numbers (such as short numbers)⁵⁹ or grant access to numbers for special use (where these resources are used for particular socially relevant services)⁶⁰, while other Member States grant non-ECN/S providers access to a range of mobile numbers⁶¹.

5. SPECTRUM MANAGEMENT

The ‘digital dividend,’ i.e. the 800 MHz band, has been assigned so far by 24 Member States, nine of which were granted an exemption from the deadline set by Article 6(4) of the Radio Spectrum Policy Programme. For varying reasons, four Member States are late⁶². The Commission services are closely monitoring developments in Poland, where the derogation deadline has been missed by a significant margin and the auction is ongoing.

In several Member States the 900 MHz, 1800 MHz and 2.1 GHz bands have been or are being reformed to allow operators the parallel use of multiple transmission technologies (GSM, UMTS, LTE)⁶³. However, some Member States reported a lack of market interest in higher bands, notably the 3.4-3.8 GHz band⁶⁴. Several public consultations have been launched to reassess market demand⁶⁵ after Commission Implementing Decision 2014/276/EU of 2 May 2014 included new harmonised technical standards to apply in this frequency band. Some Member States have also started the authorisation process to assign the 1.5 GHz band (1452-1492 MHz), following the harmonisation of this frequency band by Commission Implementing Decision (EU) 2015/750⁶⁶. However, the amount of spectrum allocated by the Member States is still far from the objectives set out in the RSPP.

Spectrum assigned for wireless broadband in EU harmonised bands, December 2014
(Source: Commission SWD(2015)100 – Digital Single Market Strategy for Europe, p. 40)

March 2002 on a common regulatory framework for electronic communications networks and services (Framework Directive).

⁵⁸ Such as Luxembourg, Italy, Slovakia.

⁵⁹ Such as Lithuania, Sweden.

⁶⁰ Such as Belgium.

⁶¹ Such as the United Kingdom.

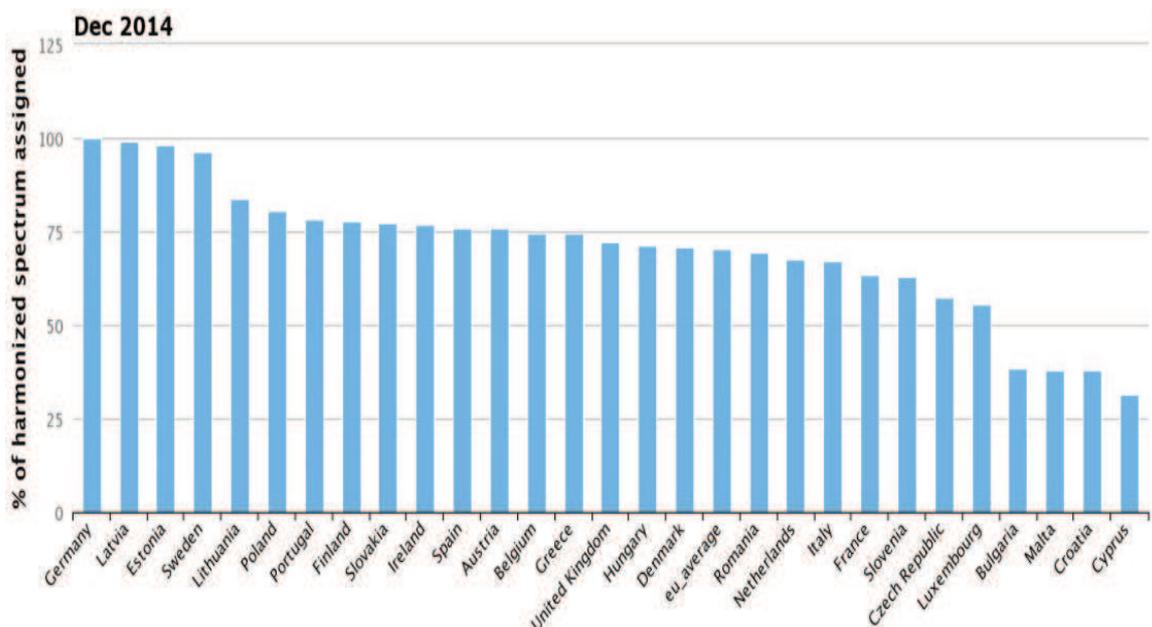
⁶² Bulgaria, due to use by the Ministry of Defence pursuant to Article 1(3) of Decision No 243/2012/EU; Cyprus, due to interference from the territory not under its control (although public consultation on the assignment of the band is expected); Malta, which is implementing an international coordination process with several neighbouring countries; Poland, where the Commission is closely monitoring the developments following the expiry of the deadline.

⁶³ Belgium, Croatia, Italy, Hungary, the United Kingdom.

⁶⁴ Concerning 21 Member States.

⁶⁵ In Belgium, Cyprus, the Czech Republic, Ireland, Italy, Hungary and Latvia.

⁶⁶ In Italy, AGCOM has already launched a public consultation on the assignment rules; in France, these frequencies are likely to be auctioned together with the 700 MHz band later this year.



Multiband auctions are increasingly being used to grant spectrum usage rights for mobile communications services. Between 2010 and 2014, such auctions usually combined the 800 MHz and 2.6 GHz (paired and unpaired) bands⁶⁷, often together with (parts of) the 900 MHz and 1800 MHz bands⁶⁸. Some of the authorisation procedures currently in preparation are likely to see the auctioning of several bands together. This is the case in Germany, France, Ireland and Slovenia.

Currently used for broadcasting in Europe, the 700 MHz band (694-790 MHz) will also be allocated, on a co-primary basis, to international mobile telecommunications (IMT) services immediately after the World Radiocommunication Conference 2015 (WRC-15), where the applicable technical and regulatory conditions will be finalised. The Commission will propose measures to harmonise the technical conditions for wireless broadband use of the 694-790 MHz band at EU level. Many Member States are moving in this direction, although at very different paces⁶⁹. Some Member States have reported difficulties in view of the current duration of licences assigned to broadcasters⁷⁰ or due to cross-border coordination issues with third countries⁷¹, but the Radio Spectrum Policy Group (RSPG) was able to propose ‘making the band available for effective use by ECS by the end of 2020’, with the possibility for some Member States to delay this until 2022 for ‘duly justified reasons’⁷².

⁶⁷ Greece, Luxembourg, the Netherlands and the United Kingdom.

⁶⁸ The Czech Republic, Germany (where the 2.1 GHz band was also included) Greece, Hungary, Italy, Portugal, Romania, Slovenia, Slovakia and Spain.

⁶⁹ France, Estonia, Finland, Sweden, Germany, the Netherlands, Belgium, the Czech Republic, Ireland, Lithuania, Luxembourg, Poland, the United Kingdom, with timescales for assignment ranging from 2015 to 2022.

⁷⁰ Austria, Bulgaria, Cyprus, Croatia, Greece, Italy and Slovakia.

⁷¹ e.g. Latvia, Lithuania and Malta.

⁷² See the ‘[RSPG Opinion on a long-term strategy on the future use of the UHF band \(470-790 MHz\) in the European Union](#)’, of 19 February 2015, where the RSPG also recommends that Member States ‘start,

6. RIGHTS OF WAY AND ACCESS TO PASSIVE INFRASTRUCTURE

Complex, cumbersome and fragmented procedures on this issue were reported in Bulgaria, the Czech Republic and Luxembourg, although measures to address inefficiencies are in the pipeline. In Ireland and the United Kingdom, providers face burdensome negotiations with private landlords, while in Poland, the time it takes to grant permits is being drawn out by an increasing number of court cases.

It usually takes more time to grant a permit for the deployment of mobile networks than for fixed ones, although standardised small antennae are sometimes exempt from the permit granting procedure⁷³. Tacit approval is applied in some Member States countries⁷⁴ mostly with regard to permits for the deployment of fixed networks and, in Portugal and Romania, for rights of way.

Germany, Portugal and Slovenia have well established infrastructure mapping tools, while new mapping projects are being carried out in several Member States⁷⁵, also with a view to implementing some of the tasks intended for the single information points under Directive 2014/61/EU⁷⁶. More generally, Member States are preparing for the transposition of this Directive: public consultations and hearings have been held in Bulgaria, Denmark, France, Slovenia and Sweden, while Italy has already transposed some of the provisions.

NGA wiring is mandatory for new buildings in some Member States⁷⁷. In Germany, buildings may be upgraded with NGA infrastructure without the agreement of the owner, if this does not permanently affect the usability of the premises.

Granting of access to ducts and aerial cables has been quite successful in France (with a significant increase in use of the incumbent's ducts compared with the previous year), in Spain and in Portugal, which was one of the first Member States to impose cross-sector obligations. In Ireland, a new act enabled the monopoly electricity network operator to make its network available to any ECN provider. Overall, symmetric access to passive infrastructures, or some parts of it, is planned in several Member States⁷⁸. Secondary legislation (binding in Greece and non-binding in Belgium) has been issued with regard to active and/or passive infrastructure sharing.

with the support of the Commission if necessary, bilateral negotiations with those countries [non-EU neighbouring countries] as early as possible to reach the necessary cross-border coordination agreements'.

⁷³ Such as in Italy.

⁷⁴ Such as Cyprus, Italy and Greece.

⁷⁵ Such as in Croatia, Cyprus, the Czech Republic, Estonia, Greece, Hungary, Italy, Latvia, Lithuania, Portugal and Sweden.

⁷⁶ Directive 2014/61/EU of the European Parliament and of the Council of 15 May 2014 on measures to reduce the cost of deploying high-speed electronic communications networks, OJ L 155, 23.5.2014, p. 1.

⁷⁷ Austria, Croatia, France, Greece, Portugal, Romania.

⁷⁸ Such as Austria, Croatia, Cyprus, France, Italy, Greece, Hungary, Latvia, Lithuania, Poland, Portugal, Slovenia, Spain, Sweden, the Netherlands.

7. CONSUMER ISSUES

7.1. The European emergency number 112

As reported in the EU Communications Committee (Cocom)⁷⁹, access to 112 for disabled end-users did not improve significantly in the reporting period. 22 Member States reported the implementation of alternative access to 112, up from last year's 21. The take-up of SMS access to 112 remained the same (18 Member States) while three Member States reported that deployment of these kinds of alternative ways of contacting emergency services was ongoing. Member States were encouraged to step up their efforts to provide more accurate caller location as the data gathered by Cocom showed a lack of improvement on this point.⁸⁰

7.2. Number portability

The reported regulatory time at national level is still high in certain Member States⁸¹. With regard to the porting of fixed numbers, the regulatory time is often higher than for mobile⁸².

In relation to wholesale charges for fixed and mobile there are differences in national implementation across the EU. With regard to maximum mobile wholesale prices for porting numbers, some Member States have no charges, other still maintain such charges and in some other Member States they remain particularly high⁸³. Similarly, many Member States have no or very low wholesale charges for the portability of fixed lines, whereas in some others they can be particularly high⁸⁴.

In the context of the review of national portability rules, simplification of procedures and/or in implementing existing number portability rules, some Member States have also adopted measures with regard to the portability of bundled offers of services in view of their growing importance for consumers in the market.

7.3. Contractual obligations

The Universal Service Directive provides that contracts between providers and consumers should not mandate an initial commitment period exceeding 24 months, and ensures that providers offer users the possibility to subscribe to a contract with a maximum duration of 12 months. Some Member States have shorter commitment periods (Belgium, Denmark) or provide the possibility for consumers to terminate the contract at any time subject to prior notice requirements (Malta, Spain). In the Netherlands, national

⁷⁹ <https://ec.europa.eu/digital-agenda/en/news/implementation-european-emergency-number-112-results-eight-data-gathering-round>

⁸⁰ See also the CEPT Electronic Communications Committee (ECC) Report 225 of 22 October 2014: <http://www.erodocdb.dk/Docs/doc98/official/pdf/ECCREP225.PDF>.

⁸¹ 5 days in The Netherlands and Finland.

⁸² Greece (10 days), Italy (8 days) and Cyprus (7 days) having the longest process, in all cases substantially higher than for mobile.

⁸³ Up to 14€ in Latvia and 9€ in Bulgaria, Cyprus and Finland

⁸⁴ Up to 40€ in Finland, 28€ in United Kingdom and 22€ in Austria.

law allows consumers to terminate the contract at any time with a one-month notice period after the contract period has been tacitly extended.

Some Member States have adopted or further clarified detailed rules on consumer protection safeguards in the event of unilateral changes to contract conditions⁸⁵. In some cases, the Commission is looking into this matter. Some Member States, like Portugal, are considering new implementation measures on the transparency of contractual information, with the aim of simplifying information for end-users on contracts and services.

7.4. Other consumer issues

There were developments on transparency, the publication of information on prices and services by providers and the provision of comparable information, as provided for in Article 21 of the Universal Service Directive.

In 2014, some NRAs adopted new transparency rules regarding the publication of information on services and prices by providers (Belgium, Bulgaria; Germany is also considering this). Other NRAs operate an online database on prices and services in cooperation with providers (Hungary). A number of NRAs operate tariffs observatories and interactive guides (e.g. Greece and Romania) or have improved their comparison and simulation tool (e.g. Portugal). Finally, some NRAs have accreditation schemes for tariff calculators available on the market⁸⁶.

In addition, some Member States have implemented measures on the monitoring of expenditure and cost control by consumers (e.g. Austria, the Netherlands) or have adopted measures to ensure equivalence in access and choice of electronic communications services for disabled end-users (Ireland and Slovakia).

8. UNIVERSAL SERVICE

Universal service obligations continue to be reviewed or are subject to public consultation in several Member States in the light of changing market developments⁸⁷. Many Member States do not have universal service obligations in place for services deemed to be satisfactorily provided by the market or available through comparable means. This trend is most visible for comprehensive telephone directories, public payphones and comprehensive directory enquiry services. In 18 Member States⁸⁸ there is no obligation to provide a comprehensive directory enquiry service, while in 14 Member States⁸⁹ there is no obligation to provide a comprehensive telephone directory. There are

⁸⁵ Austria, Cyprus, the Czech Republic, Sweden and the United Kingdom.

⁸⁶ e.g. the Czech Republic, Italy, the United Kingdom.

⁸⁷ Cyprus, France, the Netherlands, Italy, Lithuania and Malta.

⁸⁸ Austria, Belgium, Cyprus, the Czech Republic, Estonia, Finland, France, Germany, Hungary, Italy, Ireland, Luxembourg, Poland, Romania, Slovakia, Spain, Sweden and the Netherlands.

⁸⁹ Belgium, the Czech Republic, Estonia, Finland, France, Germany, Italy, Lithuania, Luxembourg, Poland, Romania, Slovakia, Sweden and the Netherlands.

no universal service obligations on payphones in 12 Member States⁹⁰. Access at a fixed location is provided by the market outside the universal service obligations in eight Member States⁹¹. Special measures for disabled end-users are offered by universal service providers in 13 Member States⁹².

Several Member States have already defined a connection to a network permitting internet access at broadband speeds within the scope of universal service at national level⁹³. Other Member States have started to look at extending the scope of the universal service obligations to include broadband provision of 1 Mbps or higher⁹⁴.

In 2014, new universal service providers were designated in Hungary, Portugal (following a second Court of Justice judgment imposing financial penalties⁹⁵) and Slovenia. In Greece, the NRA initiated a call for expressions of interest to designate a universal service provider in 2014. Overall, where designation procedures have been carried out, most Member States have selected only one universal service provider (12 countries) or two (five countries). Finland has the largest number of designated universal providers, with 10.

As regards the financing of universal service provision, requests for compensation have been received to date in 17 Member States⁹⁶. However, compensation has so far been paid out in only five of those countries⁹⁷ and approval of costing methodologies may take some time⁹⁸. Spain's new 2014 Telecommunications Law also defines a revenue threshold to determine which operators should contribute to the financing of universal service. Malta is currently carrying out a consultation to determine how universal service should be financed. As for Portugal's compensation fund to finance the net costs of universal service obligations, the Commission has raised concerns regarding its implementation and compatibility with the relevant requirements under Directive 2002/22/EC.

In Romania, the NRA has imposed an obligation on operators to create service packages for disabled end-users, comprising recommended bundles and tariffs. In Finland, a government decree ordered that hearing-impaired users and users with speech problems must have access to an SMS service for emergency services via the universal service

⁹⁰ Belgium, Cyprus, Denmark, Estonia, Finland, Germany, Latvia, Luxembourg, Poland, Romania, Slovakia and the Netherlands.

⁹¹ The Czech Republic, Denmark, Estonia, Luxembourg, Poland, Romania, Slovakia, Sweden.

⁹² Belgium, Bulgaria, the Czech Republic, Finland, France, Greece, Latvia, Malta, Portugal, Slovakia, Slovenia, Spain and the United Kingdom.

⁹³ Belgium, Croatia, Finland, Spain and Sweden (1Mbps), Malta (2Mbps), Latvia (disabled end-users only).

⁹⁴ Latvia, Slovenia and the United Kingdom.

⁹⁵ C-76/13.

⁹⁶ Belgium, Croatia, Cyprus, the Czech Republic, Denmark, France, Greece, Hungary, Ireland, Italy, Latvia, Malta, Poland, Portugal, Slovakia, Spain and the United Kingdom.

⁹⁷ The Czech Republic, Denmark, France, Latvia and Spain. In Cyprus, the universal service provider's request to calculate the unfair burden of providing universal service obligations in 2012 was rejected.

⁹⁸ In 2014, costs for universal service provision were approved in Portugal for 2007-2011 and in Spain for 2011, whereas a new methodology is being developed for 2012. In Italy, judicial annulments slowed down the approval process.

obligations. Designated universal service providers must also provide visually-impaired users with accessible invoices.

9. NET NEUTRALITY

9.1. Legislative situation

In 2013, the European Commission made a proposal to ensure open internet across the European Union⁹⁹. In the meantime, Member States continue to follow differing approaches on net neutrality, ranging from self-regulation to binding legislation.

Denmark, Hungary, Sweden and the United Kingdom rely on self-regulatory initiatives to ensure net neutrality. Austria, the Czech Republic, France and the United Kingdom have issued guidance on net neutrality. In Romania, the NRA has completed a public consultation on transparency obligations, which includes obligations on net neutrality. A decision based on this consultation is expected to come into force in the first half of 2015. Legally binding measures are in place in the Netherlands and Slovenia, while Finland has adopted an ‘Information Society Code’ which will come into force on 1 July 2015. The code prohibits internet service providers from restricting a user’s ability to use an internet service, except in a limited number of cases.

In 2014, the NRAs in Slovenia and the Netherlands started supervision procedures against mobile operators for alleged infringement of the net neutrality rules currently in place. The alleged infringements included provision of ‘zero-rating services’, i.e. commercial offers where data consumption for certain online applications or services is not charged or counted against the data allowance under the contract. The Dutch Ministry of Economic Affairs is planning to issue policy guidelines to clarify the national provisions, while some operators are pushing for clarity at EU level to reduce the impact of disparities in rules on net neutrality.

9.2. Quality of service

Quality of services measurement tools are available to end-users or are being implemented in several Member States¹⁰⁰. These are in addition to the NRAs’ monitoring activities.

Finally, the BEREC work programme for 2015 includes the possibility for a joint investigation with the Commission into traffic management practices so as to provide updated data and identify evolving practices more accurately.

⁹⁹ Proposal for a Regulation of the European Parliament and of the Council laying down measures concerning the European single market for electronic communications and to achieve a Connected Continent, COM(2013) 627.

¹⁰⁰ Such as in Austria, Croatia, Cyprus, Denmark, Italy, Latvia, Lithuania, Greece, Portugal, Romania, Spain, Sweden.

Austria

1. MARKET DEVELOPMENTS

Broadband indicators (December 2014)¹	AT 2013	AT 2014	EU 2013	EU 2014
Fixed broadband coverage ²	99%	99%	97%	97%
NGA coverage ²	70%	88%	62%	68%
Fixed broadband take-up ²	59%	64%	69%	70%
Share of >30 Mbps subscriptions ³	16%	20%	21%	26%
Share of >100 Mbps subscriptions ³	2%	3%	5%	9%
Share of DSL in fixed broadband ³	67%	66%	73%	70%
Incumbent market share fixed broadband ⁴	58%	58%	42%	41%
HSPA Mobile broadband coverage ²	98%	98%	97%	97%
LTE Mobile broadband coverage ²	35%	60%	59%	79%
Mobile broadband penetration ⁵	64%	67%	64%	72%
Market share of leading mobile network operator ⁴	43%	42%	35%	35%

The Austrian telecommunication market is characterised by price-driven competition and a prominent role of mobile services — both in terms of voice and broadband markets — as evidenced by a mobile market share of over 85 % within voice services and a mobile substitution recognised in market analysis procedures on the retail broadband market, given its deregulation. Nevertheless, there appears to be a slight rebound in the 2014 price trends as the NRA and consumer organisations reported considerable increases for certain products, and acquisitions affected market dynamics. The incumbent A1 Telekom Austria maintains a strong position in all market segments and is also active abroad through its subsidiaries in Eastern Europe. In the course of 2014, America Móvil acquired a 59.7 % majority stake in A1 Telekom Austria, following its initial acquisition in 2012, while the Federal State retained a blocking minority of 28.4 %. In the mobile

¹ Sources: coverage data — studies by IHS and VVA; penetration data — figures provided by Austria to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe (except fixed broadband take-up, provided by Eurostat).

² % of households.

³ % of fixed broadband subscriptions.

⁴ % of subscriptions.

⁵ Subscriptions per 100 inhabitants.

markets, after acquiring Orange Austria, Hutchison (Drei) is catching up on the second player T-Mobile Austria, and in fixed markets, cable and regional infrastructure operators are upgrading their next generation networks. Nevertheless, A1 Telekom Austria remains the sole operator to offer full bundle packages relying on own infrastructure.

While the market share in fixed broadband of the incumbent increased slightly throughout 2013, from 57 % in January 2013 to 58 % in January 2014 it remained constant as of December 2014. Nevertheless, this is well above the EU average of (42 %). In the fixed voice market, the incumbent remains the leading operator although its market share for all types of calls by traffic volume has decreased from 54 % in December 2012 to 46 % in 2013, but increased to 53 % in December 2014. The (77 %) share of LLU among new entrant DSL providers is above the EU average (75 %), but alternative operators are losing ground to the incumbent, that continues to hold a strong market position and is increasingly emphasising its wholesale virtual unbundling access products. The share of cable operators is constant (31 % as of January 2013, January 2014 as well as January 2015). Telecommunication operators are also facing increasing competition in certain regions from regional electricity providers that are actively participating in the broadband market, and are beneficiaries of the national broadband subsidy schemes. In the cable market, the largest cable operator UPC continues the consolidation of smaller cable operators.

In view of the strong mobile substitution, (64.7 % mobile broadband penetration is above the EU average of 61.1 %), and the acquisition of the fourth operator by the third player (Hutchison Drei), the market share in broadband of the incumbent's mobile branch grew over the past years considerably, by 3 % points in 2013 and 1 % points in 2014, with a reported market share of the mobile branch of 43 % as of December 2014, while the market share of its main competitor T-Mobile Austria remained constant (31 %), and Hutchison (Drei) grew slightly%.

The structure of the Austrian mobile market has been considerably reshaped in 2014 following the acquisition of the third player Orange initiated in 2012 by the fourth operator Drei (the Austrian subsidiary of Hutchison). The merger was approved⁶ subject to structural and behavioural remedies, including the obligation to enter into MVNO agreements based on a reference offer, and to make wholesale access to a certain part of the network available for MVNOs during 10 years as well as to divest certain spectrum. Following the results of the auction, an appeal by T-Mobile Austria (for acknowledging its party status in the procedure and granting access to files) has been referred to the European Court of Justice. The court gave its judgment in the preliminary ruling case C-282/13 in January 2015, and recognised the status of T-Mobile in the procedure in question.

The market restructuring considerably delayed the multiband mobile frequency auctions originally planned for 2012 to be in line with EU requirements, but only carried out in 2013 in accordance with the derogation granted by the Commission. The Austrian Administrative Court (VwGH), in its ruling of 4 December 2014 confirmed the results of the multiband auction.

⁶ Case nr M.6497, Commission decision of 12 December 2012, C(2012) 9198final.

Following the completion of the merger the NRA and the consumer protection body has been closely monitoring price developments, and in 2014 an increase in prices has been reported. Thus, following consolidation in the Austrian mobile market, there are at present three mobile operators, and as a result of recent market remedies, UPC entered the market as MVNO in 2014 relying on Hutchison's wholesale offer. In January 2015 Hofer Telekom (HoT) entered the market for voice, SMS and data services with competitive offers, using T-Mobile networks via the mobile virtual network enabler (MVNE) Ventocom as a service provider. Ventocom started its operations in 2014, and aim at providing wholesale services to MVNOs. Concerning network sharing, Hutchison Drei and T-Mobile entered into a 2G/3G sharing agreement that entered into force in 2012.

2. MARKET REGULATION

2.1. Market analysis

On 7 May 2014, the Telekom-Control-Kommission (TKK, see below at section 4.1.) notified to the Commission a draft measure its market analysis of the market for wholesale terminating segments of leased lines (ex-market 2)⁷ and on 3 June 2014, two draft measures concerning the markets for call termination on individual public telephone networks provided at a fixed location⁸ and voice call termination in individual mobile networks⁹ were notified.

By 2015, the Telekom-Control-Kommission has concluded the fourth round of market analysis. In particular, the board of the NRA has taken decisions on terminating segments of leased lines, retail leased lines, access to the telephone network and follow-up decisions on both fixed and mobile termination rates (for new telecom providers).

On 25 June 2013, the NRA notified draft measures concerning the markets for wholesale (physical) network infrastructure access (ex-market 4) and wholesale broadband access (ex-market 5). The Commission expressed serious doubts as to the compatibility of the proposed measures with EU law, since the proposed wholesale price did not allow the SMP operator A1 Telekom Austria to receive a reasonable rate of return, and the proposed price regulation would in the Commission's view be detrimental to investment incentives and create barriers to the single market.

Since the NRA did not amend or withdraw its draft measure by 25 October 2013, the Commission adopted an Article 7a Recommendation on 22 November 2013. On 16 December 2013, TKK adopted the previously notified draft measures, not following the Recommendation, but including additional justification in accordance with Article 7a(7) of the Framework Directive. In order to ensure a consistent application of the Framework on appropriate and proportionate price control remedies, the Commission services are following up on this matter with Austria.

⁷ Corresponding to Market 6 in Commission Recommendation 2007/879/EC.

⁸ Corresponding to Market 1 in Commission Recommendation 2014/710/EU.

⁹ Corresponding to Market 2 in Commission Recommendation 2014/710/EU.

2.2. Access and interconnection

IP-based interconnection agreements have been reached by several operators on the basis of civil law. Regulatory measures on SMP operators impose specific obligations to interconnect with IP-based operators to ensure technological neutrality. In February 2014, A1 Telekom Austria was among the first fixed operators in the EU to carry out the complete migration to an all-IP based network.

3. BROADBAND PLANS AND FINANCING

Austria's broadband strategy 2020 was adopted in November 2012. The main focuses include the deployment of broadband in rural areas but also in urban regions¹⁰. Austria's initiative 'Zwanzigdreizehn' is supported by federal, state and EU funding programmes that aim to stimulate competition for the expansion of broadband infrastructure in rural areas. The closure of the last 'white spots' with broadband infrastructure and in particular the establishment of NGA infrastructures is to enable the rapid spread of ultra-fast broadband services, which demonstrates an impetus for growth in rural areas. The government initially announced its plans to make half of the revenue from the 2014 multiband frequency auction available for NGN deployment in rural areas. Following the outcome of the auction, this has commonly been referred to as the 'broadband billion'. Following the confirmation of the auction results by the rejections of appeals before the courts, as of March 2015, the government has confirmed its commitment to dedicate half of the auction revenue to broadband development. Since its establishment in November 2012, the broadband office of the Ministry for Transport, Innovation and Technology (BMVIT) has played a central role in broadband development. The Office also acts as a focal point and competence centre, developing the broadband strategy and disseminating best practices to stakeholders, such as preparing guidelines for local governments on town planning.

4. INSTITUTIONAL ISSUES

4.1. The National Regulatory Authority

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

	2014
Personnel ¹¹	99 FTE
Increase	-2 %
Budget	€ 12.6 million

¹⁰For further information please see:

<http://www.bmvit.gv.at/telekommunikation/breitbandstrategie/foerderungen/archiv/bba2013.html>.

¹¹ Number of staff in full time equivalents (fte), The resources of the national regulatory authority (FTEs and budget) refer to RTR and cover telecom-, postal- and media-regulations, overhead/service is included.

Increase	-0.05 %
Administrative charges ¹²	€ [...] million
Administrative costs ¹³	€ [...] million

KommAustria and TKK are independent bodies vested with the main regulatory tasks. The TKK consists of three members and three alternates who are appointed by the federal government on a proposal submitted by the Supreme Court and the BMVIT. The current members and their alternates of the TKK have been appointed in October 2012 for a five-year term. In May 2013, a new managing director was appointed to RTR (Telecommunications and Postal Service Division) and started a new term in February 2014.

The Regulatory Authority for Broadcasting and Telecommunications (RTR) is funded from various sources depending on its areas of activity. On the one hand, market participants are required by law to provide partial financing for the authority, and on the other hand the authority is supported with funds from the Austrian federal government. Regulatory activities are financed by the markets as well as federal funding. The Telecommunications Division receives EUR 2 million in federal funds per year, and parties subject to the financing contribution requirement provide additional financing of up to EUR 6 million to cover that division's expenses. From 2007 onward, federal funding has been adjusted annually to reflect the development of the consumer price index.

RTR is a federal body and is accountable to the TKK. TKK and RTR report annually on their activities in a joint activity report (communications report¹⁴). The report is submitted to the Federal Chancellor and to BMVIT by 30 June each year. For matters falling within the responsibility of the BMVIT, the Federal Chancellor, by agreement with the Federal Minister, submits the report to the *Nationalrat* (National Council).

The main regulatory decisions regarding telecom matters are taken by TKK, which is a judicial independent body whose decisions can only be reviewed by the courts. Until the end of 2013, regulatory decisions could be challenged before the Administrative Court (*Verwaltungsgerichtshof*, VwGH) as well as the Constitutional Court (*Verfassungsgerichtshof*, VfGH). Since January 2014 decisions can be appealed before the newly created Federal Administrative Court (*Bundesverwaltungsgericht*).

4.2. Authorisation and licences

Coverage obligations for rural areas are included in the 800 MHz licences. The existing assignments in the 900 MHz and 1800 MHz bands have been liberalised in accordance with EU law. A refarming process for the assignments in the 2100 MHz band has been formerly launched, and is currently ongoing. In general, spectrum for mobile operators is tradable in Austria. Within three years from the entry into force of the licences, operators shall cover at least 25 % of the population using only frequencies in the 800 MHz band and 95 % of the population using any assigned frequency. Specific obligations apply for the coverage of rural areas., i.e. are technology and service neutral.

¹² In the sense of Art. 12 of the Authorisation Directive (Directive 2002/20/EC as amended by Directive 2009/140/EC).

¹³ Idem.

¹⁴ https://www.rtr.at/en/komp/KBericht2013/32194_C-Report_2013.pdf.

5. SPECTRUM MANAGEMENT

While Austria was among the Member States with the earliest implementation of the analogue switch-off (which took place on 7 June 2011), the completion of the assignments of the digital dividend suffered delays due to market restructuring (the takeover of Orange Austria by Hutchison Drei). Therefore, Austria filed a request for derogation from the application of Article 6(4) RSP, which was granted until 30 September 2013.

Accordingly, in 2013, Austria held a multiband spectrum auction for 800/900/1800 MHz frequencies that raised 2 billion euros for the general budget. In this auction, A1 Telekom Austria acquired half of the 28 available frequency blocks (2x70 MHz) for 1.03 billion euros, T-Mobile Austria acquired nine packages (2x45 MHz), and Hutchison Drei Austria acquired the remaining five (2x25 MHz). Hutchison and T-Mobile Austria introduced legal action against the frequency assignment before the Administrative Court as well as the Constitutional Court with the aim of annulling the assignments. In 2014 the cases were settled by the courts that upheld the decision. Following the auction, a refarming/reshuffling of frequencies had to be implemented to ensure optimal use. As of 2015, the use of the 3.4 – 3.6 GHz band remained marginal, this spectrum is used mainly by local providers in Austria relying on WiMax technology.

The 700 MHz band is currently used for broadcasting by ORF offering free and pay TV digital packages, and services using DVBT-2 have started in 2013.

6. RIGHTS OF WAY AND ACCESS TO PASSIVE INFRASTRUCTURE

The procedures for granting rights of way were amended by the revised Austrian Telecommunications Act in 2011. Transparency regarding the procedures for granting rights of way is ensured, through their publication. Electronic submission of requests is not available. No discriminatory treatment between operators in granting of rights of way, or abusive conditions was reported by the operators. Average time to receive a permit (decision of the NRA) for the deployment of infrastructure is approximately 14 weeks. There was one appeal to the Austrian Administrative Court in the area of rights of way in 2014. The NRA has developed a passive infrastructure mapping covering infrastructure for telecommunications purposes (e.g. telecom infrastructure, utilities infrastructure). NGA wiring is not mandatory for new buildings. Access to telecom passive infrastructure in Austria is mandated both on an asymmetric and symmetric basis. Symmetric access concerns all/parts of the infrastructure and in particular in-house, drop segment, backhaul, backbone. Access to other utilities infrastructure, usable for telecommunications purposes, is provided.

Coordination of civil infrastructure works is ensured by A1 Telekom Austria. Planned investments in networks have to be communicated four months in advance by A1 Telekom Austria and interest in co-deployment must be manifested within six weeks.

7. CONSUMER ISSUES

The Austrian chamber of labour (*Arbeiterkammer*) is a statutory body to represent employees and has extensive competence in the field of consumer protection. In particular, it is consulted on new legislative measures in Austria, and is a member of the

European Economic and Social Committee, at European level. It also analyses market trends and provides services for consumers, such as price comparison tools.

7.1. The European emergency number 112

The European emergency number 112 can be called from both fixed and mobile telephones. Caller location information is provided for all calls, upon request ('pull-system'), and disabled users can access emergency services via SMS-to-Fax transmission to a non-emergency number (0800-133-133). Legacy national emergency numbers exist in Austria, and there are no caller location accuracy and reliability criteria in the national rules. The location information for calls originating from a mobile network can be requested using an electronic interface, an equivalent access solution for fixed network is still being developed.

7.2. Number portability

Number portability (October 2014) ¹⁵		2013	2014
Fixed	Number of transactions	-	-
	% of total numbers	-	-
	Maximum wholesale price	21.8	21.8
	Maximum time under regulation (number of working days)	-	-
Mobile	Number of transactions	185,229	-
	% of total numbers	-	-
	Maximum wholesale price	8.2	8.2
	Maximum time under regulation (number of working days)	-	-

In Austria, the procedures regarding the implementation of the one-day mobile number portability provide for a timeframe up to one day without service. The one-day rule is not applicable from the moment the agreement is signed between the user and the recipient operator, but refers to the time allowed for the interruption of service. Since 1 July 2012, an implementing ordinance forbade the earlier practice that calls to ported numbers must be preceded by recorded free of charge warning advising the caller of the network. However, upon explicit request by the subscriber, an opt-in for this this announcement is still available to subscribers.

7.3. Contractual obligations

Changes in general terms and conditions as well as in tariffs shall be notified to the regulatory authority before they take effect and shall be promulgated in an appropriate form. Changes that are not exclusively favourable for the subscriber shall be subject to a promulgation and notification period of two months. The communication ordinance (*Mitteilungsverordnung*) of 2012 provides for detailed content and formatting

¹⁵ Source: figures provided by Austria to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe.

requirements of the communications to subscribers to ensure that subscribers are informed about the proposed contract changes in a transparent way.

7.4. Other consumer issues

The Chamber of Labour operates a detailed price and service comparison tool¹⁶. Article 25a (1) TKG authorises the regulatory authority to issue ordinances requiring operators to enable subscribers to review their current costs. In line with this article, RTR adopted an ordinance on cost limitation that entered into force in 2012. When (over)charges of EUR 60 are reached, the operator has three options: either block the subscriber from using data services for the rest of the billing period or provide further use free of charge, either with or without limiting bandwidth to at least 128 kbps. The ordinance additionally requires operators to notify subscribers before the contractual data volume is exceeded or as soon as EUR 30 in additional charges has been incurred.

RTR offers also a conciliation procedure related to consumer complaints. In 2014 RTR noticed a significant increase of complaints (2013: 2859 procedures, 2014: 3879 procedures) mainly caused by ‘third party billing/wap-billing’. Despite ‘normal’ premium rate services (addressed by a telephone number), RTR has no legal power to regulate these services.

8. UNIVERSAL SERVICE

The scope of universal service obligations is determined through secondary legislation on the basis of the Telecommunications Act (TKG 2003). The following services are included in the scope of universal service in Austria: functional internet connection, telephony services, public pay telephones and directories (directory enquiry services are no longer included).

Currently, A1 Telekom Austria is the designated universal service provider for an undefined period through a tender procedure for the provision of the universal service at national level.

As in previous years, the financing of universal service was not based on the funding mechanism laid down in the Telecommunications Act, and also in 2014, operators continued to agree among themselves on compensation for the universal service provider.

9. NET NEUTRALITY

9.1. Legislative situation

The EU provisions on net neutrality (including Article 22(3) USD) were implemented in Austria via amending the Telecommunications Act 2003. In particular Article 17(3) enables the regulatory authority to issue an ordinance imposing minimum quality of service requirements on operators of public communications networks, in particular in order to prevent a degradation of service and a hindering or slowing down of traffic over networks. In issuing this ordinance, the regulatory authority shall account in particular for the technological state of the art and economic conditions.

¹⁶ <http://internetprovider.arbeiterkammer.at/tarifrechener/index.asp?rechener=internet>.

In May 2013 RTR published a position paper on net neutrality¹⁷, describing the regulatory authority's view on the subject. In autumn 2014, RTR organised a big public event on Net Neutrality with international experts¹⁸. In 2011 the Internet Service Provider UPC was required by an Austrian Trade Court to block an Internet portal that was offering video content without a legal basis and to make it inaccessible to its customers. Following a reference for a preliminary ruling from the Austrian Supreme Court in the above-mentioned case, in March 2014, the European Court of Justice delivered a judgment in Case C-314/12. In its judgment, the Court of Justice clarified the validity and conditionality of court orders, in particular, it held that the fundamental rights concerned do not preclude an injunction, on two conditions: (i) that the measures not unnecessarily deprive the possibility of lawfully accessing the information available and (ii) that those measures have the effect of preventing or discouraging unauthorised access to the protected subject matter. The Court also stated that internet users and also ISPs must be able to assert their rights before the court.

9.2. Quality of service

The Austrian Telecommunications Acts vests in the BMVIT the tasks of specifying detailed provisions relating *inter alia* to the form, content and the parameters of quality of service as stipulated in the Telecommunications Act. The Telecommunications Act also enables RTR to adopt regulations imposing minimum quality of service requirements on operators of public communications networks.

RTR is providing an independent QoS-measurement tool 'RTR-NetTest'¹⁹, for applications (Android and iOS) as well as for the Web-Browser; RTR's NetTest is available in German as well as in English. The RTR-NetTest gives users information about the current service quality of their internet connection (including upload, download, ping, signal strength) and undertakes also additional quality of service parameters (such as unmodified content, reference webpage, transparent connection, DNS, TCP-ports, UDP-ports). The test is based on the open data and open source principle and enables the interested users to actively test their internet connection.

Some mobile operators apply a policy on their subscriptions to reduce speed considerably after a certain amount of data are consumed. Due to the fact that many consumers exceeded their contractually agreed data volume and as a consequence additional (often high) costs arose, many operators set this safeguarding measure. In addition, the Cost-Limitation Ordinance of RTR (*Kostenbeschränkungsverordnung*) foresees different safeguarding possibilities (information on the use) and provides operators with three options when a certain amount is reached: either block the data services for the rest of the billing period or provide further use free of charge, either with or without limiting bandwidth to at least 128 kbps.

¹⁷ <https://www.rtr.at/nn>.

¹⁸ <https://www.rtr.at/en/komp/Netzneutralitaet14102014>.

¹⁹ www.nettest.at

Belgium

1. MARKET DEVELOPMENTS

Broadband indicators (December 2014)¹	BE 2013	BE 2014	EU 2013	EU 2014
Fixed broadband coverage ²	100%	100%	97%	97%
NGA coverage ²	98%	99%	62%	68%
Fixed broadband take-up ²	78%	81%	69%	70%
Share of >30 Mbps subscriptions ³	73%	74%	21%	26%
Share of >100 Mbps subscriptions ³	13%	14%	5%	9%
Share of DSL in fixed broadband ³	49%	48%	73%	70%
Incumbent market share fixed broadband ⁴	43%	44%	42%	41%
HSPA Mobile broadband coverage ²	99%	98%	97%	97%
LTE Mobile broadband coverage ²	46%	68%	59%	79%
Mobile broadband penetration ⁵	51%	57%	64%	72%
Market share of leading mobile network operator ⁴	-	-	35%	35%

The value of the Belgian market for electronic communications including broadcasting subscription revenues in 2014 was € 8.1 billion compared with € 8.4 billion in 2013. The sector thus did not benefit from the overall improved development of the domestic economy, which was estimated to have grown by 1.0 % relative to 2013. Operators continued significant infrastructural investment, notably as 4G services were brought to market, with overall investment amounting to 21.1 % of electronic communications turnover, a 1.3 percentage point increase above 2013. In 2014 alternative operators' outspent the incumbent in terms of total investment realised, contributing €0.76 billion of the sector's total realised investment of € 1.48 bn. Price increases in the sector overall remained below inflation.

¹ Sources: coverage data — studies by IHS and VVA; penetration data — figures provided by Belgium to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe (except fixed broadband take-up, provided by Eurostat).

² % of households.

³ % of fixed broadband subscriptions.

⁴ % of subscriptions.

⁵ Subscriptions per 100 inhabitants.

In the fixed market, bundled offers in 2014 reached a penetration of 68.4 % in terms of population. Residential bundles with a mobile component accounted for 74.6 % thereof in 2014. The importance of content in the bundles market remained high. One year after Mobistar withdrew its satellite television package from the market, Base announced at the end of 2014 that it would terminate its Snow tripe-play package by July 2015. Access obligations imposed on cable operators did not lead to the commercial launch of a new alternative offer in 2014. Incumbent Belgacom who rebranded its offers under the Proximus brand in September 2014 announced on the same occasion its cooperation with subscription video-on-demand provider Netflix as part of its Proximus TV offer. This became effectively available in December 2014, shortly after cable operator Telenet had announced an extension of its exclusive collaboration with HBO. Simultaneously, connectivity improvements shaped competitive dynamics in the sector: Belgacom, who started vectoring in February 2014, reported in January 2015 deployment on 10 m subscriber lines, aiming to deliver nationwide download speeds of 70 Mbps by 2016. Cable operator Telenet increased down- and upload speeds in June 2014 before announcing a project in August 2014 to achieve the first regional network in the EU offering at least 1 Gbps download speeds by 2020.

In the mobile communications sector, 2014 was under the sign of 4G with all mobile network operators (MNOs) offering coverage to their entire customer base: Proximus in January 2014, followed by alternative operators Mobistar and Base Company in the first quarter of 2014. Both alternative MNOs conducted tests of LTE-Advanced in 2014. A benchmark study by the regulator demonstrated that these developments did not yet lead to pricing models conducive to heavy mobile data use. The possible emergence of a fourth MNO came to a halt in 2014 with Telenet Tecteo BidCo returning its 3G licence. The market for mobile virtual network operators (MVNOs) in Belgium grew, with the number of customers at the end of 2014 being equal to 2.62 m, 3.8 % above the corresponding value in 2013. The number of active MVNOs stabilised at 35 operators. While cable operators Telenet and Voo continued their collaboration as MVNOs with Mobistar, Numéricable switched provision of its mobile services to the Base network. Mobistar launched customer trials of its cable-based television and Internet services in the Charleroi region in December 2014.

2. MARKET REGULATION

2.1. Market analysis⁶

On 4 July 2014, the Commission registered a short notification from the national regulatory authority, the BIPT (see section 4.1 below), of a modification of remedies on the wholesale market for terminating segments of leased lines in Belgium. This concerned non-price related modifications to the SMP operator's reference offer for terminating segments of leased lines which the BIPT considered necessary for the implementation of previously imposed remedies. The Commission did not comment on these modifications. On 2 February 2015, the BIPT notified further modifications on the related new market for wholesale high-quality access provided at a fixed location in Belgium (Market 4/2014). This new addendum to the reference offer concerned leased

⁶ For developments before July 2014, see the 2013 country report, SWD(2014) 249, 14.7.2014, p. 33 et seq.

lines' fibre services and in particular the structural and architectural (as opposed to procedural) aspects needed to implement the access to manholes imposed as an access obligation in order to enable alternative operators to connect their fibre to the network of the SMP operator. The addendum that is to become operational by 1 July 2015 at the latest did not receive any comments from the Commission.

On 11 August 2014, the Commission registered a notification from the BIPT concerning the retail markets for publicly available telephone services provided at a fixed location for residential and non-residential customers in Belgium. Following its previous reviews of these markets in 2008, when the regulator had held Belgacom to hold significant market power and imposed transparency and retail price control obligations, the regulator found that both markets now tended towards effective competition and, for this reason, proposed to rescind regulation. The Commission issued a no comments letter on this proposal.

On 13 November 2014, the Commission registered a notification from the BIPT concerning the market for wholesale central access provided at a fixed location for mass-market products in Belgium and, in particular, provisions concerning wholesale multicast and Ethernet transport for bitstream services. This decision concerned the pricing elements of Belgacom's reference offer. By way of the draft measure, the BIPT proposed to set the cost-oriented prices of the different elements necessary for the provision of the wholesale multicast services as well as to modify the prices of Ethernet transport ADSL/SDSL for bitstream access and wholesale broadband access (WBA) VDSL2 offers, which had initially been approved in 2010. The Commission did not issue any comments on this notification.

On 28 January 2015, the Commission registered a notification from the BIPT concerning the estimation of the weighted average cost of capital (WACC) for fixed and mobile network operators during the period 2015-2017. The estimates were to be used in the setting of wholesale charges in forthcoming price control decisions in a number of markets. The pre-tax nominal WACC for both fixed and mobile operators was set uniformly at 8.13 % (after deductions for notional interests). On this basis, the price ceilings for the wholesale multicast and Ethernet transport services for the ADSL/SDSL bitstream access and WBA VDSL2 wholesale offers were amended to make them consistent with the new WACC for fixed services. The change in the WACC reduced the price ceilings on the main wholesale services by around 0.5-1.4 % depending on the specific service. The Commission issued a no comments letter on the estimate.

On 20 February 2015, the Commission registered a notification from the BIPT concerning a next generation leased line (NGLL) pricing addendum to the incumbent's reference offer for wholesale high-quality access at a fixed location. The changes concerned an alignment of the NGLL transportation tariff with the Ethernet transport rates for bitstream services, notified on 28 January 2015), as well as technical modifications such as increasing the connection of the aggregation points of alternative operators to 10 Gbps. The Commission did not issue any comments on this notification.

Regarding the implementation of the Recommendation on MTRs, the BIPT decision adopted on 29 June 2010 was challenged before the Brussels Court of Appeal which asked a preliminary question to the Constitutional Court, which rendered its judgment on 30 May 2013. By judgment of 24 September 2014, the Court of Appeal annulled the decision on procedural grounds, but maintained its effects until 30 June 2015.

Although the BIPT introduced access obligations on cable operators in July 2011 in the context of its analysis of the retail broadcasting market, no commercial offering based on the exploitation of these obligations has materialised so far, but friendly user tests are ongoing. Operators express concern about both the technical complexity involved in developing such access and about its commercial viability in the current regulatory environment. The fact that a decision on the technical reference offer took more than two years to establish, and the wholesale pricing decision almost 2.5 years, is considered as having impeded market development. A judgment by the Brussels Court of Appeal of November 2014, which struck down provisions in the original market analysis decision that had barred the incumbent from requesting access to one of the cable operators' networks, is expected to create a new urgency for addressing these issues. Appeals from the other cable operators are still pending. In its 2015 work plan, the BIPT has foreseen a revision of the wholesale tariffs for cable access as well as a revision of the reference offer for cable access.

On 3 December 2014, the Brussels Court of Appeal overturned the CRC decision of 1 July 2011 regarding wholesale local access and wholesale broadband access since the absence of an analysis of a notional wholesale broadband market on cable made it impossible to assess the proportionality of the obligations imposed on the incumbent. The CRC adopted a decision providing the additional motivation required by the Court on 18 December 2014.

2.2. Access and interconnection

While all interconnection agreements must be notified to the BIPT, the regulator has no active monitoring obligation regarding their implementation.

As regards the transition to all-IP architecture in the context of the development of next generation networks (NGNs), no consensus on timing, interconnection modalities and operational implications has yet been established among operators. The regulator is monitoring the process in order to ensure adequate transparency, notably regarding developments of the incumbent's network, and considers reactivating its Interconnection Working Group with the participation of alternative operators and the incumbent in 2015. Between spring 2014 and spring 2015, no issues concerning IP interconnection between OTT players and network operators were reported.

In May 2014 the BIPT imposed a fine of € 403 000 on the incumbent for violation of its transparency obligations in respect of its reference offer for wholesale broadband access VDSL2. The operator has appealed the decision.

3. BROADBAND PLANS AND FINANCING

In February 2014, Belgium published a draft of a *National Ultra-Broadband Programme in Belgium*⁷ for public consultation. In November 2014, the newly appointed Minister for the Digital Agenda, Telecommunications and Postal Services announced plans for a *Digital Agenda for Belgium* that would lead to an action plan furthering digitisation. This included a target of realising Internet access of above 100 Mbps and up to 1 Gbps for at

⁷ *Plan national de déploiement du réseau internet haut et très haut débit / Nationaal plan voor de invoering van een netwerk voor snel en ultrasnel internet.*

least 50 % of Belgian households by 2020. In March 2015, the Telecommunications Advisory Committee presented its opinion on the announced initiatives. The Government is expected to prepare a revised version before submitting it for agreement to the regional bodies. The action plan *Digital Belgium* (www.digitalbelgium.be) was launched on 20 April 2015.

Belgium has not notified any state aid measures to promote broadband roll-out, but the regulator has submitted an application for CEF funding in order to improve broadband coverage in white spots.

In April 2014, the BIPT launched a broadband mapping project that will investigate broadband coverage and quality of service in mobile and fixed networks. The project is expected to finish in June 2015 for mobile networks and in late 2015 for fixed networks with the publication of an online mapping tool available from the regulator's website.

The transposition of the Cost Reduction Directive has been identified as a political priority at federal level requiring institutional collaboration between all levels of government. As no concrete timetable has yet been agreed, meeting the transposition deadline of 1 January 2016 may become a challenge. At present, neither fibre nor NGA wiring is mandatory in new buildings.

4. INSTITUTIONAL ISSUES

4.1. The National Regulatory Authority

The *Institut Belge des Services Postaux et des Télécommunications* (Belgian Institute of Postal Services and Telecommunications, IBPT/BIPT)⁸ is a multi-sector regulator vested with all of the tasks that the regulatory framework assigns to national regulatory authorities. It also regulates audiovisual media in the capital region that cannot exclusively be attributed to one of the language communities and shares with the latter's regulatory authorities' competence for spectrum matters.

	2014
Personnel ⁹	209
Increase	- 0.90 %
Budget	€ 22.7 Million
Increase	+ 3.65 %
Income ¹⁰	€ 62.80 Million
Administrative costs ¹¹	€ 46.46 Million

⁸ *Belgisch Instituut voor postdiensten en telecommunicatie — Institut belges des services postaux et des télécommunications* has been established by Article 13 of the *loi du 17 janvier 2003 relative au statut du régulateur des secteurs des postes et des télécommunications belges — wet van 17 januari 2003 met betrekking tot het statuut van de regulator van de Belgische post- en telecommunicatiesector*.

⁹ Number of staff in full time equivalents (FTE).

¹⁰ In addition to administrative charges in the sense of Art. 12 of the Authorisation Directive (Directive 2002/20/EC as amended by Directive 2009/140/EC), the reported figures for IBPT include all charges for public licence fees, licence and fees for private radio communications, post, services performed to third parties.

¹¹ *Idem*. The costs include all costs, transfers and staff.

The Board, including the Chair, is made up of four members who are appointed by the King. Their mandate lasts six years and is renewable once; the conditions for their dismissal are laid down by statutory instrument. In 2014, the BIPT Chair was also Vice-Chair of BEREC. Staff count further decreased in 2014, returning to the lowest value in the past decade, equivalent to 2006 levels, due to a recruitment stop decided by the former federal government, although the number of academically qualified staff continued to increase. The BIPT is accountable to the Belgian Parliament and its draft budget is approved by the Ministers of Budget and Finance.

The BIPT is funded without direct government contributions. Its resources derive primarily from public licence fees (59 %) and licence and monitoring fees for private radio communications (36 %); postal services and other activities account for 5 % overall.

The administrative charges amounted to € 62.80 m in 2014, compared with € 50.79 m in 2013. Operational surplus is transferred to the state budget, which in 2014 equalled € 10 m.

The European Commission decided in October 2014 to refer Belgium to the Court as it considered that the BIPT did not enjoy the degree of independence necessary under the regulatory framework as the Council of Ministers could suspend certain of the regulator's decisions and had to approve its three-year strategic plan. A new government, which had introduced independence of the regulator among its political priorities, subsequently repealed the contentious provisions by legislation adopted in March 2015.

The Institute operates under triennial strategic plans, which are executed according to annual work programmes. The BIPT published its strategy for 2014 to 2016 in April 2014, and the accompanying work plan for 2014 in July. The BIPT's strategy during the planning period that began in 2014 revolves around seven axes: (i) innovation, (ii) competition and investment, (iii) network reliability, transparency and data retention, (iv) consumer information, (v) social inclusion, (vi) domestic and international dialogue and (vii) regulatory performance. In 2014, a total of 44 projects on electronic communications were pursued across these domains, with the largest numbers accruing to 'competition and investment' and 'innovation', which together accounted for 50 % of activities. In the 2015 work plan, this prioritisation has been further confirmed, with the two domains now accounting for about 51 %, while at the same time more emphasis has been placed on informing consumers (19 % of projects).

BIPT decisions are subject to appeal before the Brussels Court of Appeal. In 2014, three such appeals were lodged, with a further appeal concerning the BIPT due to its involvement in the Conference of Regulators of the electronic communications sector (CRC). The figures thus remained identical to those in 2013. In 2014, the BIPT also provided for conciliation in one dispute between operators concerning traffic towards non-geographical numbers originated on a mobile network. It did not yet exercise its newly awarded power to render administrative decisions about disputes, as necessary implementing legislation still remained to be finalised.

The framework for cooperation with the Belgian Competition Authority, *l'Autorité belge de la concurrence*, was further specified beyond already existing statutory provisions by Royal Decree of May 2014, which established rules on mutual consultation and information sharing.

4.2. Authorisation and licences

Operators under Belgian jurisdiction must notify their intention to provide electronic communications to the BIPT. The required information can be submitted electronically or on paper, and there are no special rules for foreign operators irrespective of whether they are located in- or outside the EU. In March 2015, the regulator published guidance on the notification requirements. Of 282 registered operators, 85 (30.1 %) are cross-border operators of which 74 are EU operators and 11 non-EU operators.

The definition of limits to EMF exposure falls within the environmental competence of the Regions. Following an exchange of views with the Commission on the proportionality of its total EMF exposure limit, the Brussels Capital Region in April 2014 doubled the threshold at the reference frequency of 900 MHz to 6V/m. The corresponding values for Wallonia and Flanders are 3V/m and 20.6V/m per antenna in residential areas. While operators consider these limits still functional for facilitating network planning in the short to medium term, there are questions about their long-term sustainability in view of LTE roll-out and future network evolution. In October 2014, the revised limit for the capital region was challenged before the Constitutional Court.

There were no applications for refarming submitted to the regulator in 2014. After the fourth 3G operator Telenet Tecteo Bidco's announced that it would not utilise its rights in the 900 and 1800 MHz bands, a Royal Decree was adopted in April 2014 to facilitate the reorganisation of the spectrum in those bands. Subsequently, the BIPT launched in June 2014 a call for applications for the rights originally reserved for Telenet Tecteo Bidco. This was followed in July 2014 by a decision refarming existing rights in the 1800 MHz band. On this basis, the regulator adopted a decision in December 2014, which refarmed the 900 and 1800 MHz bands and, following an application to this effect, required Belgacom and Mobistar to present an alternative refarming plan for the 900 MHz band, including a migration pathway. Having received this proposal, the BIPT launched a public consultation in March 2015 indicating that it did not find reason to oppose the alternative proposed by the operators. The entire process took place in line with the BIPT's decision of November 2011 enabling parallel use of multiple transmission technologies (UMTS, LTE) in the bands concerned.

In February 2015, the BIPT published a call for applications for usage rights in the 3.5 GHz band. Applicants have to comply with the harmonised technical conditions established by Commission Decision 2014/276/EU.

Belgium has authorised both Solaris and Inmarsat for offering mobile satellite services. The use of complementary ground components is subject to a special licensing regime, under which no applications have been received yet.

Mobile operators in Belgium report spectrum fees as high compared with neighbouring countries and not sufficiently accommodating flexible use. This is considered as a barrier to network roll-out notably as far as microwave links are concerned. The regulator has planned a benchmark study on the subject for 2015.

Belgian law allows for numbering resources to also be assigned to applicants other than providers of electronic communications, e.g. where these are made use of for particular, socially relevant services. The pricing of numbering resources has remained stable in 2014.

4.3. Taxation

Tax pressures affect the electronic communications sector notably in the mobile segment through financial obligations levied on transmitter sites. These effects are unevenly dispersed across the Belgian territory, with additive regional and municipal measures affecting operators in the South of the country, while in Flanders and Brussels no corresponding regional taxes are of application. The aggregate effect per site in Wallonia can amount to up to a maximum of € 16 000, which operators report as a significant impediment to network roll-out. Considering the operational implications, including the possible closure of non-profitable sites, operators have also attacked these measures before the courts. The act introducing a site tax in the Walloon region has thus been challenged before the Constitutional Court by all three MNOs. As regards non-compliance of the various financial obligations with EU law, the CJEU in September 2014 confirmed the permissibility of regional establishment taxes that apply without difference to businesses on the basis of criteria unrelated to their economic activities (Joined Cases C-256/13 and C-264/13).

5. SPECTRUM MANAGEMENT

In May 2014, a new provision of the Electronic Communications Act prohibiting harmful interference entered into force. Transgressions can be sanctioned by the BIPT.

Belgium allotted the 800 MHz band for use by electronic communication services in June 2013, ensuring technological neutrality by allowing operators to adapt the technical standard of operation.

In November 2014, the regulator launched a consultation with regard to establishing a short- and mid-term strategy for mobile electronic communications. In this context, it announced its intention to reserve the 700 MHz band for this service type. Respondents were notably to indicate as of when such assignment would be required.

All mobile network operators have today surpassed the final stage of their 3G coverage obligations of 85 % of the Belgian population. The same applies in respect of 4G at 800 MHz for which a target of 30 % within two years of the licence award in 2013 had been set. Proximus started offering 4G services in November 2012, Base Company in October 2013 and Mobistar in February 2014. In a next step, operators will have to increase population coverage via the 800 MHz band to 70 % by June 2017. Operators' own data suggest that this target had already been largely achieved by the end of 2014. LTE services are also licenced in the 1800, 2600 and 3500 MHz bands.

Frequency usage rights may be traded subject to notification to and non-objection for incompatibility with efficient spectrum management by the BIPT. In April 2014, a Royal Decree introduced the option of spectrum leasing subject to the same procedural requirements. The BIPT publishes information about trades and leasing arrangements on its website. No applications for spectrum trading or leasing have thus far been submitted.

6. RIGHTS OF WAY AND ACCESS TO PASSIVE INFRASTRUCTURE

The legislative competence for rights of way resides with the Regions, and this accounts for fragmented regimes and procedures in different parts of the country. Practically, the award decisions are made by the public entities responsible for the public domain in

question. Notably in the capital, municipal decision-making is reported as being cumbersome and slow. There is no corresponding obligation for rights of way to be granted within 30 days, as it was introduced with regard to environmental permits for antenna sites in April 2014. On average, the award of a permit in Brussels requires 350-400 days as compared with 180 days in Flanders and 130 days in Wallonia. No procedural relief is granted to facilitate small cell deployment.

Operators did not report any discriminatory treatment or abusive conditions in the handling of their applications, but concerns about transparency regarding the procedures remained. Electronic access and submission of applications is not guaranteed and where it does exist, is often uneven (availability via website or only upon request by electronic mail, handling of requests).

There is no central mapping of passive infrastructure at federal level covering electronic communications or utilities. For fixed network deployment, operators can rely on the mapping done at regional level to prevent excavation damages. In Flanders, the KLIP (*Kabel en Leiding Informatie Portal*) database provides relevant information for planning permit applicants, cable and pipeline operators and public domain administrators. In the capital and in the Walloon region, such information is provided via the CICC (*Contact federal Informations Câbles et Conduites*) database. There are several regimes for the coordination of civil engineering works in the regions. Formal procedures are set out and regular coordination meetings take place to discuss with all infrastructure providers the mid- and long-term public road interventions. In the capital region, there is a Roadworks Coordination Unit (*Direction de coordination des chantiers*) with which anyone planning significant infrastructure works must file its plans so as to make them accessible to other interested parties and thereby facilitate coordination and co-investment.

For mobile communications, the BIPT operates a database of transmitter sites to facilitate site sharing as much as possible. By Royal Decree of April 2014, further details on the operation of this database were established, including database contents, informational obligations for operators and their temporal scope of application. The Institute provides contributing operators with a monthly update on planned and operational sites. By May 2015, the database is to achieve complete coverage of all sites on Belgian soil.

The regulator issued guidelines on passive and active infrastructure sharing in mobile communications in 2012. Generally, operators must take all necessary measures to make their sites appropriate for sharing and communicate information to the BIPT about site sharing (localisation of new sites and modifications on existing sites). By legislation adopted in March 2014, the regulator was empowered to impose infrastructure sharing following a consultation. No such obligations were imposed, nor was any such consultation organised in 2014.

7. CONSUMER ISSUES

7.1. The European emergency number 112

In Belgium, the number 112 is still routed as the number 100, the historical urgent medical assistance and fire brigade number. It is patched to the police whenever necessary, but public information campaigns advise callers to continue use of the bespoke 101 number when requiring urgent police assistance. To ensure the reliability of

112 as an emergency service, Belgium provides a separate call centre at the number 1771 for information to the general public in crisis situations to offload peak traffic.

Following trials in the first half of 2014, the SMS112 service for the hard of hearing and users with speech impediments has been launched in February 2015. In a first phase, the service does not yet support SMS delivery to the European emergency number, but operates on a specific number that users must obtain by SMS or email. The service is reserved to users unable to rely on voice telephony for emergency purposes and requires a Belgian SIM card.

Under Belgian law, to identify callers contacting emergency services includes their localisation. Caller location data on mobile networks is delivered via automatic pull. Despite remaining accuracy concerns, the regulator did not envisage further regulatory action. For fixed networks, the regulator engaged operators to address problems of reliability regarding registered installation addresses. The regulator is considering options for improving the centralised database operated on a voluntary basis by the former incumbent. The issue of IP-based access to emergency services was also identified as a future priority. In early 2015, the IBPT has also presented a first version of dynamic secured webpage to operators which allows them to make available contact points to the emergency services in case the latter encounter difficulties in obtaining location data for emergency calls.

7.2. Number portability

A 2013 Royal Decree that modernised and simplified the procedures for number portability saw its first full year of application in 2014. The Decree aims to ensure adherence to the one-day portability rule thanks to a precise workflow and to provide users with appropriate compensation where this proves impossible. It stipulates daily compensation rates of € 3 per number for simple porting procedures concerning single numbers attributed to natural persons or all numbers linked to an ISDN subscriber line, and € 5 per number in all other cases. The compensation is due by the recipient operator, who is also entitled to charge up to € 10 per number to be ported. In practice, this possibility is not resorted to. Similarly, there are no wholesale charges for the setup costs, unless operators prove these to be disproportionate.

While mobile communications saw a decrease of one percentage point in the amount of numbers transferred in 2014, the porting of fixed numbers almost doubled during the year. Notwithstanding this significant increase, the share of total numbers in fixed communications concerned remains about half that of mobile communications.

Number portability (October 2014)¹²		2013	2014
Fixed	Number of transactions	121,763	219,912
	% of total numbers	2.0%	3.7%
	Maximum wholesale price	0.0	0.0
	Maximum time under regulation (number	1	1

¹² Source: Figures provided by Belgium to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe.

	of working days)		
Mobile	Number of transactions	875,313	820,096
	% of total numbers	8.8%	8.2%
	Maximum wholesale price	0.0	0.0
	Maximum time under regulation (number of working days)	1	1

7.3. Contractual obligations

While the maximum duration of contracts in Belgian law is capped at two years, operators are obliged to offer one-year subscription schemes and consumers may terminate contracts after six months without being subject to penalties. Rebated or free terminal equipment offered with the subscription may be subject to cost recovery as specified in a reimbursement table that the customer must receive when entering into the contract. These rules apply to fixed, mobile, internet and television services alike. The obligation for operators to make consumers at least once a year aware of the most interesting subscription scheme thus also extends to Internet access and bundles. In 2014, churn rates for mobile (24 %) were almost twice as high as for fixed broadband (13 %).

Having observed a greater propensity to change provider in mobile than in fixed services among consumers, the regulator launched in 2014 a project to identify obstacles and incentives to switching. This will be followed up in 2015 by a report setting out possible future policy options for consultation, based on which the BIPT will reassess the need for action.

7.4. Other consumer issues

To enhance market transparency for consumers beyond the regulator's online tariff comparison tool, operators have been obliged since 1 July 2014 to make available standardised information factsheets on each of their consumer tariff plans and to present them to consumers before the purchase decision. This complements existing obligations to make information available in a format accessible to disabled users, to publish actual data consumption information and reference to the tariff comparison tool on the invoice, and to make clients at least once annually aware of the best tariff plan corresponding to their usage habits. Consumption monitoring is supported by an obligation for mobile operators that came into force in February 2014 to inform clients by SMS when expenditure thresholds are breached.

In 2014, no complaints about cross-border access to non-geographic numbers were registered. The BIPT carried out both an international price benchmarking study and an investigation of consumer perception of the electronic communications market. These activities will be repeated in 2015.

The Ethics Commission for Telecommunications imposed fines in seven cases on providers of pay services in 2014 on grounds of illegality and non-compliance with the marketing rules of its code. In two cases, the Commission further ordered cessation of the service concerned. The revised numbering plan of July 2014 contributed to enhanced consumer protection by codifying the Commission's adjudication on the use of specific numbers for horoscope and related services and simplifying the annex to the code concerning pay services. A legislative amendment of March 2014 widened the scope of

application of the Ethical Code to operators renting numbers to content providers and laid the basis for enhanced transparency about the identity of those providers towards consumers; without such transparency, premium rate charges can no longer be billed.

8. UNIVERSAL SERVICE

In February 2014, the modalities of the open designation procedure for the provider of the fixed geographical component were revised by Royal Decree so that multiple operators could apply as a consortium and the regulator would no longer be obliged to determine the net cost prior to the procedure.

By Royal Decree of April 2014, the bitrate of functional Internet access to be provided within the geographical component was set at 1 Mbps. Operators may fall short of this rate for a maximum period of one hour per day. To ensure affordability, the Decree obliged universal service providers to offer uniform tariffs less than or equal to the financially most interesting standard offer for these services. Two further Royal Decrees on the geographical component of the universal service adopted on the same occasion revised the price control scheme for the geographical component and the quality of service requirements for its provision. The latter expanded the range of cases where failure to comply with the requirements would not be considered when assessing compliance to cases beyond the operator's control and which could not be imputed to him. This category of cases was to be determined by a decision of the BIPT, which was adopted in September 2014.

In January 2015, the BIPT published an evaluation report of November 2014 concerning the universal service obligations that had been lifted by measures adopted in 2013, namely the provision of public pay telephones, directory enquiry services and directories. The report concluded that the removal of these obligations had had no prejudicial effects. The BIPT observed that problems of informational accuracy for providers of directory enquiry services and directories would not be addressed by reintroducing them.

9. NET NEUTRALITY

9.1. Legislative situation

The beginning of a new parliamentary term in 2014 has seen renewed initiatives for national net neutrality legislation. A total of five new legislative proposals have been put forward, but not yet been submitted for reading by the legislature. The new Government has expressed support for an EU level solution, all while stressing the regulator's role in ensuring operators' compliance with net neutrality principles, including transparency on traffic management practices. While some providers of electronic communications have moved to increase transparency on how they manage Internet traffic, the BIPT did not receive any complaints about blocking, throttling or other practices limiting net neutrality.

9.2. Quality of service

Providers of Internet access services are legally obliged to provide consumers looking for a broadband subscription or signing a contract with information about up- and download speeds outside of peak hours and minimum and maximum speeds within peak hours. The regulator provides consumers with additional information via a dedicated part of its

website. After the obligation on ISPs has been applicable for more than 1.5 years, the regulator plans to conduct a compliance assessment in 2015. Similarly, it is to be checked whether service providers do provide end-users with legally required information on the impact of traffic management practices on the quality of service. The regulator has also scheduled a review of the existing decisions concerning the publication of key performance indicators by operators and, in that context, the introduction of a quality of service barometer to enhance transparency. A consultation on a draft decision regarding quality of service indicators was launched in February 2015. Finally, the development of a software-based tool for speed measurement (up- and download speed, ping, etc.) was also considered in order to empower end-users to actively obtain clarity about the quality of service provided to them. However, the BIPT decided not to pursue this project given that a variety of such tools already existed on the market.

Bulgaria

1. MARKET DEVELOPMENTS

Broadband indicators (December 2014)¹	BG 2013	BG 2014	EU 2013	EU 2014
Fixed broadband coverage ²	93%	95%	97%	97%
NGA coverage ²	68%	69%	62%	68%
Fixed broadband take-up ²	52%	54%	69%	70%
Share of >30Mbps subscriptions ³	41%	47%	21%	26%
Share of >100Mbps subscriptions ³	3%	5%	5%	9%
Share of DSL in fixed broadband ³	18%	15%	73%	70%
Incumbent market share fixed broadband ⁴	23%	23%	42%	41%
HSPA Mobile broadband coverage ²	100%	100%	97%	97%
LTE Mobile broadband coverage ²	0%	36%	59%	79%
Mobile broadband penetration ⁵	58%	61%	64%	72%
Market share of leading mobile network operator ⁴	41%	37%	35%	35%

During the reporting period the fixed broadband coverage increased by two percentage points and reached 95 % as of December 2014 but still remains below the EU average of 97 % the EU. The fixed broadband market continued to be highly fragmented with more than 600 operators offering internet services. The number of subscriptions for fixed broadband connections is increasing constantly and reached 1.467.700 as of July 2014⁶. The trend towards decrease of the number of ADSL subscriptions has further deepened.

There is virtually no competition in the DSL retail market since the incumbent BTC exclusively offers DSL lines. During the reporting period no demand for wholesale services as local loop unbundling or bitstream offered by the incumbent BTC has been

¹ Sources: coverage data — studies by IHS and VVA; penetration data — figures provided by Bulgaria to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe (except fixed broadband take-up, provided by Eurostat).

² % of households.

³ % of fixed broadband subscriptions.

⁴ % of subscriptions.

⁵ Subscriptions per 100 inhabitants.

⁶ Source CRC.

declared. Alternative operators continued to rely mainly on non-DSL technologies and deploy their own infrastructure by using access to the incumbent's ducts or building aerial cable networks in smaller settlements with less than 10 000 inhabitants. According to information provided by the *Communication Regulation Commission* (CRC, see section 4.1 below), as of January 2014 57 % of the rented incumbent's ducts are used by its three main competitors. In addition, 214 other alternative operators used the incumbent's duct whereby 155 of them considered the BTC ducts as the only available alternative to build their own infrastructure.

At the end of 2014, 66 % of all fixed broadband subscriptions are NGA making Bulgaria one of the leading countries in this category within the EU (EU average 31 %). With 39 % of the total NGA subscriptions, FTTH/B access lines are the most used NGA for access product on the market. The upward development of broadband internet access realised through NGA has a favourable effect over the speed of the Internet services offered. As of December 2014, 47 % of the fixed broadband subscriptions are using download speeds of more than 30 Mbps. The fixed broadband subscriptions for products offering ultra-fast speed of above 100 Mbps amounts for 5 % of all active broadband lines, which is still below the EU average of 9 %.

The subscriptions for CATV access products based on DOCSIS 3.0 technology continued to grow in 2014. At the end of 2014, the market share of undertakings providing cable technology reached 17 %. As of December 2014, the market share of the incumbent BTC in the fixed broadband market (based on subscribers) remained relatively low with 23 % in comparison with the EU average of 41 %

Notwithstanding the high fragmentation of the retail broadband market, more than 61.5 % of the market (based on subscribers) is shared between only five service providers. As of July 2014, the average retail price for fixed broadband access products with a download speed between 12 and 30 Mbps was EUR 19.20 per month, which placed Bulgaria within the range of the countries with relatively low prices within the EU.

With regard to fixed voice services, the incumbent BTC continued to have the largest market share with 70 % as of July 2014. The market share of BTC's main competitor Mobiltel EAD decreased by about one percentage point and reached 10.9 %. The other main competitors Telenor Bulgaria EAD and Blizoo Media and Broadband EAD were able to increase their market shares by one and 0.7 percentage point respectively compared with the end of 2013⁷.

The trend towards increased consumption of bundled services continued during the reporting period. As of July 2014, the bundled-offer penetration was 28 %. The bundled offer of mobile voice service and mobile broadband retained its leading positions among the bundled services offered on the market by reaching 48.6 % market share based on subscribers followed by the double play TV and fixed internet access with 21.2 % market share by January 2014.

⁷ Idem.

Operators claimed that cable operators underreport the number of subscribers in order to decrease the copyright and content fees. This allows them to reduce costs and become more attractive for the end-users. In this context, legislative amendments to the current provisions have been recently adopted that impose additional transparency requirements on operators with regard to the number of subscribers. The deployment of aerial cables without construction permit is still occurring and has been regarded as an obstacle for the infrastructure based competition on the Bulgarian market. The usage of illegal cables concerns in particular cable and LAN operators.

Currently, there are three undertakings providing mobile voice services in the mobile market, including the incumbent BTC. Three operators notified to the CRC their intention to provide electronic communications services through Long-Term Evolution (LTE) wireless broadband network. However, only one of them (Max Telecom) has notified actual provision of LTE data transmission services to the end-users using the 1800 MHz band. According to the operator, the LTE network covers 9 cities including the capital Sofia and more than 23 % of the country's population. One of the obstacles for the slow progress in the deployment of LTE is the fact that the majority of the 800 MHz spectrum band is still not released for the use of wireless electronic communications services. The 800 MHz spectrum band is regarded as very well suited to ensure optimal usage of large areas with wireless broadband services and crucial for the nationwide deployment of LTE networks in Bulgaria. Operators claimed that the government has still not presented concrete plans with a timetable for the actual release of the spectrum band which would enable the market players to better develop their investment strategies.

As of October 2014, the market shares of the mobile operators based on subscribers were 37.4 %, 37.3 % and 25.3 % respectively. In the last two years, the market share of the largest mobile operator declined by 7 percentage points while the market shares of the main competitors constantly grew and reached an increase of 3 percentage points. As of December 2014, mobile broadband penetration increased to 61 % which is an increase of 3 percentage points compared with the preceding year but still below the EU average (72 %). Currently there are no virtual mobile network operators on the Bulgarian market.

2. MARKET REGULATION

2.1. Market analysis

In December 2014, CRC adopted a draft decision on definition, analysis and assessment of the market of wholesale local access provided at a fixed location and the market of wholesale market access at a fixed location⁸. During the reporting year several important regulatory decisions have been confirmed by the Supreme Administrative Court (SAC) as last instance and thus became definitive. The Court confirmed *inter alia* CRC Decision No 1361/2012 concerning the second round market analysis of the wholesale market for call origination on the public telephone network provided at fixed location and the wholesale markets for call termination on individual public telephone networks provided at a fixed location⁹ and CRC Decision No 1362/2012 on the second round of market analysis of the wholesale market for voice call termination on individual mobile

⁸ Markets 3a and 3b in accordance with the Recommendation of the European Commission (EC) 2014/710/EU.

⁹ Judgment No 6472/14.05.2014.

networks and determined the gradual decrease of the mobile termination rates¹⁰. In the past two years, CRC imposed several sanctions on the mobile operators for not complying with the obligations laid down in the above-mentioned regulatory decisions. In line with CRC Decision No 134/2013 and No 135/2013 that set cost-oriented fixed and mobile termination rates determined under the BU-LRIC methodology as recommended in the Commission Recommendations on Termination rates¹¹, the termination rates have further decreased. As of 1 July 2013, the fixed termination rates decreased to 0.25 €cents/min. and as of January 2015, the mobile termination rates decreased to 0.97€cents/min. According to CRC, the reduction of mobile and fixed termination rates resulted in an increased traffic volume to other networks.

2.2. Access and interconnection

In line with the provisions of the Law on Electronic Communications (LEC), providers are obliged to inform the NRA about their interconnection agreements including IP interconnection. The NRA has not received any disputes specifically related to IP interconnection.

There is an obligation imposed on undertakings with significant market power in the market for call origination and call termination on public telephone networks at a fixed location to provide IP interconnection¹². In order to achieve interoperability between services at national level, essential aspects of the migration to IP interconnection were reviewed by an advisory body comprising members of the NRA and interested undertakings in September 2013. In December 2014, CRC adopted a draft decision¹³ determining the requirements and terms for the introduction of IP interconnection and launched a public consultation procedure. According to the draft decision, the undertakings concerned have to publish the conditions for the provision of IP interconnection on their website before 1 January 2016. The incumbent is required to submit a reference offer for interconnection including conditions for the provision of IP interconnection. From January 2017, the undertakings, subject to the draft decision, shall provide IP interconnections.

3. BROADBAND PLANS AND FINANCING

In June 2014, the Bulgarian government adopted a National Plan for Infrastructure for Next Generation Access (NGN). The plan underlines the importance of promoting socioeconomic development by creating conditions for citizens and business to exploit opportunities based on NGA broadband infrastructure with 100 % territorial coverage. The plan defines two national targets for 2020. The first target is to ensure equal nationwide access to high speed and ultra-high speed Internet through the development of broadband infrastructure exceeding 30 Mbps. In this context, the plan foresees that by 2020 50 % of households should have access to an optical broadband connection with speeds exceeding 100 Mbps. Furthermore, all public institutions and businesses should have access to ultra-high speed fixed broadband connections by 2020. The second target

¹⁰ Judgment No 8887/26.06.2014.

¹¹ Commission Recommendation C(2009) 3359 of 7.5.2009 on the regulatory treatment of fixed and mobile termination rates in the EU.

¹² CRC Decision No1361/2012.

¹³ CRC Decision No798/2014.

promotes the use of broadband services and aims to increase the number of households and businesses using ultra-high speed connections to at least 50 % and 80 % respectively. Since the plan still does not fulfil the so-called *ex ante* conditionality criteria with regard to the use of ESIF (European Structural and Investment Funds), a revision is planned by September 2015. The revised plan will include –among other things- further measures to stimulate private investment.

Furthermore, in March 2015 the government adopted a national policy programme for electronic communications for the period 2015-2018 where clear priority was given to the swift roll-out of high speed broadband infrastructure. Five projects from Bulgaria were submitted to participate in the Connected Communities Initiative (CCI).

A project to deploy basic NGA is progressing and is expected to be finalised in September 2015, following Commission clearance of EUR 20 million of state aid measures in 2013.

4. INSTITUTIONAL ISSUES

4.1. The National Regulatory Authority

The Bulgarian Regulatory Authority, *the Communications Regulation Commission* (CRC) is the independent NRA according to the regulatory framework and is vested with the main regulatory tasks assigned to national regulatory authorities under the regulatory framework for electronic communications in the EU. It consists of five members appointed for a term of five years. The appointment is renewable for one more full term. The Chair of the NRA is appointed by the Council of Ministers. In the exercise of his tasks, the Chair of the NRA is supported by a deputy chair. The Chair can be dismissed by a decision of the Council of Ministers. The deputy chair and two members of the CRC are elected by a decision of the Parliament and one member of the CRC is appointed by a decree of the President of the Republic of Bulgaria. Pursuant to the provisions of the Law on Electronic Communications (LEC), the NRA has to submit to the Parliament, President and the Council of Ministers an annual report describing the regulatory activities of the authority, the status and the developments on the market for electronic communications.

	2014
Personnel ¹⁴	209
Increase	-3.7 %
Budget	€ 3.63Million
Increase	-20.7 %
Income ¹⁵	€ 34.84 Million
Administrative costs ¹⁶	€ 3.49 Million

The budget of the authority decreased significantly by more than 20 % in 2014.

¹⁴ Number of staff in full time equivalents (fte).

¹⁵ In addition to administrative charges the sense of Art. 12 of the Authorisation Directive (Directive 2002/20/EC as amended by Directive 2009/140/EC), the reported figure includes figures includes also a one-off fee paid to CRC for extension of rights of use (amounting to € 30.6 m).

¹⁶ Idem.

During the reporting period there were only two cases subject to dispute resolution procedure.

The regulatory decisions of the CRC can be judicially reviewed by the Supreme Administrative Court. During the reporting year, CRC adopted 748 decisions, including decisions on obligations for payment of fees or taxes and decisions of a purely procedural nature. 10 regulatory decisions were challenged before the Supreme Administrative Court. The Supreme Administrative Court confirmed as a last instance 14 decisions adopted by the CRC between 2012 and 2013. The average duration of court proceedings is about 2 years.

In April 2015, the National Parliament has adopted a new law amending the provisions of the LEC related to sanctions that the NRA is entitled to impose on operators who are not complying with regulatory obligations. According to the new law, the NRA is empowered –*inter alia*– to immediately impose financial fines regardless of whether the underlying regulatory decision was appealed or not.

4.2. Authorisation and licences

According to the sector-specific primary and secondary legislation there is no establishment requirement as a prerequisite to provide electronic communications services and networks in the country. Undertakings intending to provide public electronic communications services in Bulgaria need to submit a notification to the CRC.

In order to stimulate demand and ensure effective use of spectrum resources, in 2014 the tariff of fees has been amended and the one-off fees for the frequencies bands 420 MHz, 460 MHz, 900 MHz, 1800 MHz, 2 GHz 2.5-2.6 GHz and 3.6 GHz have been reduced by 20 %.

In 2014, the licenses of the mobile operator Mobiltel EAD for the use of radio frequency spectrum in the 900 MHz and 1800 MHz band were extended for a period of 10 years (until 2024). Currently no authorisations for the use of radio frequency bands, allocated for provision of mobile satellite services (MSS) have been issued. In 2014 Solaris Mobile Limited submitted an application for issuing an authorisation for use of radio frequency spectrum for MSS but it was withdrawn later.

During the reporting year no (additional) taxes have been imposed on operators of the sector in view of the fact that they provide electronic communications services.

5. SPECTRUM MANAGEMENT

Bulgaria has not assigned the 800 MHz spectrum band for wireless telecommunications services due to the fact that the band is largely used by the Ministry of Defence. Operators claimed that the government still does not have concrete plans for the release of the band, although they have shown interest in acquiring the frequencies. There are also no concrete plans for the future use of the 700 MHz band. A small part of it is used for digital terrestrial broadcasting (DVB-T) and the remaining part is used for national security purposes. During the reporting year, Bulgaria successfully released the spectrum band 2.5-2.6 GHz for civil use in four big cities, including the capital Sofia. Bulgaria was late with the assignment of the 2.5-2.6 GHz spectrum band for wireless broadband services due to the fact that the spectrum band was occupied by the National Security

Service. After opening an infringement procedure against Bulgaria for non-implementation of Decision No 2008/477/EC, the government made a commitment to release the spectrum band gradually. According to the commitment, the spectrum should be released nationwide by 31 August 2015.

In 2014, following a request, CRC has assigned 2x2 MHz in the 1800 MHz band to Max Telecom.

There is still spectrum available in the 1800 MHz, 2GHz and 3.4-3.6GHz bands that has not been assigned yet. According to a public consultation carried out by CRC in 2013, there was no market demand for that available spectrum at that time. In September 2014, CRC carried out a second public consultation with the result that the demand for frequencies in the 1800 MHz spectrum band was bigger than the free spectrum of 2x18.4 MHz. CRC is expected to take a decision with regard to the assignment procedure soon.

In April 2015, the EU Court of Justice issued a judgment against Bulgaria confirming that the country breached EU law when assigning in 2009 spectrum rights of use for the deployment of digital terrestrial television (DTT) infrastructure.¹⁷

6. RIGHTS OF WAY AND ACCESS TO PASSIVE INFRASTRUCTURE

In line with the requirements laid down in the National Cadastre and Property Register Act, the undertakings providing electronic communications services are obliged to create specialised maps, registers and information systems related to electronic communications networks. In addition, there is a special measure introduced in the governmental programme to facilitate the use of cadastral data and maps for the implementation of strategic infrastructure projects.

Market players complained about the complex procedure for granting rights of ways, especially in cases where several local authorities need to be involved. The fragmentation of the legislation and its inconsistent application by the different local authorities has been regarded as one of the main impediments for the timely issuing of construction permits. According to information provided by the operators, up to 240 days are needed for obtaining all construction permits from the authorities for the construction of mobile sites.

In 2014, the government developed a number of documents, schedules, national strategic objectives and measures related to the implementation of Directive 2014/61/EU on measures to reduce the cost of high speed broadband deployment. In this context a public consultation has been held. The draft law is currently in preparation.

7. CONSUMER ISSUES

7.1. The European emergency number 112

In line with Article 255(3) of the LEC, the providers of mobile voice services are obliged to determine the caller location with an accuracy of 100 m in urban areas and within one

¹⁷ Case C-376/13.

kilometre outside of settlements. In the fixed network, the location is determined by the address on which the caller's number is registered. Both mobile and fixed operators use the 'push' method for transmitting data for the caller location towards the Public Safety Answering Point (PSAP). Currently in Bulgaria the PSAPs do not have the technical possibility to receive information by other means than voice communication.

There is still no legislation in place which ensures that disabled people can access the emergency number 112.

7.2. Number portability

Number portability (October 2014)¹⁸		2013	2014
Fixed	Number of transactions	61,347	64,505
	% of total numbers	3.0%	3.0%
	Maximum wholesale price	9.2	9.2
	Maximum time under regulation (number of working days)	3	3
Mobile	Number of transactions	143,533	173,051
	% of total numbers	1.0%	1.0%
	Maximum wholesale price	9.2	9.2
	Maximum time under regulation (number of working days)	2	2

Operators pay a wholesale porting fee for fixed and mobile portability, whereas consumers pay a retail fee only for the portability of fixed numbers.

7.3. Contractual obligations

Pursuant to Article 226 of the LEC which transposes Article 30(5) of the Universal Service Directive, contracts concluded between consumers and operators cannot exceed 24 months and every provider shall offer a contract with a maximum duration of one year. According to an amendment of the General requirements for the provision of public electronic services based on Article 73 LEC¹⁹, the individual contract concerning end-users and business customers should be concluded in written form. The provision shall apply in cases where the contractual parties are physically present when concluding the contract. Contracts could be prolonged for another fixed term only upon explicit written consent of the subscriber. If there is no such consent the contract is prolonged for an indefinite term under the same conditions and the subscriber can terminate it by one-month preliminary notice and without any penalties being imposed.

¹⁸ Source: figures provided by Bulgaria to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe.

¹⁹ CRC Decision No 928/19.12.2013.

7.4. Other consumer issues

In 2014, CRC adopted a transparency obligation to increase consumer awareness. According to the relevant decision²⁰ the three mobile operators are required to publish an electronic map on their websites showing the coverage of their mobile networks.

In 2014, CRC received 2988 consumer complaints. In comparison, in 2013 the total number of complaints was 3252 and in 2012 5032. The consumer complaints in 2014 were focused mainly on pricing and billing, contractual relations and availability and quality of fixed internet services.

8. UNIVERSAL SERVICE

By virtue of the LEC, the incumbent BTC is the current universal service provider therefore no competitive designation procedure was run in the designation process. The scope of the universal service includes: (a) connection at a fixed location to a public electronic communication network regardless of the technology used; (b) provision of public telephony services through the connection referred to above, allowing incoming and outgoing national and international calls to be made; (c) provision of public pay telephones and/or other public access points for voice telephony services of specified quality, which also ensure the possibility to make free-of-charge emergency calls to national specific numbers and to the single European emergency call number 112; (d) provision of a telephone directory for the numbers of all subscribers to public telephone services; (e) provision of telephone inquiry services accessible to all end-users, including users of public pay telephones and/or other public access points for voice telephony services; (f) provision of access to public telephone services, including the emergency call services, telephone directory and inquiry services for disabled people, similar to those used by other end-users.

According to the LEC, the financing of universal service shall be collected in a Universal Service Compensation Fund by the undertakings providing public telephone services with annual gross revenue over BGN 100 000 (approx. EUR 50834) and by other sources.

In 2014, the incumbent BTC submitted to CRC a denial of its right of compensation from the universal service provision. As a result, the compensation mechanism has not been activated yet.

9. NET NEUTRALITY

9.1. Legislative situation

No specific legal provisions on net neutrality are currently in place in Bulgaria.

9.2. Quality of service

According to the LEC, CRC is empowered to impose minimum conditions for the quality of services on the telecom providers that can be measured, and to define the content,

²⁰ CRC Decision No 512/07.08.2014.

form and manner of the publication of such information. Two years ago, CRC modified the General Requirements for provision of public electronic communications by introducing an obligation for the providers to measure and monitor the quality of fixed and mobile voice services and broadband access by considering particular quality parameters. In addition, the providers are obliged to annually publish information on their commercial websites about measured values of those quality parameters. In 2014, CRC reviewed published information by the providers about achieved values of quality of service parameters.

For the time being, CRC does not have a system or web-based tool for measuring the quality of services. The possibility of implementing a system for measuring the quality of service of Internet access (web-based tool) will be reviewed at the end of 2015.

Croatia

1. MARKET DEVELOPMENTS

Broadband indicators (December 2014)¹	HR 2013	HR 2014	EU 2013	EU 2014
Fixed broadband coverage ²	97%	97%	97%	97%
NGA coverage ²	33%	57%	62%	68%
Fixed broadband take-up ²	61%	61%	69%	70%
Share of >30 Mbps subscriptions ³	0%	1%	21%	26%
Share of >100 Mbps subscriptions ³	0%	0%	5%	9%
Share of DSL in fixed broadband ³	85%	83%	73%	70%
Incumbent market share fixed broadband ⁴	57%	53%	42%	41%
HSPA Mobile broadband coverage ²	94%	98%	97%	97%
LTE Mobile broadband coverage ²	24%	58%	59%	79%
Mobile broadband penetration ⁵	66%	69%	64%	72%
Market share of leading mobile network operator ⁴	46%	46%	35%	35%

There were ten new entrants in the fixed telephony market in 2014. They have started their activities on a small scale. In the fixed broadband market, subscriptions are still increasing, but the growth rate is low. Most offers are xDSL-based (83 %), followed by cable (12 %). Next Generation Access (NGA) lines account for approximately 14 % of all fixed broadband subscriptions: 67.4 % of NGA lines⁶ are cable DOCSIS3.0, since the majority of the cable network has been upgraded. In 2014 there were three announcements of new FTTH roll-out by an alternative operator. The incumbent operator Hrvatski Telekom d.d. (HT) started providing services on the already built GPON FTTH network, which covers approximately 265 000 households. Accordingly, its wholesale broadband access reference offer was amended to facilitate access to this infrastructure.

¹ Sources: coverage data — studies by IHS and VVA; penetration data — figures provided by Croatia to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe (except fixed broadband take-up, provided by Eurostat).

² % of households.

³ % of fixed broadband subscriptions.

⁴ % of subscriptions.

⁵ Subscriptions per 100 inhabitants.

⁶ Source: HAKOM.

One alternative operator is offering retail packages based on VDSL, also being offered by HT in 2014. The largest cable operator completely switched its network to DOCSIS 3.0. The incumbent's legacy copper network does not contain street cabinets and it recently started building street cabinets. Until now the incumbent has not deployed vectoring on any street cabinet location. HT remains strongly dominant on this market. In June 2014 HT took control over the largest alternative fixed network operator Optima Telekom d.d. (Optima) following the completion of the pre-bankruptcy proceedings. The national competition authority, taking into account the opinion of the national regulatory authority HAKOM, approved this concentration subject to a number of conditions which include that HT has the right to manage Optima for a period of four years, after which it needs to initiate the sale of all of its shares in Optima, as well as the obligation to adopt measures safeguarding an independent management. HAKOM considers Optima as an affiliated company of HT from a regulatory point of view.

The mobile market consists of three market players, HT, VIPnet and Tele2. The revenues of mobile telephony services show a decreasing trend, which can partially be explained by the reduction of prices of off-net calls and by the impact of roaming regulation. Mobile broadband represents the fastest growing segment of the broadband market, with increasing penetration of smartphones and usage of data services. Two of the three mobile operators have implemented LTE technology and in that respect made a move towards an all-IP approach. Currently 800 MHz and 1800 MHz are used for LTE technology and there is a trend of growth in the number of base stations used for LTE. More than 2500 base stations are connected to fibre backhaul, which includes 200 LTE base stations.

Use of VoIP services has been increasing significantly during 2014. The incumbent operator should complete switching its PSTN network to an IP-based network (IMS) by the end of 2015. All operators are expected to be IP-based as of 1 January 2016; however PSTN/TDM interconnection will be in place in parallel with IP interconnection for approximately the next 3 years.

Over the Top (OTT) services, together with increasing penetration of smartphone users, are one of the reasons for further decline of SMS traffic volumes in 2014 compared with the same period in 2013. However, it should be noted that the volume of international voice traffic in mobile networks is increasing. OTTs are also a driver for the increasing penetration of smart devices, and the consumer drive for the adoption of technology and services. Network operators concluded agreements with OTT/content providers which relate solely to rights on the OTT content. Some OTT services provide the subscribers with video-on-demand such as OYO or Pickbox.

During 2014 mobile operators have launched a few new OTT services such as Kupon2go (location services: operator providing the best prices for goods or services depending on the customer location) and mOsiguranje (mInsurance: option to purchase insurance policies).

2. MARKET REGULATION

2.1. Market analysis

In March 2014 HAKOM issued a decision on price for sub-loop unbundling, based on BU-LRAIC+ model. The Commission welcomed the fact that HAKOM bases the

calculation for sub-loop unbundling in a FTTC scenario on its previously applied BU-LRAIC+ costing model. However, it stressed the need for additional justification for the assumptions made in relation to the length of the sub-loops in HAKOM's cost model, in particular with regard to the assumption that only loops longer than 2000 m are likely candidates for the introduction of new street cabinets, as shortening of loops shorter than 2000 m would be inefficient and not economically justified.

In April 2014 HAKOM carried out a market analysis of the retail market for leased lines and found that it no longer satisfies the three criteria test since there is effective competition on the relevant market. Therefore, this market was deregulated.

In May 2014 HAKOM adopted the Ordinance on optical fibre distribution networks. The Commission welcomed HAKOM's effort to incentivise investment in FTTH infrastructures in Croatia. The Commission also stressed the need to establish a viable access point to the fibre terminating segment and the need to ensure an appropriate and consistent symmetrical and asymmetrical regulation of FTTH networks in Croatia as this will have an overall impact on competition in the retail broadband market.

In July 2014 HAKOM issued decisions on wholesale broadband access (WBA) BSA prices and prices for terminated and trunk segments of leased lines, with all prices based on BU-LRAIC+ models. BSA prices defined in this decision are applied from 1 October 2014 except for FTTH WBA monthly prices for access part which are applied from 1 January 2015 (as their application was suspended until the final decision from December 2014 as reported below). Prices for terminated and trunk segments of leased lines are applied from 1 September 2015. The Commission welcomed that HAKOM took into account the criteria to assess volume discounts in the case of FTTH as set out in the Commission Recommendation on regulated access to Next Generation Access Networks (NGA Recommendation)⁷ when developing its new volume discount scheme for WBA services provided over the FTTH infrastructure, with the aim of ensuring that volume discounts reflect the risk decrease resulting from the number of fibre loops already sold in a given area. The Commission, however, emphasised that it is essential for HAKOM to ensure that in the presence of volume discounts, market entry remains possible for operators who, at least in the initial phases of investment, cannot benefit from the offered volume discounts. In the context of the upcoming full market review of the wholesale broadband market, the Commission asked HAKOM to verify that the wholesale broadband prices are stable and predictable as indicated. In addition, HAKOM should identify whether operators have been able to benefit from the proposed volume discounts and whether these discounts have in any way impeded new market entry by alternative operators.

In December 2014 HAKOM issued the final decision on monthly fees for FTTH WBA service, which are based on BU-LRAIC+ model, introducing a change of rates for FTTH WBA service set in the initial decision from July 2014. These rates would be applied as of 1 January 2015. In the new decision HAKOM changed some of its assumptions as to the future fibre roll-out based on the additional information received from HT. The newly proposed rates are lower than the rates in the decision from July 2014. This is the most

⁷ Annex I, point 8 of the Commission Recommendation on regulated access to Next Generation Access Networks (NGA), 20.09.2010., OJ L 251/35.

important regulatory decision in the reporting period. As the provisions of this decision are in force from 1 January 2015 it is too soon to assess its impact on the market, but it is expected that this decision will have an impact on the market in terms of utilisation of FTTH network (both on wholesale and HT's retail level) which should lead to further investments.

In November 2014 HAKOM carried out a market analysis of retail markets for publicly available local and/or national telephone services provided at a fixed location both for residential and non-residential customers and found it no longer satisfies the three criteria test. Following this, HAKOM deregulated both markets and designated HT and its affiliated companies, Iskon and Optima as SMP operators on the market for access to the public telephone network at a fixed location for residential and non-residential customers. HAKOM imposed a regulatory remedy of a margin squeeze test on the SMP operators. In this regard, in July 2014 HAKOM had adopted a new margin squeeze test methodology which was notified to the Commission on 13 June 2014 and the Commission had no comments.

In November 2014 HAKOM also finalised the analysis of the market for access to the public telephone network at a fixed location for residential and non-residential customers. This draft measure was notified to the Commission in September 2014. In this regard HT and affiliated companies Iskon and Optima were designated as operators with significant market power on the relevant market. The following regulatory remedies were imposed on HT: non-discrimination, transparency, price control, cost accounting and accounting separation. In addition to these obligations, HT and affiliated companies Iskon and Optima are obliged to apply a margin squeeze test for all retail packages that contain access service. While the Commission had no comments on this decision, some market operators expressed their concern that these regulatory remedies could lead to further market distortion and increase of market share of the incumbent because they limit their ability to actively compete in the market.

Both fixed and mobile termination rates are based on pure-LRIC since 1 January 2015.

Several court decisions rendered in 2014 confirmed the penalties imposed on the incumbent for the breach of its regulatory obligations concerning price control of WBA, cost accounting obligations, the interconnection and access to numbers for value added services. The main proceedings concerning the provisional measures related to the management rights of the incumbent in Optima imposed by HAKOM are still pending before the High Administrative Court.

HAKOM is obliged to conduct a review of all market analyses two years after accession to the EU, by 1 July 2015. HAKOM is implementing a plan concerning the upcoming market analyses, with a view to notifying them to the Commission in line with the new Recommendation on relevant markets: wholesale call termination on individual public telephone networks provided at a fixed location (M1) and wholesale voice call termination on individual mobile networks market (M2) by February 2015; wholesale local access provided at a fixed location (M3a) and wholesale central access for mass-market products provided at a fixed location (M3b) by May 2015; wholesale high-quality market provided at a fixed location (M4) by June 2015. In addition to the markets included in the new Recommendation on relevant markets, HAKOM also plans to review the other markets on the basis of the three criteria test: call origination on the public

telephone network provided at a fixed location by February 2015; wholesale trunk segments of leased lines by June 2015; retail broadband market by May 2015.

2.2. Access and interconnection

At the end of 2014, HAKOM started the process of coordinating activities between operators related to IP interconnection with several workshops taking place. HAKOM plans to issue the final decision in Q2 2015, after preliminary testing has been performed between chosen operators. Document containing all relevant issues regarding IP interconnection will be updated regularly, in order to reflect practical findings in implementation of IP interconnection and the newest developments on the market. Although terms and conditions for IP interconnection will be set following this decision, operators do not have a deadline to move towards IP interconnection. According to some provisional plans of HT, the incumbent plans to switch all operators to IP interconnection by 2018. All operators are obliged to publish terms and conditions for IP interconnection and to report any IP interconnection agreement to HAKOM. SMP operators are obliged to implement IP interconnection upon reasonable request 6 months after receiving the request. No IP interconnection disputes have been reported to HAKOM.

3. BROADBAND PLANS AND FINANCING

As part of the Strategy for Broadband Development in the Republic of Croatia for 2012 – 2015, the Croatian authorities pre-notified to the Commission in April 2014 the National Framework Programme (ONP) for the development of broadband infrastructure in areas lacking sufficient commercial interest for investments (white areas) as national NGN Plan for the development of access networks (NGA) (last mile). In February 2015 they pre-notified the national programme for backhaul broadband infrastructure (NP-BBI) covering state aid measures for backhaul portion of NGN network in white and grey areas. Both programmes act as operational programmes until 2020, aligned with ESIF funds financial perspective and aiming to reach Digital Agenda targets within that period. They support only infrastructure for speeds of at least 30 Mbps-100 Mbps with upgrade opportunities in line with the Digital Agenda targets. The ONP serves as a national (umbrella) broadband state aid scheme and also contains guidelines for local municipalities for the implementation of individual projects within ONP. A Working Group for drafting a new Broadband Development Strategy 2016-2020 was set up in November 2014. The Strategic Environmental Assessment procedure is conducted in parallel and it might influence the timetable for adoption of the Strategy.

There are concerns by certain stakeholders that local municipalities in white areas lack awareness of the need to support and prepare projects for the development of broadband infrastructure in their communities.

Public funding programs are successfully finalised by the adoption of Operational programme ‘Competitiveness and Cohesion’ 2014-2020 under the responsibility of the Ministry of Regional Development and EU Funds. According to the programme the financial allocation from ERDF is EUR 209 million.

4. INSTITUTIONAL ISSUES

4.1. The National Regulatory Authority

Hrvatska regulatorna agencija za mrežne djelatnosti (HAKOM) (Croatian Regulatory Authority for Network Industries) has been established by Zakon o elektroničkim komunikacijama (Electronic Communications Act). HAKOM is responsible for all of the main tasks assigned to national regulatory authorities under the regulatory framework for electronic communications in the EU.

	2014
Personnel ⁸	174
Increase	1.2 %
Budget	€ 10.8 Million
Increase	-13 %
Administrative charges ⁹	€ 10.4 Million
Administrative costs ¹⁰	€ 12 Million

HAKOM is also responsible for regulatory activities in the postal and, as of 2014, in the railway sector, which however did not have a substantial impact on the organisational structure of the NRA and its capacity to fulfil its regulatory tasks in the e-communication sector.

In 2014 HAKOM solved 16 disputes between undertakings. In the majority of the disputes (10 cases), the subject matter was the right to a penalty for delays in the incumbent's provision of regulated wholesale services and ancillary services. HAKOM partially upheld these claims in 9 cases. The trend towards the end of the year shows a diminishing number of these cases. Other cases mostly concerned the interconnection (co-location services to the incumbent operator, proceeds from the interconnection, the call direction) and sharing of the infrastructure

In terms of decisions, HAKOM rendered in total 5 284 decisions, out of which 28 concern market regulation, 16 dispute resolution between undertakings, 4 are on spectrum, 2 concern mergers and 2 infrastructure. Further, 162 decisions have been reached in the inspection supervision proceedings, and 1081 in the consumer disputes proceedings. There have been 4 309 decisions concerning granting, withdrawal or transfer of individual spectrum licences and 220 concerning addresses and numbering.

Regulatory decisions including supervision over regulatory obligations of HAKOM can be reviewed judicially by the High Administrative Court. Decisions in consumer disputes and inspection supervision can be reviewed judicially by the Administrative Court of first instance. The Administrative Dispute Act was amended in 2014 in a way to enhance the possibility to lodge an appeal against the first instance judgment in an administrative dispute concerning consumers. The average duration of the appeal proceedings is 2 years.

⁸ Number of staff in full time equivalents (fte).

⁹ In the sense of Art. 12 of the Authorisation Directive (Directive 2002/20/EC as amended by Directive 2009/140/EC).

¹⁰ Idem.

However, there is a substantial backlog in the High Administrative Court concerning appeals between 2012 and 2014.

66 of HAKOM's decisions were challenged. The majority of the appeals relate to consumer disputes (45) and decisions on dispute resolution between undertakings (15). 11 decisions were upheld and 3 were annulled (based on procedural reasons and incomplete factual findings). The upheld and annulled decisions do not correspond to the challenged decisions, since they mostly date from the previous years.

In 2014 Administrative courts of first instance and the High Administrative Court rendered 14 judgments. The majority of judgments in administrative disputes were rendered in the consumer disputes cases. The Misdemeanour courts of first instance and High Misdemeanour Court rendered 21 judgments altogether. All 3 judgments of the High Misdemeanour Court and 1 judgment of the Misdemeanour Court in Zagreb relate to the regulatory supervision cases against the incumbent for lack of compliance with the regulatory obligations. Other judgments relate to the inspection supervision cases.

4.2. Authorisation and licences

There is no establishment requirement for electronic communications services and /or networks providers for providers from the EU in Croatia. Such foreign operators must obtain a VAT ID number from Tax Administration of the Republic of Croatia. The foreign operator has to describe the service which it will provide in Croatia via an electronic notification system¹¹. Also, it has to enclose the original commercial court decision on its establishment accompanied by a certified translation by a court interpreter into Croatian. Currently there are four active cross-border providers in Croatia. All of these providers are from the EU.

All licences are service and technology neutral, in accordance with the usage conditions foreseen in the frequency plan. Conditions attached to spectrum licences include obligations on a minimum coverage of territory and population and, with specific regard to the licenses concerning the 800 MHz band, also to the obligation of resolving interference to TV viewers in order to preserve coexistence between new and existing services and devices. The choice of technology is left to the operator. Also, HAKOM reserved its own financial resources for filters that can be installed at TV receivers' side which facilitates the investments from operators' side.

Spectrum can be assigned on request (selection is made on 'first-come-first-served' basis) and at auction (price is the main selection criteria), where the imposition of minimum coverage obligations aims to ensure investment in the network. In December 2014 an additional 2x25 MHz has been assigned to two existing operators in the 1800 MHz band. While in total 2x32.8 MHz has been put to a public call, the demand was less than the available spectrum so there was no need for a competitive procedure. There is still 2x7.8 MHz available in this frequency band.

EMF limits in Croatia, as also confirmed in 2014 by an Ordinance of the Ministry of Health, are stricter than those at EU level. E-field strength values are 2.5 times lower compared with Council Recommendation 1999/519/EC. Stakeholders report that such

¹¹ e-Operator, a HAKOM web application, <http://www.hakom.hr/default.aspx?id=815>.

levels affect the pace of the LTE deployment. On the other hand, there is also a growing strong public opinion on potential health impacts of the EMF levels.

On 22 May 2014, the Croatian Ministry of Maritime Affairs, Transport and Infrastructure adopted amendments to the Ordinance on payment of fees for the right to use addresses, numbers and radio frequency spectrum with a main amendment concerning a 200 % increase of the annual fee for the use of radio frequency spectrum for public mobile communications networks. These amendments entered into force on 23 May 2014.

HAKOM has issued a general licence for the frequency band 1980 – 2010 / 2170 – 2200 MHz which authorises Inmarsat and Solaris Mobile to use assigned spectrum for MSS without the need for any additional licences in the Republic of Croatia. However, it should be noted that both operators are obliged to register for provision of MSS services i.e. as MSS operators. So far only Solaris Mobile has registered as an MSS operator.

5. SPECTRUM MANAGEMENT

The 800 MHz, 900 MHz, 1800 MHz, 2.1 GHz, 2.6 GHz and 3.5 GHz bands are allocated for WBB. Depending on the interest from the operators, still available spectrum in 1800 MHz, 2.1 GHz, 2.6 GHz and 3.5 GHz band can be assigned. Across the 470-790 MHz band Croatia has issued licences for digital terrestrial television which are valid until 2021. These networks are heavily deployed, covering the whole country and the majority of the population use terrestrial reception on a primary basis. In view of the above, until these licences expire, it may be difficult to make any changes to the issued licences and radio spectrum use in the 700 MHz band. Also, the 700 MHz band is affected by interferences from neighbouring countries' television broadcasting services.

All licences are service and technology neutral, in accordance with the usage conditions foreseen in the frequency plan. Spectrum trading is allowed, but until now no interest for spectrum trading was shown. There has been no need for refarming the 900 MHz and 1800 MHz bands where GSM, UMTS and LTE were already allowed. New frequency plan for the 2 GHz band ensures technological neutrality also for this band (UMTS/LTE allowed).

6. RIGHTS OF WAY AND ACCESS TO PASSIVE INFRASTRUCTURE

Currently there is no passive electronic communications and utilities infrastructure GIS database available, but there is an ongoing joint project between State Geodetic Administration and HAKOM which aims to establish electronic communications infrastructure module (GIS EKI) as a part of National Spatial Data Infrastructure (NSDI) database by the end of 2015. In the meantime, HAKOM has obliged all electronic communications operators to provide online access to their infrastructures data. Hrvatski Telekom, the most significant infrastructure owner, has provided online access to approx. 46 % of its infrastructure data.

Electronic communications infrastructure sharing has symmetrically been imposed by Electronic Communications Act and Ordinance on manner and conditions of access and shared use of electronic communications infrastructure and other associated facilities. Infrastructure sharing obligation is limited to passive infrastructure (ducts, conduits, manholes, cabinets, masts, antennae, towers etc.) and to fibre optic wiring inside

buildings up to the first concentration or distribution point. On the other hand, however, utilities companies are not mandated to provide access to their infrastructures, so it is provided on voluntary basis.

Since 2009, NGA (next generation access) wiring is mandatory for new buildings and renovations of old buildings.

In December 2014, the Ministry of Maritime Affairs, Transport and Infrastructure formed an inter-institutional working group in charge of the transposition and the implementation of Directive 2014/61/EU on measures to reduce the cost of deploying high speed electronic communication networks. There are plans to have the draft Act adopted by the end of 2015 and that the Act enters into force by 1 July 2016.

7. CONSUMER ISSUES

7.1. The European emergency number 112

The Member State has not adopted specific criteria for the accuracy and reliability of caller location but rather the caller location in mobile networks is based on a Cell ID locating system which depends on the level of service provided by the mobile operators. It is provided to the PSAP using the push-method and it is processed automatically by the competent central authority. Caller location in fixed networks is provided by using a comprehensive public address book and it is based on the pull-method. 112 is not accessible to citizens with speech or hearing problems.

There are three operational 116 European harmonised numbers for services of social value; 116000 — Centre for Missing and Abused Children (Centar za nestalu i zlostavljanu djecu), 116006 — Association for the support of victims and witnesses (Udruga za podršku žrtvama i svjedocima) and 116111 — Brave phone (Hrabri telefon — Assistance to children).

7.2. Number portability

Number portability¹²		2013	2014
Fixed	Number of transactions	134 282	116 121
	% of total numbers	-	-
	Maximum wholesale price	-	0
	Maximum time under regulation (number of working days)	5	5
Mobile	Number of transactions	146 366	159 155
	% of total numbers	-	-
	Maximum wholesale price	-	0

¹² Source: figures provided by Croatia to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe.

	Maximum time under regulation (number of working days)	3	3
--	--	---	---

7.3. Contractual obligations

There were no issues reported related to minimum commitment periods. In the case of the modification of contractual conditions, operators of public communications services must notify individually the end-users in writing or by electronic means of the proposed amendments and the right of end-users to terminate the contract at the latest simultaneously with the publication of the amendments. Where the amendments to the general terms and conditions are less favourable for the end-user compared with the contracted general terms and conditions, the end-user has a right to terminate the subscriber's contract without a charge within 30 days from the date of publication of the amendments.

7.4. Other consumer issues

There were 933 disputes between end-users and operators with 41.97 % concerning invoicing, 43.38 % other breaches of the contract, 12.08 % quality of service and 2.58 % special tariff services.

8. UNIVERSAL SERVICE

Since 1 January 2015, functional broadband access which is included within the universal service obligations guarantees a minimum speed of 1 Mbit/s. USO net costs have been calculated for the period between 2009 to 2012 for access to public telephone networks and publicly available telephone services at a fixed location, access to a telephone directory enquiry service, installation of public pay telephones and costs for providing social and/or special rates to low income users or to persons with disabilities. The power of HAKOM to analyse the existence of an unfair burden stemming from the provision of the universal services is limited by a national law stipulating that the recovery of net costs may not be requested by the universal service operator with more than 70 % share in the total revenue earned on the market of these services.

9. NET NEUTRALITY

9.1. Legislative situation

There is no net neutrality law in place in Croatia, nor a proposal for a net neutrality law. No specific self-regulatory initiatives are envisaged in the net neutrality field.

9.2. Quality of service

HAKOM is responsible for QoS implementation and monitoring. HAKOM set up a certified web tool HAKOMetar¹³ for measuring the speed of broadband internet access services and examining quality of broadband services. Operators must define the minimum broadband speed for all of their packages which contain the broadband access service up to 10Mbit/s in such a manner that it represents at least 50 % of the maximum

¹³ In 2012.

(advertised) broadband speed or maximum speed of the closest lower retail package, depending on what is more favourable for the end-user. For speeds above 10Mbits/s, the ceiling for the minimum broadband speed increases to 70 % of the maximum advertised speed.

Cyprus

1. MARKET DEVELOPMENTS

Broadband indicators (December 2014)¹	CY 2013	CY 2014	EU 2013	EU 2014
Fixed broadband coverage ²	100%	100%	97%	97%
NGA coverage ²	77%	80%	62%	68%
Fixed broadband take-up ²	63%	68%	69%	70%
Share of >30Mbps subscriptions ³	1%	4%	21%	26%
Share of >100Mbps subscriptions ³	0%	0%	5%	9%
Share of DSL in fixed broadband ³	82%	81%	73%	70%
Incumbent market share fixed broadband ⁴	66%	64%	42%	41%
HSPA Mobile broadband coverage ²	99%	99%	97%	97%
LTE Mobile broadband coverage ²	0%	0%	59%	79%
Mobile broadband penetration ⁵	42%	57%	64%	72%
Market share of leading mobile network operator ⁴	67%	66%	35%	35%

Electronic communications is a market manifesting significant dynamism in Cyprus, even amidst an important financial crisis. Competition is intensifying both in the fixed and in the mobile markets and the financial crisis has not halted investments.

Having recently acquired the 3rd MNO licence, Primetel has been deploying its mobile network benefiting from a network sharing agreement with MTN, which was expanding the footprint of its 3G network in rural areas. The agreement also permits the use of Primetel's backbone to provide backhaul to the 4G base stations. MNOs are finally launching LTE services despite the fact that the 800 MHz band remains unavailable due

¹ Sources: coverage data — studies by IHS and VVA; penetration data — figures provided by Cyprus to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe (except fixed broadband take-up, provided by Eurostat).

² % of households.

³ % of fixed broadband subscriptions.

⁴ % of subscriptions.

⁵ Subscriptions per 100 inhabitants.

to interferences from territories which are not under the effective control of the Republic and the 2.6 GHz band auction did not succeed because of lack of interest.

In the fixed broadband market, the incumbent managed to slow down the rhythm of erosion of its market share by investing in VDSL. It is also exploring possibilities for vectoring and bonding. Primetel and MTN have intensified their cooperation in remote DSLAMs. The reporting year saw an increase of 12 % in the subscriptions of new entrants from Q2 2013 to Q2 2014 leading to a 2.2 % increase in market share⁶. Not having further expanded its network — currently covering 50 % of the urban areas with 100Mbps — Cablenet had at the end of December 2014 a market share of 19.1 % and is now preparing its next NGA deployment steps. Take-up of high speed broadband remains however low (4 % of the total fixed broadband subscriptions in 2014), possibly because of its price (broadband access products are mostly offered in bundles with content), and the relatively low digital skills of the Cypriot population. While there is no data on unmanaged VoIP, its take-up appears to be increasing in particular for international voice. Fixed and mobile voice volume is resisting mainly thanks to local traffic. There are indications of fixed-to-mobile substitution, as 77 % of total calls are made by a mobile device (data for 2013), around 10 % of bundles do not contain fixed telephony, and consumer surveys show that people use their mobile phone even while they are at home. Consumers use their fixed telephone service to make 55 % of calls to fixed or mobile phones⁷. At the same time mobile broadband prices are declining.

Content drives demand for data and has provoked intense competition leading to one of the two main pay TV content providers, LTV, whose content was distributed through CATV and DTT, to go bankrupt, leaving the two other providers Cyta and Primetel to face-off. The content market has also given rise to several antitrust decisions by the CPC in the past years.

With regard to bundles, there was increase in bundle penetration (from 25 % to 27 %) between July 2013 and July 2014, attributed to an increase of the penetration of triple-play from 8 % to 10 % while the double play remained stable at 17 %. The regulator has recently published a decision outlining its approach for the *ex ante* assessment of retail bundled offers, when the bundle includes both regulated and non-regulated products.

2. MARKET REGULATION

2.1. Market analysis

Over the years OCECPR⁸ has accumulated a delay in conducting market reviews in accordance with the three-year cycle provided in Article 16(6) FD. Excluding the markets notified in 2014 and early 2015, at the time the first draft of this report was being drafted OCECPR has delayed the analysis of 9⁹ markets. Nevertheless, OCECPR is

⁶ Source: NRA.

⁷ Source: NRA.

⁸ Office of the Commissioner for Electronic Communications and Postal Regulation.

⁹ Markets 3, 4, 5, 6, 10 and 15 of the 2003 Recommendation, 1 and 2 of the 2007 Recommendation and 1 of the 2014 Recommendation [to be updated].

expecting to notify all fixed markets¹⁰ by Q1 2015, the analysis of which has been delayed due to the planned IP migration of the fixed network of the incumbent operator which was finalised during Q4 2014, as well as the market for access and call origination on public mobile telephone services. Lastly, the NRA expects to notify the market for Wholesale Access Services for the broadcasting transmission services (ex-Market 18), to deliver broadcast content to end-users by the end of 2015.

During the reporting year the OCECPR has completed the review of the retail market for the minimum set of leased lines, of the market for wholesale high-quality access provided at a fixed location, and of the wholesale market for trunk segments of leased lines. In the retail market, the OCECPR found that the three criteria test is no longer met, since wholesale regulation has significantly lowered barriers to entry in the market and the market shows tendency towards effective competition. On the contrary, the NRA proposed to designate Cyta as SMP operator on both wholesale markets. With regard to the SMP assessment on the market for trunk segments of leased lines, which is no longer listed in the Recommendation on Relevant Markets since already 2007, the NRA based its conclusions mainly on evidence of very high market shares, which remained stable over 7 years. In its comments decision, the Commission observed that the entry on the market for trunk segments faces relatively fewer obstacles compared with terminating segments and noted that there appears to be potential for entry and for expansion of alternative operators in the market. It therefore asked OCECPR to consider, already at this stage, withdrawing the price control obligation imposed on Cyta, as a first and gradual step towards full deregulation of the market.

Furthermore, early in 2015, the OCECPR notified the analysis of the market for wholesale voice termination on individual mobile networks. All mobile operators in Cyprus, three MNOs and one full MVNO are regulated. Cyta and MTN are subject to cost-oriented MTRs based on a BU-LRIC model following the 2009 Recommendation on Termination Rates the development of which OCECPR intends to outsource. The project, which is expected to run from April 2015 to February 2016, also covers an audit of the top down cost models of the incumbent and electronic tools that will enable the reconciliation of the input, process and output of the top down and bottom-up cost models. Until the results of the BU-LRIC model are finalised, the cost-oriented rate of Cyta as it is extracted from the Top Down LRIC model of the organisation and after being audited and finalised by the OCECPR is applied by both operators (around 1.09 eurocents/minute). Primetel, which will only launch its network in 2015, will benefit from a two year glide path (40 % above until 31 December 2015 and 20 % above until 31 December 2016). Cablenet will have the MTR of the hosting network.

Although it is no longer included in the list of relevant markets according to the 2014 Recommendation and a third MNO entering the market in 2015, the market for call origination and access to mobile networks is regulated and the incumbent is obliged to

¹⁰ Market for retail international telephone services at a fixed location for residential customers, the market for publicly available local and/or national telephone services provided at a fixed location for non-residential customers, the market for Wholesale Transit services in the fixed public telephone network, the market for access to the public telephone network at a fixed location for residential and non-residential customers, the market for Call origination on the public telephone network provided at a fixed location, the market for Wholesale — call termination on individual public telephone networks provided at a fixed location.

offer MVNO access. In the new round, OCECPR proposes in its draft decision currently under public consultation to continue to designate Cyta, the incumbent mobile network provider, as having SMP in the relevant market and to impose a national roaming and MVNO access remedy under cost orientation based on a bottom-up LRIC model.

In addition to *ex ante* market regulation, access to content plays a key role in Cyprus. Already in 2013, the CPC had fined Cyta for predatory pricing of its IPTV product cytavisision¹¹, and two more cases are pending from 2009-2010 and 2011-2012. The amount of the fine was, however, very low. In 2014, after an *ex officio* investigation on a 2011 agreement for the exclusive distribution of content by Cyta IPTV product, cytavisision, a Statement of Objections was sent to Cyta informing it of the intention of the CPC to impose a fine. The CPC attributes to Cyta 3 parallel infringements: a) of Article 101a TFEU for exchange of information regarding a future pricing policy; b) of Article 101b regarding the exclusive distribution agreement, which took the form of a prohibition for Forthnet to expand its activities in the Cyprus market, not being allowed to contract with Cyta's competitors, or to provide them itself; c) of Article 101c, taking the form of a communication between the two parties, which agreed not to compete for the Europa League & Champions League rights for the years 2012 to 2015.

Moreover, being an island, the role of international connectivity is key in Cyprus and has been the object of several antitrust complaints in addition to *ex ante* market regulation. Recently, the Commission for the Protection of Competition (CPC), acting on complaint by Primetel, has fined Cyta for excessive pricing and for its refusal to allow the 2013 maintenance charges to be paid in instalments¹².

2.2. Access and interconnection

Although IP interconnection between networks is currently mandated by OCECPR's market analysis decisions, OCECPR has not yet been notified of any IP interconnection agreements. In early 2015, the incumbent presented to the NRA their plan to move towards an all-IP network by the end of 2017. By March 2015, OCECPR will set a plan to inform the market regarding this development and take the necessary measures for the transition period. There are no reporting obligations imposed on the operators to improve monitoring of the IP interconnection market and the functioning of IP interconnection agreements.

3. BROADBAND PLANS AND FINANCING

The National Broadband Plan is still under preparation and it is expected to be finalised in 2016. Cyprus is on track to achieve the DAE targets thanks to private investment: the VDSL deployment of the incumbent, the DOCSIS 3.0 upgrade of the cable network and the LTE coverage obligations of the three mobile operators¹³. The Department of

¹¹ Decision 58/2012.

¹² Decision 6/2003.

¹³ According to a study conducted on behalf of the European Commission (Broadband Coverage in Europe 2013, Mapping progress towards the coverage objectives of the Digital Agenda) in 2013, 77 % of the territory was covered by NGA broadband, 54 % by VDSL, 48.7 % by FTTP and 46.2 % by DOCSIS 3.0. Rural broadband coverage is also well above the EU average, in particular for VDSL (45 % against 11.1 % EU average).

Electronic Communications (DEC) is currently trying to secure private and public buy-in and funding for the roll-out of a high speed broadband network, capable of speeds well above 100 Mbps, estimated at more than EUR 200 million. It is currently running a techno-economic study which includes the economic viability of the project, which would cover the entire territory and which could be extended in the context of the EFSI to include an international connectivity part (submarine cable connection with the rest of Europe, Middle East and Africa). The total amount of State aid provided in the EU Structural and Investment Funds is EUR 22 million¹⁴.

4. INSTITUTIONAL ISSUES

4.1. The National Regulatory Authority

The (OCECPR) (Office of the Commissioner for Electronic Communications and Postal Regulation) is responsible for the main tasks assigned to national regulatory authorities under the regulatory framework for electronic communications in the EU. The Department of Electronic Communications (DEC) of the Ministry of Communications and Works is competent for spectrum assignment and management, eSignature, Information Society Strategy and Space Strategy issues.

	2014 OCECPR	2014 DEC
Personnel ¹⁵	40	9
Increase	-2.50 %	-25 %
Budget	€ 4.8 Million	€ 1.331 Million
Increase	5.67 %	0.2 %
Administrative charges ¹⁶	€ 3.1 Million	
Administrative fees		€ 1.386 Million ¹⁷
Administrative costs ¹⁸	€ 2.7 Million	€ 1.366 Million ¹⁹

The DEC was initially only responsible for radio communications. Since 2008-2009, it also exercises responsibilities in the area of Information Society, Electronic Signatures and Space. While it should have been reinforced with 11 additional staff in order to carry out these tasks, these positions are still not filled.

In 2014, the Commissioner issued one decision resolving a dispute between Cablenet and Cyta, by imposing a fine of EUR 5 000 to Cyta for rejecting a co-location request and ordered Cyta to notify to the Commissioner each rejection. In early 2015, the NRA issued its decision on a dispute resolution request filed by MTN against Cyta, regarding the calculation of the price for co-location in Cyta's ducts. Despite a Supreme Court judgment at first instance rejecting Cyta's defence that it is not in a position to apply the methodology imposed by 2008 secondary legislation, the incumbent still claims that it

¹⁴ Indicative amount.

¹⁵ Number of staff in full time equivalents (fte).

¹⁶ In the sense of Art. 12 of the Authorisation Directive (Directive 2002/20/EC as amended by Directive 2009/140/EC).

¹⁷ The figure represents application & operation fees). DEC also revies annually 25 % value of spectrum which amounts to € 0.461 Million.

¹⁸ Idem.

¹⁹ The figure concerns 2013.

does not have the necessary data to calculate the historic cost of the ducts. OCECPR decided in favour of MTN and imposed a € 50000 MT fine to Cyta for not applying the methodology defined in secondary legislation. The regulator noted in its decision that the methodology should have been applied since the date of effect of the secondary legislation and sent the parties to the Court to claim retroactive compensation. In 2014, one first instance judgment was issued on an appeal filed by the incumbent against a regulatory market review decision. The Court ruled that the bundling of various issues, such as the definition of the relevant market, the market analysis, the designation of operator holding significant market power and finally the imposition of the regulatory obligations, hinders judicial review. This decision is another chapter in a long saga of conflicting case-law from Supreme Court judges at first instance. The Commissioner has appealed the judgment. Only one decision of the Commissioner was appealed in 2014, while six appeals to the Plenary of the Supreme Court were launched against first instance judgments.

The DEC has issued a number of regulatory and individual decisions none of which have been appealed. In 2014, the Supreme Court delivered two judgments in relation to the auction for the use of Radio Spectrum and the Establishment and Operation of a Network for Digital Terrestrial Television (DTT).

4.2. Authorisation and licences

The 3rd MNO licence, awarded to Primetel, includes the following geographical coverage obligations: to deploy a broadband network (UMTS or/and 4G) that will cover 40 % of the area under the control of the Republic, within three years from the date of issue of the authorisation (i.e. February 2014), and 65 % of the area within five years from the date of the issue of the authorisation. Thanks to a network sharing agreement with MTN, Primetel launched MNO services in March 2015, providing UMTS and LTE services. Similar coverage obligations have been imposed to the incumbent operators (MTN, Cyta) in the context of the refarming of their spectrum, to be fulfilled within five years from the date of amendment of their authorisations (i.e. October 2013). All operators also have access speed obligations: to offer consumers internet speeds of at least 30 Mbps by 2019. MTN also launched their LTE network in March 2015. Cyta is expected to launch LTE services in 2015.

Both MSS operators were authorised in 2014. Since both licences were granted after the Cocom discussions, no enforcement measures were taken, but the new milestone dates (set out in Cocom) are included within the licenses.

In 2010, Velister, the private DTT provider, filed an appeal to the Supreme Court challenging a DEC & OCECPR decision that the other participants, in the auction which led to the assignment of its right of use (LRG and Cyta) met the minimum requirements required by the auction documents in relation to the existence of sufficient financial resources. At first instance, Velister has succeeded in its application. For the Court, the decision to consider that the LRG and Cyta met the minimum requirements of the competition was an independent administrative act and could be challenged in itself and was taken without prior adequate research and sufficient justification. The Republic of Cyprus has submitted an appeal to the judgment of the Supreme Court. Moreover, LRG also filed an appeal to the Supreme Court (appeal No 1457/2010), challenging DEC's and OCECPR's decision, which proclaimed Velister as the provisional highest bidder of the auction. The Supreme Court ruled that the challenged decision was not an

independent administrative act and could not be challenged separately from the final decision. The LRG has submitted an appeal to the judgment of the Supreme Court.

5. SPECTRUM MANAGEMENT

Regarding the assignment of the 800 MHz band, the European Commission has granted Cyprus derogation from the deadline of Article 6(4) of Decision No 243/2012/EU (RSPP) until the spectrum issues encountered by the Republic of Cyprus in this band due to interferences from the areas not under the control of the Republic are resolved or until 31 December 2015, whichever occurs first. In light of the results of the measurements taken during the second half of 2014 by the Department of Electronic Communications, it appears that the spectrum issues encountered in the 800 MHz band have not been effectively resolved and therefore it cannot implement the authorisation procedure in such a way as to allow the use of the 790-862 MHz band for electronic communications services other than broadcasting. Nevertheless, the DEC has decided to initiate a new procedure in order to assign the band, based on market demand. A public consultation document is expected to be published within the coming months. This new authorisation procedure will also include the 2500-2690 MHz band and the 3400-3800 MHz band.

Part of the 700 MHz band is currently used for DTT by the commercial network operator Velister, which has all of its multiplexers (five) deployed in this band. The Public Sector Broadcaster, CyBC operates a multiplexer in a lower band. Cyprus does not dispose of any available channel for DTT below the 700 MHz band, and this currently excludes any discussion for a future second digital dividend, in light of the difficulties it faces in securing channels in the regional ITU negotiations. Cyprus has started a coordination procedure with its neighbouring countries, based on the GE06 agreement, to ensure DTT channels below the 700 MHz band.

The authorisations granted in the 900 MHz, the 1800 MHz and the 2100MHz are service and technology neutral. Spectrum trading is allowed for satellite resources (orbital positions and relative frequencies) and for a number of frequency bands²⁰.

6. RIGHTS OF WAY AND ACCESS TO PASSIVE INFRASTRUCTURE

The OCECPR procured hardware and software for a mapping tool covering all relevant electronic communication infrastructures, which will be operational by end 2015. The tool is planned to evolve into an electronic Single Information Point by incorporating the procedure for the granting of rights of way which is currently manual.

The maximum time for granting rights of way for fixed networks is set at four weeks; after this time, the request is tacitly approved. The maximum time for granting permits for antennae and base stations is set at six weeks. Access to infrastructure is mandated both on symmetric and asymmetric basis. There is also cross-utility cooperation between the energy utility and telcos.

²⁰ a) 790-862 MHz, b) 880-915 MHz, 925-960 MHz, c) 1710-1785 MHz, 1805-1880 MHz, d) 1900-1980 MHz, 2010-2025 MHz, 2110-2170 MHz, e) 2500-2690 MHz, f) 3400-3800 MHz, g) 470-790 MHz.

7. CONSUMER ISSUES

7.1. The European emergency number 112

In view of the low 112 awareness registered in Cyprus in the past, several awareness raising campaigns were launched in 2014 with positive results. In 2015 the Ministry is planning an art competition for children aged 10-12 years old, with the collaboration of the Ministry of Education and Culture, while Cyprus Post will use a stamp dedicated to 112 during the second week of February in order to stamp all incoming and outgoing mail. MCW asked all mobile providers to send a message to their clients on 11 February 2015 informing them about 112. Providers also dedicate space to 112 in their printed material or websites. Furthermore, the TV channels are expected to show a short film about 112 every day between 11 and 28 February 2015, produced by the Public Information Office. Lastly, the Ministry of Communications and Works requested that the members of the Hotel Association display a short message about 112 in their receptions and in each guest room and that posters be placed in the arrivals areas of airports and ports.

7.2. Number portability

Number portability ²¹		2013	2014
Fixed	Number of transactions	7,337	10,616
	% of total numbers	2.1%	3.2%
	Maximum wholesale price	16.6	16.6
	Maximum time under regulation (number of working days)	7	7
Mobile	Number of transactions	28,340	33,772
	% of total numbers	2.5%	3.0%
	Maximum wholesale price	9.4	9.4
	Maximum time under regulation (number of working days)	4	4

The number portability framework is in the process of being amended, in order to automate and optimise it. The project is expected to be concluded by the end of Q3 2015.

7.3. Other consumer issues

The main sources for consumer complaints in 2014 were according to the NRA pricing and billing. There was one complaint regarding access to non-geographic numbers cross-border, and three complaints for access to domestic non-geographic numbers. The cross-border accessibility for priced services numbers 900XXXXX, 909XXXXX and free call numbers 800XXXXX are subject to each provider's internal procedures. The Cyprus Consumer Association reported having received complaints on number portability, service availability and quality, and roaming.

²¹ Source: figures provided by Cyprus to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe.

8. UNIVERSAL SERVICE

The scope of the Universal Service (US) changed in 2014, by removing the obligation to provide a printed telephone directory and public payphones. In 2014, the US provider submitted a request to calculate the unfair burden of the provision of the universal service obligation in 2012. The request was rejected by the NRA and therefore a financing mechanism has not been activated. Nevertheless, in November 2014, the Commissioner for Electronic Communications appointed a committee which will be responsible for managing the compensation fund covering the net cost of the provision of the Universal Service for a six year term.

9. NET NEUTRALITY

9.1. Legislative situation

OCECPR completed the implementation of 2B2T²² a System for Performance Evaluation of Broadband Connection Services, which uses tools/functionality offered by Measurement-lab, in order to enable users, the NRA and ISPs to draw conclusions on the quality of the delivered broadband services per country and globally using NDT tools (data transmission speed (downstream), data transmission speed (upstream), delay, delay variation (jitter), packet loss). Furthermore, the Glasnost tool, included in the 2B2T suite of tools, enables the end-user to determine if an ISP uses traffic shaping on selected services like P2P, video streaming etc.²³.

9.2. Quality of service

OCECPR is responsible for quality of service implementation and the monitoring of the quality of service in the sector, and specific aspects such as internet speed and other parameters. It is currently in the process of establishing performance indicators for broadband connections (transmission speed as upload and download speed, delay, delay variation, packet loss ratio, packet error ratio). The project is expected to be implemented in 2015.

²² <http://2b2t.ocecpr.org.cy>.

²³ Each Glasnost test measures the path between the client and the server by generating flows that carry application-level data. This data is carefully constructed to detect traffic differentiation along the path. Glasnost tests all possible combinations of flow patterns and port numbers to detect throttling that is based either on port number detection or even deeper packet inspection.

Czech Republic

1. MARKET DEVELOPMENTS

Broadband indicators (December 2014)¹	CZ 2013	CZ 2014	EU 2013	EU 2014
Fixed broadband coverage ²	99%	98%	97%	97%
NGA coverage ²	64%	67%	62%	68%
Fixed broadband take-up ²	-	76%	69%	70%
Share of >30Mbps subscriptions ³	24%	26%	21%	26%
Share of >100Mbps subscriptions ³	4%	5%	5%	9%
Share of DSL in fixed broadband ³	34%	32%	73%	70%
Incumbent market share fixed broadband ⁴	31%	29%	42%	41%
HSPA Mobile broadband coverage ²	95%	97%	97%	97%
LTE Mobile broadband coverage ²	12%	92%	59%	79%
Mobile broadband penetration ⁵	52%	64%	64%	72%
Market share of leading mobile network operator ⁴	40%	39%	35%	35%

The Czech Republic has made progress towards the achievement of the DAE targets in the reporting period. The fixed broadband take-up was above the EU average which reached 76 % as of December 2014 (70 % in the EU). NGA coverage in the Czech Republic is close to the EU average of 68 % reaching 67 % as of December 2014. The share of subscriptions of ultra-fast broadband (at least 100 Mbps) accounted for 5 % of all subscriptions.

The Czech fixed broadband market continues to be characterised by a strong infrastructure based competition. DSL technology followed the declining trend from previous years and represented a share of 32 % in the fixed broadband market with the incumbent being the leading provider. The share of non-DSL broadband lines remains

¹ Sources: coverage data — studies by IHS and VVA; penetration data — figures provided by Czech Republic to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe (except fixed broadband take-up, provided by Eurostat).

² % of households.

³ % of fixed broadband subscriptions.

⁴ % of subscriptions.

⁵ Subscriptions per 100 inhabitants.

high at 68 %, with WLL and cable being the most significant platforms. The high share of alternative operators in the fixed broadband market standing at 71 % belongs to the highest in the EU; the market share of the incumbent is decreasing only slightly year by year (29 %). The take-up of mobile broadband reached 64 %, below the EU average of 72 %.

The incumbent started building DSLAMs in street cabinets while testing of VDSL-vectoring in its network. The biggest cable operator, provides its services under DOCSIS 3.0 standard. The FTTH deployment has been realised mainly by the local operators, which were originally WiFi operators.

2014 was a year of large-scale LTE deployment. Three mobile operators received the frequencies intended for LTE in February 2014 and were building the network throughout 2014. Services over the LTE network on the commercial basis were first offered in 2012, although only to a limited extent. Large-scale services were only offered in 2014.

In 2014 a significant expansion of the MVNO market took place in the Czech Republic. Several new MVNOs came onto the market, mainly service providers, while some have exited the market. MVNOs set up arrangements with MNOs on a commercial basis, without regulatory intervention. There are currently approximately 80 MVNOs or MVNEs. Licence conditions related to the spectrum for 4G networks set the obligation to provide wholesale offers. It is estimated that MVNOs may represent approximately 5 % of the mobile market. The entrance of MVNOs has contributed to the wider choice of services for consumers and positively influenced the level of retail prices, together with other factors such as decrease of MTRs or introduction of new attractive flat rates.

In terms of acquisitions, an important merger between T-Mobile Czech Republic and T-Systems Czech Republic took place at the beginning of 2014. Later in the year T-Mobile Czech Republic merged with GTS Czech. In both cases T-Mobile was the successor company.

2014 was important in terms of corporate governance of the incumbent operator (O2 Czech Republic) mainly due to the sale of the majority of shares in the company to the financial group PPF Group. PPF Group gained a 65.9 % majority of shares on 28 January 2014 by purchasing them from Telefónica, S.A. Over the course of 2014, PPF Group gained a total of 83.2 % of shares in the share capital of the company. Following the change in stakeholders, the name of the incumbent changed from Telefónica Czech Republic a.s. into O2 Czech Republic a.s. as of 21 June 2014.

In terms of network sharing, an agreement was concluded between T-Mobile and O2 regarding the sharing of 2G, 3G and 4G networks. The sharing of 2G and 3G networks consists of full sharing of the radio access network, where customers of one operator can use the (access and backhaul) network of the other operator, on the common grid. Each operator has the RAN connected to its backbone network. The agreement is contested by Vodafone, the third MNO on the market, not included in the agreement, who claims that the scope of the network sharing is unprecedentedly broad, inter alia in terms of combined market share of the parties (approximately 80 %), sharing all layers of infrastructure and the application of the geo-split principle to the entire territory of the country except Prague and Brno. Despite reassurances from the partners that they will still compete in terms of speed and quality of service, Vodafone considers that the

agreement will impede competition in the market and can result in its marginalisation on the market, ultimately to the detriment of consumers.

In March 2015 the incumbent announced a separation between its retail and infrastructure arm. The spin-off of the infrastructure company took effect as of 1 June 2015. The new infrastructure company took over fixed public communications network, physical infrastructure of a public mobile communications network and Data Centres.

It is understood that the main reason for the separation is to provide more transparency to operations at wholesale level, thus possibly allowing O2 to prevent allegations of market squeeze if it undertakes more aggressive retail pricing strategies. In this context, Vodafone has recently sued O2 before civil court seeking damages for alleged abuse of dominant position in the Czech fixed broadband market, in essence through market squeeze practices.

In addition, in the opinion of O2, the separation will have a positive impact on access to funding (being able to reflect better different risk profiles of wholesale and retail operations) and thus will ultimately lead to higher level of investments.

The Czech Telecommunication Office (CTO, see section 4. below) did not observe any significant changes in market shares during the last year. Incumbents' market share is slightly decreasing on the fixed retail broadband market as well as on the wholesale markets — Markets 3a and 3b, incumbents' market share is decreasing mainly due to gradual development of local FTTx networks. The mobile market in the Czech Republic is experiencing a gentle growth of MVNOs.

2. MARKET REGULATION

2.1. Market analysis

The analyses of former markets 4, 5 and 6 (2007 Recommendation of relevant markets) were completed⁶ at the end of 2014. CTO is currently preparing measures dealing with the imposition of remedies on former markets 4 and 5. CTO expects to impose remedies regarding NGA networks (including physical or virtual access). These obligations are in line with the NGA recommendation and the Non-discrimination and costing methodologies recommendation. Namely obligations for (1) full or virtual access to fibre networks, (2) access to physical (passive) infrastructure, (3) EoI (Equivalence of inputs) non-discrimination for fibre networks and (4) principles of KPI, SLA and SLG. CTO is foreseeing new reviews of the relevant markets after the voluntary separation of the incumbent.

With regard to the termination rates and their compliance with the Recommendation on termination rates, pure BU-LRIC MTR (0.27 CZK/min.) has been applied since July 2013 on the three biggest MNOs. In July 2014, the regulated MTR was also imposed on the fourth MNO (Air Telecom). MTRs are applied in symmetrically. The fixed termination rate is set from May 2014 at 0.03 CZK/min.

⁶ CZ/2014/1647, 1648, 1673.

3. BROADBAND PLANS AND FINANCING

In July 2014 the Czech government adopted the Operational Programme Enterprise and Innovations for Competitiveness of the Czech Republic 2014-2020. Under this Operational Programme, for the first time, the Czech Republic will allocate substantial public funds for broadband deployment, namely EUR 521.4 million, with additional EUR 275.1 million of national co-financing. The Operational Programme will support building high speed access networks (NGA), which will include upgrading of the current networks, roll-out of new networks and creating of the passive infrastructure for high speed access to the internet.

The Ministry of Industry and Trade is now preparing an implementation strategy for the broadband part of the Operational Programme. It is assumed that it will be based on the revised version of the State policy on electronic communications, 'Digital Czech Republic 2.0.', adopted by the Government in March 2013.

The revised state policy defines 17 specific measures. One of the most important measures is aimed at the support of NGA network deployment. In this respect the CTO, in cooperation with the Ministry of Industry and Trade (MIT), started the development of funding tools and plans for reaching the DAE goals. CTO and MIT performed a detailed mapping of the broadband infrastructure. A Passive Infrastructure Register is planned to be established in line with the State policy on electronic communications Digital Czech Republic 2.0.

Stakeholders are appreciating the possible benefits in broadband deployment of the transposition of the Cost Reduction Directive. In view of the delay of the start of the legislative process there is a high risk that the transposition deadline will not be respected. The European Commission will closely monitor the situation.

4. INSTITUTIONAL ISSUES

4.1. The National Regulatory Authority

The Czech Telecommunication Office (CTO, *Český telekomunikační úřad*), was established by the Electronic Communications Act (Zákon o elektronických komunikacích No 127/2005 Coll.) as amended. The CTO is an independent NRA according to the regulatory framework and is vested with the main regulatory tasks, including the regulation of electronic communications services and networks, radio spectrum management, market regulation, consumer protection and definition of the conditions for business activities in the areas of electronic communications. The CTO is also responsible for the postal services regulation. The Ministry of Industry and Trade (MIT) is responsible for preparation of the national legislation regarding the electronic communications, preparation of the State policy on electronic communications and other strategic documents in the electronic communications sector and international cooperation.

	2014⁷
Personnel ⁸	629
Increase	-1.56 %
Budget	€ 26.718 Million
Increase	4.22 %
Administrative charges ⁹	€ 39.658 Million
Administrative costs ¹⁰	€ 3.796 Million

The CTO has a five-member Council appointed gradually for a five-year term. One of the members is appointed as the Chair of the Council with a mandate not exceeding 3 years. The members and the Chair of the Council are appointed and withdrawn by the Government of the Czech Republic on proposal submitted by the Minister of Trade and Industry. The Chair of the Council and other members of the Council can be dismissed only for explicitly stated reasons, such as serious breach of duties or illness.

The CTO submits their annual report to both Chambers of Parliament and to the Government of the Czech Republic, at the same time the annual report is published. Moreover the CTO issues on a monthly basis monitoring reports on the market and price developments. The appeal mechanism against the CTO's decisions consists of a two-instance administrative proceeding in accordance with general administrative law. The final decisions of the CTO can be reviewed and overturned only by courts. Five decisions in 2014 were challenged before the court, two decisions were upheld and the process is ongoing regarding three. The average duration of an appeal proceeding is 6 months.

The Supreme Administrative Court of the Czech Republic submitted for preliminary ruling of the European Court of Justice on 23 October 2014 (7 As 131/2013) issues regarding the case of the complaint for annulment against the judgment of the Municipal Court of Prague, (ref. No 54/2011 3 A — 181), concerning the review of an administrative decision issued by CTO regarding the assessment of the amount of 'demonstrable losses' under the universal service provision in 2004.

4.2. Authorisation and licences

The Commission has concerns related to the implementation of the general authorisation regime in the Czech Republic. It appears that, contrary to EU law, the Czech Republic requires, as part of the notification procedure, telecom providers to establish themselves in the country in order to provide telecom services. The Commission also has concerns that the country requires providers to submit more information than is needed and foreseen by the Authorisation Directive, such as certificates attesting that all possible tax and healthcare obligations towards the state are fulfilled. The European Commission will continue to monitor developments in this area.

⁷ Source: CTO

⁸ Number of staff in full time equivalents (fte).

⁹ In the sense of Art. 12 of the Authorisation Directive (Directive 2002/20/EC as amended by Directive 2009/140/EC).

¹⁰ Idem.

5. SPECTRUM MANAGEMENT

The assignment of spectrum licences in the 800, 1800 and 2600 MHz bands in the 2013 auction was followed in 2014 by a massive LTE deployment, in particular in the 800, 900 and 1800 MHz bands. CTO is planning to auction the remaining frequencies in the 1800 MHz and 2600 MHz bands and is considering organising a selection procedure for the assignment of licences in the 3.6-3.8 GHz band.

Throughout 2014 CTO prepared a draft 'Spectrum Management Strategy' which was submitted to public consultation. The resulting version was presented to the Minister of Industry and Trade (MIT). MIT assumed the finalisation of the document while submitting it to an inter-ministerial consultation. The final document is planned to be submitted for Government approval by June 2015. The goal of the strategy is to create a basis for achieving the objective of the Digital Agenda for Europe and the Digital Czech Republic 2.0. The main objectives are the following: 1. support of further deployment of high speed internet access networks allowing transmission speeds in line with the goals stated in the Digital Agenda for Europe. 2. efficient use of radio spectrum for the benefit of end-users. 3. increase of ICT availability regardless of the location.

As regards the 700 MHz band the State policy on electronic communications stipulates that the frequency band will be made available for wireless broadband services after the completion of the migration process to DVB-T2. The migration to DVB-T2 will be conditioned by the Government's relevant policy decisions.

In the Czech Republic, the principle of service neutrality has been fully implemented in the harmonised MFCN (Mobile Fix Communication Networks) bands. Spectrum sharing is allowed within all MFCN bands provided that operators' business strategies are independent. There are no obstacles for tradability of rights and sharing of spectrum, except for the temporary limitation of spectrum rights transfer resulted from the 4G auction conditions.

6. RIGHTS OF WAY AND ACCESS TO PASSIVE INFRASTRUCTURE

The procedures for granting rights of way are set out in the Electronic Communications Act, however the process of granting permissions is held at local building authority. In general the operators consider the procedure for granting rights of way to be cumbersome as a result of the length of the whole process and due to differences in application/interpretation of the law by local authorities. The administrative procedures for granting rights of way can exceed six months, depending on the type of network and the size of installations. In this respect the stakeholders expressed a desire to unify and harmonise the building authorities' practices and to introduce a common approach across the country. An electronic submission of requests is still not available.

The Czech Republic is currently in the early stage of developing a passive infrastructure mapping mechanism. A Passive Infrastructure Register will be established in line with the State policy on electronic communications Digital Czech Republic 2.0 and the role of the single information point set by the BB Cost Reduction Directive. Such tools will contribute to the reduction of the costs of Building access networks. The launch of a full operation is expected as of 1 January 2017. The related legislation (i.e. the Electronic

Communications Act and the Construction Act) will be amended accordingly while implementing the BB Cost Reduction Directive.

In accordance with the Electronic Communications Act, the NRA is entitled to impose an obligation on the SMP operator to grant access to specified network elements or facilities, including passive parts. However, the obligations for access to passive infrastructure are currently not mandated and might be addressed within the ongoing review of the market for physical network infrastructure access (market 4). Access to other utilities infrastructure is not offered. Access to publicly financed works is also not provided. There is a limited coordination of civil infrastructure works and a registry of permits for civil works is not in place. There are no obligations to communicate in advance the planned investments in networks.

7. CONSUMER ISSUES

7.1. The European emergency number 112

In addition to 112, there are four specific national emergency numbers (i.e. fire department, rescue/ambulance, police and metropolitan police) in operation. SMS and text relay services, as an alternative means of access to emergency services for disabled end- users, are available in the Czech Republic.

There is no legislation in place laying down caller location accuracy and reliability criteria as envisaged in Article 26(5) of the USD. There are no particular measures to ensure equivalent access to emergency services for disabled end-users, only those which are being imposed within the universal service obligation. This includes access for disabled people to the publicly available telephone service, to the directory service and to the directories at the same level of quality as the access enjoyed by all other end-users, in particular by means of specially provided terminal equipment.

7.2. Number portability

Number portability ¹¹		2013	2014
Fixed	Number of transactions	623,279	583,762
	% of total numbers	-	-
	Maximum wholesale price (CZK)	14.8	12.3
	Maximum time under regulation (number of working days)	4	4
Mobile	Number of transactions	312,338	515,000
	% of total numbers	2.3%	3.7%
	Maximum wholesale price (CZK)	8.6	7.9

¹¹ Source: figures provided by Czech Republic to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe.

	Maximum time under regulation (number of working days)	4	4
--	--	---	---

The amount of number ported is constantly increasing although the number of transactions in the fixed sector decreased from 623 279 in 2013 to 583 762 in 2014. Meanwhile the amount of ported numbers hiked in the in the mobile sector where the transactions increased from 312338 in 2013 to 515 000 in 2014.

The wholesale charges for porting a number stood at € 7 on average for mobile numbers and at € 11 for fixed numbers in 2014. The end-users porting a mobile number are either not charged at all or are subject to a symbolic price of 1CZK. The retail prices for fixed number porting are derived from wholesale prices.

7.3. Contractual obligations

Section 63 of the Electronic Communications Act (ECA) provides for a limitation of fixed-term contracts to 24 months when concluded for the first time. Service providers should also have in their offer a 12 month contract.

In December 2014 Section 63 referring to the right of subscribers to withdraw from their contracts was amended. Hence the provider must inform subscribers in advance about changes of their contracts at least one month before the change is effective. Where a modification worsens the subscriber's position and the contract has been concluded with a penalty for premature termination, the provider must also inform the subscriber about his right to terminate the contract without penalty no later than the modification is effective.

7.4. Other consumer issues

The CTO continues to provide a quality handling service to consumers. CTO has received 2862 consumer complaints during 2014. The complaints are mostly related to incorrect invoicing, quality of service, consumer contracts and number portability.

The CTO is monitoring tariff transparency on a regular basis. In this respect the CTO has granted an accreditation for three tariff calculators that are considered a transparent tool for consumers to compare the offers on the market and to assess which offers provide the best value (in terms of price, features, services etc.) for their specific usage. These Tariff calculators can be found on: www.tarifon.cz, www.kalkulacka.korektel.cz, www.tarifomat.cz.

8. UNIVERSAL SERVICE

The following services are included in the scope of universal service in the Czech Republic: provision of public pay phones, access for disabled persons to the publicly available telephone services (PATs) and special tariff plans. The following components of universal service remain out of scope of the universal service obligation as they are considered to be available in the market under normal commercial conditions: connection and access at a fixed point to the public network, directories and directory enquiry services.

The designation of the universal service provider for any of the services mentioned above is done through a tender procedure at national level. The designation mechanism ensures in general the accessibility of the universal service on the whole territory of the Czech Republic. No operator is *a priori* excluded from the selection process. Currently obligations are imposed to provide the following partial services: public payphone, special measures for disabled users and special tariffs. The incumbent operator (O2 Czech Republic a.s.) is designated as the provider of public payphone services until 31 December 2017, special measures for disabled users (access for disabled persons to PATS) until July 15 2015 and special tariff until 3 July 2017.

The universal service in the Czech Republic is financed from public funds since 2010. The net costs for the provision of the universal service in 2013 were set at CZK 46.9 million and were compensated from the state budget.

9. NET NEUTRALITY

9.1. Legislative situation

Net neutrality is not currently being addressed in the national legislation in force with the exception of the general provisions on equality in the provisions of services. However in December 2013 the CTO issued guidelines on the data traffic management in the provision of Internet access service. The key pillars are non-discriminatory traffic treatment before a data cap is reached and transparency of information for end-users.

9.2. Quality of service

CTO is responsible for quality of service implementation and the monitoring of the quality of service in the sector, and specific aspects such as internet speed and other parameters.

The CTO has issued a secondary legislation laying down the service quality parameters to be measured, and the content, form and manner of publishing information on the current prices, quality and conditions of the provision of publicly available electronic communication services and the measures to ensure equitable access for disabled users and the quality assessment procedures. This secondary legislation is in force since 1 July 2012.

CTO introduced the monitoring of download speed provided by the base stations, which were brought into operation. The download speed limit obligation imposed to MNOs resulted from 4G auction.

At the end of 2014 CTO specified basic QoS parameters (download speed, upload speed and latency) and published the general methodology of IP services QoS monitoring.

CTO is able to measure download speed, upload speed and latency of mobile networks. It is planned to implement such measurements on fixed IP networks in 2015.

Denmark

1. MARKET DEVELOPMENTS

Broadband indicators (December 2014) ¹	DK 2013	DK 2014	EU 2013	EU 2014
Fixed broadband coverage ²	99%	99%	97%	97%
NGA coverage ²	83%	92%	62%	68%
Fixed broadband take-up ²	81%	79%	69%	70%
Share of >30Mbps subscriptions ³	25%	33%	21%	26%
Share of >100Mbps subscriptions ³	2%	3%	5%	9%
Share of DSL in fixed broadband ³	51%	49%	73%	70%
Incumbent market share fixed broadband ⁴	60%	58%	42%	41%
HSPA Mobile broadband coverage ²	99%	99%	97%	97%
LTE Mobile broadband coverage ²	74%	99%	59%	79%
Mobile broadband penetration ⁵	102%	116%	64%	72%
Market share of leading mobile network operator ⁴	41%	39%	35%	35%

The overall dynamics of the Danish telecom market are marked by growing competition and dynamism in the mobile sector, boosted by constant growing data consumption, and a stable situation in the fixed sector, still dominated by the incumbent *TDC*. The sector as a whole still suffered from the general economic downturn in 2014, with a constant decrease in terms of investment and revenues reported by operators.

In the fixed telephony market, *TDC* remains the leading operator with a market share for all types of calls by traffic volume of 64.4 %, a decrease of 1 percentage point from January 2014 to January 2015. In the mobile telephony market, the incumbent market share for subscriptions also decreased from 40 % to 37.8 %. There are 38 mobile

¹ Sources: coverage data — studies by IHS and VVA; penetration data — figures provided by Denmark to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe (except fixed broadband take-up, provided by Eurostat).

² % of households.

³ % of fixed broadband subscriptions.

⁴ % of subscriptions.

⁵ Subscriptions per 100 inhabitants.

operators active on the Danish market. The Danish regulator reports a significant drop of the usage of SMS with a 10.5 % decrease from 2013 to 2014, while mobile voice usage has increased by 4.6 % over the same period. Voice traffic represented 25 % on fixed networks and 75 % on mobile networks in 2013. In the field of fixed broadband, the NGA take-up has progressed as NGA subscriptions represented 53 % in January 2015, compared with 42 % in January 2014 and with an EU average of 31 % in January 2015. As to mobile broadband, the rate of mobile broadband penetration was 116 % in 2014, well above the 72 % EU average. LTE is widespread in Denmark and is currently offered by all 4 MNOs and a number of other service providers. The number of LTE sites reached approximately 7150 sites as of 1 April 2015.

Convergence is gaining more and more importance in the Danish market and just like the availability of OTT services, TV content is reported to be an important driver in terms of consumer's choice. In this respect, more than half of all fixed broadband subscriptions are sold in a fixed bundle and the Danish regulator reports an increase of 95 000 subscriptions between January 2014 and January 2015, 98 % of which included a TV offer. In July 2014, the penetration of bundle offers represented 21 % (subscriptions/population), still below the EU average of 41 %. Fixed broadband can be provided by DSL (99.9 % of households), VDSL since 2008 (20.7 % of households), FTTP (54.9 % of households), standard cable (99.9 % of households) and Docsis 3 cable (60.9 %). VULA has been implemented in a contended and an uncontended version since 2013 (with a take-up of 42 000 VULA connections as of 1 January 2015) and vectoring since 1 January 2015. In terms of technology market shares for fixed broadband subscriptions, DSL represented 49 % (VDSL included), cable 28 % and FTTH/FTTB 21 % in January 2015.

Against this background, the fixed broadband market competitive situation has been analysed in a study by the Ministry of Business and Growth which was published in December 2014. The study points out a number of structural factors identified as unlikely to conduce to sustainable competition at this stage. These concern first a very high and stable concentration rate with the leading presence of TDC both in broadband, TV and all bundles, and then their operating on copper/DSL and coax infrastructures, other players being limited to a regional footprint or being dependent over TDC's network. The study identifies and assesses a number of options to remedy this situation.

Consolidation is still happening on the Danish market. After the acquisition of *ComX* by *TDC* and of *Stofa* by *Syd Energi* in 2012, a deal involving two wireless Nordic players was notified to the European Commission on 27 February 2015. This follows a network sharing agreement signed in 2012 by the two players.

In this perspective, national merger rules in the telecom sector are being reviewed to match the specific circumstances of the telecom market. The bill, presented before the Parliament at the end of February 2015 and expected to enter into force on 1 July 2015, modifies the criteria for scrutiny. While under general merger rules deals are investigated when companies have a turnover of at least 100 million DKK and combined turnover of 900 million DKK, deals in the telecom sector will be scrutinised when only the 900 million DKK thresholds applies if the merger is connected to a market regulated by DBA.

2. MARKET REGULATION

2.1. Market analysis

Market analyses by the DBA are conducted in due course and no delays are reported.

On 4 December 2014, and taking into account the comments issued by the European Commission on 24 November 2014, the DBA adopted a measure concerning the review of the LRAIC model and prices set on the wholesale markets for call origination and call termination on the public telephone network provided at a fixed location, wholesale (physical) network infrastructure access at a fixed location (fibre and copper) and wholesale broadband access (fibre, copper and coax).

On 9 October 2014, the Commission registered notifications from the DBA concerning LRAIC price levels on the wholesale markets for voice call termination on individual mobile networks and SMS termination on individual mobile networks in Denmark. The price caps for mobile voice call termination were set at DKK 0.0606/minute (approximately 0.814c€/min.) and at DKK 0.0111/SMS (approximately 0.149c€/SMS) for SMS termination. The Commission did not comment on the measures, which were finally adopted on 5 December 2014.

On 25 June 2014, the Commission registered a notification from the DBA concerning multicast price remedies on the market for wholesale access to the local loop for broadband and/or voice services in Denmark. The Commission did not comment on the measure, which was finally adopted on 4 August 2014.

On 7 May 2014, the Commission registered a notification from the DBA concerning the market for wholesale broadband access in Denmark. The measure extended the existing accounting separation obligation, applicable with respect to broadband access provided over TDC's copper and fibre networks, to TDC's CaTV network, further to the acquisition of *YouSee A/S* by TDC. The Commission did not comment on the measure, which was finally adopted on 4 June 2014.

On 10 March 2014, the Commission registered a notification from the DBA concerning price remedies imposed in the market for wholesale (physical) network infrastructure access in Denmark, more precisely the regulated access prices for the provision of a unicast product in the form of VOD, included in the VULA product, where access is taken at the street cabinet (POI0). The price of VOD was set at DKK 0.02 per GB. The Commission did not comment on the measure, which was finally adopted on 11 April 2014.

A decision of 3 November 2010 imposing several obligations on TDC, including an obligation to meet reasonable requests for access to broadband connections through its fibre optic network, was challenged before the Danish courts and led to the preliminary ruling under Case C-556/12. That obligation included, inter alia, the installation of drop cables over a maximum distance of 30 metres in order to connect the end-user to the fibre optic network that serves to provide high speed access. On 19 June 2014, the Court ruled that Articles 2(a), 8 and 12 of the Access Directive must be interpreted as meaning that the NRA has the power to impose on an electronic communications operator that has significant market power on a specific market, pursuant to the obligation to meet reasonable requests for access to, and use of, specific network elements and associated

facilities, an obligation to install, at the request of competing operators, a drop cable not exceeding 30 metres in length connecting the distribution frame of an access network to the network termination point at the end-user's premises, as long as that obligation is based on the nature of the problem identified, proportionate and justified. When doing this, the NRA has to take into account the initial investment made by the operator concerned and the existence of a price control that makes it possible to recover the costs of installation. The case will be judged on the merits by the Østre Landset.

While the DBA expects future market reviews to be in line with the new Recommendation, the following markets outside the Recommendation should also be assessed: access to the fixed telephone network provided at fixed location, call origination on public telephone networks provided at fixed location and wholesale SMS termination on individual mobile networks.

2.2. Access and interconnection

While no schedule for migration of fixed networks towards an IP interconnection architecture has been set, a voluntary development from traditional PSTN networks towards IP-based networks is reported by TDC with the development of ISDN-BRA and ISDN-PRI substitution services and solutions as of 2018 and a switch-off of PSTN lines foreseen in 2020.

The rules on access and interconnection have not evolved over the reporting period and no requirements exist in Denmark for agreements regarding exchange of (IP-based) call traffic to be registered or notified. However, the incumbent TDC is obliged to make a reference offer available regarding the exchange of (IP-based) call traffic. In general, SMP operators on fixed termination are obliged to provide access to exchange IP-based call traffic and provide information about general terms and conditions as well as commercially negotiated terms and conditions in agreements of access. This information has to be disclosed to all parties in connection with the conclusion of access agreements.

3. BROADBAND PLANS AND FINANCING

The Danish national broadband strategy is based on a plan adopted on 1 June 2010. The strategy aims to achieve coverage of 100 Mbps download or more for all households and enterprises by 2020. In March 2013, the Government issued a complementary action plan for better broadband and mobile coverage, which introduced the additional aim of coverage of 30 Mbps upload for all households and businesses by 2020. In January 2014 an ICT Growth Team of representatives from the ICT-sector, users of ICT and the research landscape handed over their recommendations to the Danish government. The team recommended that all Danes must swiftly have access to a fast broadband infrastructure. The government addressed the recommendations and in February 2015 the Government and the political parties agreed on a Growth Plan for Digitisation in Denmark. The Plan has 17 concrete initiatives split into four areas: (1) Good mobile and broadband coverage throughout the country; (2) Increased use of ICTs and data in Danish businesses; (3) Digital security; and (4) Skills and e-learning resources. With regard to 'Good mobile and broadband coverage throughout the country', the initiatives include the following elements: the release of the 700 MHz band for mobile broadband from April 2020; the setting of coverage requirements for future spectrum auctions; a new piece of legislation aiming at fewer excavation works and better utilisation of pipes and

cables for broadband; a set of initiatives facilitating coordination and agreements between telecommunications providers and municipalities in view of improving the local mobile and broadband coverage in remote areas; the review of Acts on Mortgage financing (Acts on mortgage loans and bonds⁶) to include financing opportunities for digital infrastructures; a review of the telecommunications regulation by an assessment of the development of OTT services and the impact these services have on the competition and the development of the telecommunications sector. Moreover, the Government has submitted a bill allowing municipalities throughout the country to offer free broadband, e.g. wifi for 1 hour a day in areas of international tourism activities⁷. The bill is currently under discussion before the Parliament. The Government has taken initiative to increase financing opportunities for better mobile and broadband coverage by allowing loans for infrastructure expenses for municipalities of DKK 150 million in total in 2015 and 2016. While political attention still seems relatively high, operators have reported a lack of political and regulatory focus on investments.

A more particular initiative concerns the provision of high speed connectivity of the island of Bornholm, which has a significantly lower access to high speed broadband than the national average, and which was put out to tender in 2014 with a DKK 60 million subsidy. The bid was won in December 2014 by *Global Connect* which acquired in the meantime the fibre operator *Østkraft*. Concerning the Connected Communities, Læsø, Guldborgsund, Lolland, Vordingborg and Odsherred have applied for the Connected Communities initiatives technical assistance support.

4. INSTITUTIONAL ISSUES

4.1. The National Regulatory Authority

The institutional changes introduced by the Resolution by Her Majesty the Queen of 3 October 2011 that dissolved the previous NRA, National IT and Telecom Agency (NITA) into the new NRA DBA [Danish Business Authority] were enacted in Consolidation Act No 128 of 7. February 2014. The Head of the DBA (a Director General) is appointed by the Ministry of Business and Growth for a fixed term of 5 years with the possibility of renewal.

The DBA internally adopts an ‘annual performance contract’ to set particular goals for the year but is not subject to any reporting obligations.

While mechanisms for cooperation with the other authorities are established, in particular with the national competition authority, it is worth noting that this cooperation does not concern areas like frequencies auctions.

The decisions of the DBA can be appealed either directly before the Civil Court or before the Telecommunications Complaints Board, the decisions of which can then be appealed before the Civil Courts. Operators report choosing the second option in the first place. Over the reporting period, the DBA adopted 70 decisions, 55 relating to the numbering area (assignments and withdrawals of numbering resources), 1 related to the market for

⁶ *Lov om realkreditlån og realkreditobligationer mv and Lov om finansiel virksomhed.*

⁷ *Forslag til lov om ændring af lov om graveadgang og ekspropriation m.v. til telekommunikationsformål, lov om elektroniske kommunikationsnet og -tjenester og konkurrenceloven.*

fixed access, 9 relating to prices on fixed and mobile markets and 5 relating to access and market regulation. 4 out of these 70 decisions were appealed before the Telecommunications Complaints Board and were upheld. The average duration of appeal proceedings was 146 days according to the Danish regulator.

	2014
Personnel ⁸	54.1
Increase	2 %
Budget	€ 28.8 Million
Increase	- 1 %
Administrative charges ⁹	€ 28.8 Million
Administrative costs ¹⁰	€ 7.7 Million

4.2. Authorisation and licences

While no prior notification is required, all providers of networks and services should register with the police. No specific taxations on providers of electronic communications services are reported. No issues regarding EMF norms are reported.

Licences for mobile broadband are technology and service neutral. Coverage obligations exist for certain bands: an obligation to cover 207 postal codes in sparsely populated areas by the end of 2015 applies to the 800 MHz band and conditions to cover a certain percentage of geographical area also apply for the 900 MHz, 1800 MHz and 2100 MHz bands. The 2.6 GHz band entails no coverage conditions. No licences have been renewed over the reporting period.

23 cross-border providers of services are reported by the Danish regulator.

The MSS frequencies have been designated and made available to the selected operators until 12 May 2027 through references to the relevant EU decisions in the Danish Frequency Allocation Table. No authorisation is therefore required or issued for the MSS satellite component. No enforcement action has been taken.

5. SPECTRUM MANAGEMENT

In 2014 no additional spectrum was made available or assigned for wireless broadband. In total, 1025 MHz of spectrum are available for wireless broadband, in the following bands: 800 MHz, 900 MHz, 1800 MHz, 2 GHz, 2.6GHz and 3.4-3.8 GHz band. Lack of market interest was nevertheless reported with regard to the higher bands.

On 26 February 2015, Denmark's government agreed with major parties from across the political spectrum to allocate the 700 MHz band to mobile broadband as of April 2020, which is the date current TV broadcasting licences expire. The auction is expected to take place by 2019 at the latest. An analysis was carried out by the Danish regulator and

⁸ Number of staff in full time equivalents (fte).

⁹ In the sense of Art. 12 of the Authorisation Directive (Directive 2002/20/EC as amended by Directive 2009/140/EC).

¹⁰ Idem.

concluded to the possible release of the band for wireless broadband while allowing meeting the demand for DTT.

In addition to bands covered by Commission Implementing Decisions, the following bands are licensed on a service and technology neutral basis: 410-430 MHz, 24.5-26.5 GHz, 31.8-33.4 GHz, 40.5-43.5 GHz and 57.0-66.0 GHz. In general the licence conditions regarding use of a specific service or technology are only attached when absolutely necessary and can be removed from existing licences if the licence holder applies for this. Licences can be traded freely, except for transfer of (parts of) licences issued in an auction or public tender — which requires prior acceptance from the DBA. As far as possible, spectrum use is exempted from licensing.

6. RIGHTS OF WAY AND ACCESS TO PASSIVE INFRASTRUCTURE

ECN providers have to request explicit rights of way directly to the local authorities. Decisions on rights of way regarding masts and antennae should be processed in less than 6 months or 3 months if the case is considered as uncomplicated according to the Mast Act. A possibility of appeal and of report of abuses can be done to the superior authorities. The procedures are reported as simple and light and transparency is ensured through the publication on the local authorities' website. Electronic submission for request is available. Further to a great variety of prices imposed by municipalities and in many instances high prices, the DBA has developed with the industry, local authorities and regions guidelines for prices of rental of land for the sitting of antennae and masts.

Infrastructure sharing as well as cross-utility deployment is imposed under the Act on Electronic Communications Networks and Services. Although considered as a natural building standard, NGA wiring is not mandatory for new or old buildings.

The DBA maintains a database containing future radio coverage plans and existing antenna positions. The DBA reports a current analysis for more detailed infrastructure mapping in order to increase transparency, coordination of civil works and infrastructure sharing, especially focusing on cheaper and more efficient NGA roll-out.

Regarding access to passive infrastructure, the Danish Register of Underground Cable Owners (LER), managed by the Ministry of Housing, Urban and Rural Affairs, contains information on all companies and associations who own underground cables in Denmark. The Danish Telecommunications Industry Association maintains a database from which interested telecommunications companies automatically receive notification with offers of joint digging efforts from other telecommunications companies digging in certain areas. There is an agreement to coordinate works between telecommunications operators regarding civil engineering works. The purpose of the agreement is to ensure non-discriminatory and transparent conditions for all parties joining the agreement, and to meet the authorities' requirements with respect to coordination of digging, in order to minimise traffic inconvenience to citizens and businesses.

Denmark is quite advanced in terms of transposing Directive 2014/61/EU and the work is in progress. A new Act on Public Roads entering into force on 1 July 2015 lays down a legal obligation to coordinate civil works as a condition for receiving digging permits. A legislative proposal concerning access to and transparency concerning existing physical

infrastructure and high speed readiness of buildings was submitted to Parliament in late February 2015.

7. CONSUMER ISSUES

7.1. The European emergency number 112

The rules on 112 have not evolved over the reporting period. No requirements on accuracy are currently in force. The equivalent access to emergency services for disabled end-users is ensured through a text relay service for hearing-impaired and blind end-users and an SMS service for deaf and hearing and speech-impaired end-users. No specific measures to raise further awareness on 112 were organised over the reporting period.

7.2. Number Portability

Number portability ¹¹		2013	2014
Fixed	Number of transactions	231 885	397 391
	% Of total numbers	12.0	22.5
	Maximum retail price	N/A	N/A
	Max. wholesale price	€ 4.8	€ 4.8
	Max. time under regulation	1 day	1 day
	Total time in practice	Instant	Instant
Mobile	Number of transactions	816 034	1 022 589
	% Of total numbers	9.9	12.5
	Maximum retail price	N/A	N/A
	Max. wholesale price	€ 4.8	€ 4.8
	Max. time under regulation	1 day	1 day
	Total time in practice	Instant	Instant

The rules regarding number portability were adopted in 2011 and have not changed over the reporting period. A possible notice of termination period in the end-users' contracts is not reported as a potential hindrance for porting numbers. As a consequence, Denmark continues to be one of the EU Member States with the highest rates of fixed and mobile number portability. Both figures on number of transactions for fixed and mobile telephony increased: respectively from 231 885 to 397 391 and from 816 034 to 1 022 589. The one-day porting rule is reported to be working smoothly and individual arrangements between the operator and the consumer are possible.

7.3. Contractual obligations

The rules on contractual obligations have not evolved over the reporting period. Contractual obligations in the telecommunications sector are subject to the general regime of consumer law as well as to specific provisions under the Danish Act on Electronic Communications Networks and Services. A general principle was introduced

¹¹ Source: the Danish Business Authority. All data refer to complete years.

in Danish law in 1996 and provides that no binding period be it direct or indirect, for more than 6 months, may be imposed.

7.4. Other consumer issues

Overall, the general consumer protection rules in the Danish Marketing Practices Act also apply to commercial practices in relation to telecommunications and more detailed requirements for some contractual terms and conditions can be specified for the telecom sector. In addition, adequate information as regards e.g. use of equipment, terms of e.g. subscription period(s) and price(s) has to be provided to the consumer on the basis of a set of guidelines on marketing, terms of contract and customer services in the telecommunication industry adopted by the Danish Consumer Ombudsman and The Danish Consumer Council, and various business organisations. Regarding in particular broadband marketing, the guidelines adopted on 1 March 2013 have been implemented and should be renewed or subject to review this coming year.

Regarding transparency and publication of information, the DBA has set up an interactive broadband guide on price and quality and several market players offer similar guides for all services on their websites.

Consumer complaints are handled by a private complaint board. Fewer complaints were received in 2014 (318) than 2013 (354) and they mainly concern contract terms (84) and billing (61).

No complaint regarding cross-border access to non-geographic numbers were received by the DBA over the reporting period.

8. UNIVERSAL SERVICE

The scope of the Universal Service has changed in 2014, by removing the obligation to provide a listening watch for maritime distress and safety services. This service has been provided by the Danish defence since 1 January 2015. The Coastal Radio system is still provided by TDC. In 2013, the provision of radio based maritime distress and safety services was compensated by an amount of 7.5 million euros. A review of the obligations is foreseen in 2015.

TDC has introduced a legal action for compensation before the Telecommunication Complaints Board and the courts concerning the years 2007-2010. This led to a preliminary ruling asked by the Teleklagenævnet before the European Court of Justice (C-222/13), which ruled that the conditions of Article 267 TFEU were not met.

9. NET NEUTRALITY

9.1. Legislative situation

The situation regarding Net Neutrality has not evolved over the reporting period. The industry self-regulation initiative of Net Neutrality Forum established in May 2011 is still reported as working smoothly and the NRA still participates as an observer. Binding action will be considered only if incidents occur, which has not been reported yet. The

code of practice adopted in September 2011 still applies and no national legislation is foreseen before the result of the TSM negotiations.

9.2. Quality of service

The DBA is responsible for quality of service implementation and the monitoring of the quality of service in the sector, and specific aspects such as internet speed and other parameters. The DBA makes available a web-based broadband test from Ookla, which measures the data transmission speed (download and upload) and delay. The DBA publishes an annual broadband map, showing broadband technologies and broadband speeds available in specific postal districts.

In March 2015, the DBA introduced a new broadband coverage tool (<http://tjekditnet.dk/>). The tool relies on a modelling approach and a single database where operators report the speed of the broadband connections according to locations and end-users interactively report their experience. The regulator aims at developing this tool further so as to extend it to mobile coverage and to include all consumer-related aspects.

Estonia

1. MARKET DEVELOPMENTS

Broadband indicators (December 2014)¹	EE 2013	EE 2014	EU 2013	EU 2014
Fixed broadband coverage ²	85%	88%	97%	97%
NGA coverage ²	74%	83%	62%	68%
Fixed broadband take-up ²	69%	69%	69%	70%
Share of >30Mbps subscriptions ³	16%	24%	21%	26%
Share of >100Mbps subscriptions ³	4%	5%	5%	9%
Share of DSL in fixed broadband ³	41%	39%	73%	70%
Incumbent market share fixed broadband ⁴	59%	58%	42%	41%
HSPA Mobile broadband coverage ²	100%	99%	97%	97%
LTE Mobile broadband coverage ^{2 5}	-	79%	59%	79%
Mobile broadband penetration ⁶	92%	114%	64%	72%
Market share of leading mobile network operator ⁴	43%	41%	35%	35%

At the end of 2014, a trend towards consolidation of Estonian mobile and fixed communications markets emerged further to a merger between two major market players: AS EMT (mobile operator) and Elion Ettevõtte AS (fixed incumbent). Both of these operators merged on 1 September 2014 within the company Eesti Telekom. In this context, it should nevertheless be noted that both companies were already part of the same group, namely TeliaSonera. As a result of the merger, the companies EMT and Elion ceased to exist as separate legal entities but will nevertheless continue to offer their services under their respective brand names, although synergies from the consolidation are expected.

¹ Sources: coverage data — studies by IHS and VVA; penetration data — figures provided by Estonia to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe (except fixed broadband take-up, provided by Eurostat).

² % of households.

³ % of fixed broadband subscriptions.

⁴ % of subscriptions.

⁵ This indicator cannot be compared with that of last year in Estonia.

⁶ Subscriptions per 100 inhabitants.

Besides, Eesti Telekom (via Elion) will be moving to a full IP services platform but the date of implementation of the move has not been made public yet.

In the broadband market, the two main players are Eesti Telekom (via Elion), the telecom incumbent, and Starman, a cable operator.

In terms of market trends, it should be noted that Estonian customers prefer the use of mobile technologies over fixed network technologies. There is evidence of fixed-to-mobile substitution: between 2013 and the third quarter of 2014, there was an increase of calls originating from a mobile network (+ 2 % points) and a decrease of calls originating from a fixed network (- 2 % points). The Estonian market is characterised by a very high use of mobile technologies and the Internet. 88 % of Estonian households have broadband Internet access.

Another notable characteristic is the importance of bundles in the market: according to the data provided by the National Regulatory Authority, 10 providers offer bundled services and customers are using services in bundled offers as follows: 85 % of broadband services, 96 % of telephone services and 81 % of cable TV services are used in bundles. Bundled offers are not regulated.

2. MARKET REGULATION

2.1. Market analysis

Several regulatory decisions were notified and adopted in 2014 and early 2015, with the view to deregulating the following markets: market for access to the public telephone network at a fixed location for residential and non-residential customers (market ex1 of the 2007 Recommendation); market for call origination on the public telephone network provided at a fixed location (market ex2 of the 2007 Recommendation); market for broadcasting transmission services (market ex18 of the 2003 Recommendation); and market for wholesale terminating segments of leased lines (market 4 deregulation).

In the first three cases, the Commission did not make any comments, while in the last one the Commission called upon ETRA, the Estonian NRA, to oblige the Significant Market Power (SMP) operator, in its final measure, to give an appropriate period of notice to parties affected by the withdrawal of obligations, even if the Estonian NRA already foresaw a regulatory phase-out period after the entry into force of the proposed measure. The SMP operator should therefore inform all those operators currently buying a terminating segment of leased lines at regulated conditions whether, and at which date, the current terms and conditions could be modified.

As regards the market for call termination on the public telephone network provided at a fixed location, following the withdrawal of a previous proposal in June 2014, the NRA notified a new draft decision, still in 2014, which designated 10 SMP operators. The Commission welcomed the amendments included in the draft measure justifying the proposed differentiation of the access remedy imposed when it comes to time periods allowed for responding to an interconnection request. However, the Commission reiterated its request to ETRA to closely monitor the markets and to modify the access remedies if necessary to prevent any entry deterring behaviour to the relevant market. Furthermore, the Commission invited ETRA to notify any forthcoming draft decision(s)

setting termination rates for 2016 and 2017 under Article 7(3) of the Framework Directive.

In 2014, ETRA notified to the Commission a proposal to set new mobile termination rates (MTR) in Estonia at 1.10 € cents per minute for the period from 1 July 2014 until 30 June 2015. This decision has been adopted further to the comments of the Commission stressing the need to adopt an appropriate benchmarking methodology, in order to ensure that it fully reflects the adoption of a BU-LRIC model. In the beginning of 2015, ETRA notified to the Commission a new proposal to set mobile termination rates in Estonia (MTR) at 1.00 €/min. for the period from 1 July 2015 until 30 June 2016. This decision merited no comments from the Commission.

It should also be reported that, according to the NRA, one Estonian MVNO which is currently providing services mainly targeted at travellers outside Estonia by using Estonian numbering resources is currently not considered as SMP, and thus is not subject to regulated MTRs.

The lowered MTRs and FTRs have had the effect of increasing call traffic between fixed and mobile operators.

Finally, as regards the timeframe for reviews of regulatory decisions, following a slight delay, the review of the Market for wholesale broadcasting transmission (market ex18 of the 2003 Recommendation) was notified in March 2015.

As to upcoming analyses, the next analysis foreseen will cover the mobile termination market and should be finalised by the end of 2015.

2.2. Access and interconnection

In 2012 and 2013, there were not any registered/notified IP interconnection agreements. Besides, there are not any automatic reporting obligations for the operators to improve monitoring of the IP interconnection market and functioning of IP interconnection agreements. It should nevertheless be noted that operators must provide this kind of information upon request from the Regulatory Authority.

There were not any registered IP interconnection disputes in 2014. There were no issues reported concerning IP interconnection between OTT players and network operators in 2014.

Finally, no calendar for migration of fixed networks towards IP interconnection architecture has been set.

3. BROADBAND PLANS AND FINANCING

Estonia has achieved nationwide coverage of 4G network. There are three nationwide 4G networks already in commercial use.

The Estonian national broadband plan is an integral part of the Estonian Digital Society Strategy 2020. One of the key measures to foster broadband deployment is the Estwin project.

This project is led by the Estonian Broadband Development Foundation (ELA) which was founded by 8 major Estonian telecommunications companies: Elion, EMT, Elisa, Tele2, Levira, Ericsson, Eltel, and Televõrgu AS. This non-profit entity operates at wholesale level renting dark fibre to any provider under the same conditions. The overall layout of the network was designed in 2009 and encompasses a fibre middle-mile network aiming at ensuring that after completion 98 % of all households in Estonia will be located no further than 1.5 km from the nearest network access point. In total, this requires laying about 6400 km of fibre optic cables. For each local roll-out area, a detailed plan is drawn up that takes into account the location of houses, the requirements of local governments, telecommunications carriers, the location of the existing communication nodes, etc. These detailed plans are agreed with all parties. Currently, 2300 km of network cables have been deployed and completion of the entire EstWin Network has been postponed to 2020 (compared with the original end date of 2018), in line with the new financing period. Indeed, approximately 15 % of network construction cost is self-financed by Estonia, while approximately 85 % of financing is covered by ERDF funds. It is also worth noting that 47 647 059 € from EU structural funds for the period 2014–2020 will be dedicated to fibre optic backbone network development.

Last mile connections are on the contrary established by the operators who offer Internet services to end-users. Today, main last mile technologies include xDSL, DOCSIS3, FTTx, 3.5G and 4G. As a general rule, it is expected that last mile segments are rolled out by telecom operators under market conditions, although extension to the access network in case of market failures is under consideration.

4. INSTITUTIONAL ISSUES

4.1. The National Regulatory Authority

Most of the responsibilities under the regulatory framework are performed by one Regulatory Authority: the Estonian Technical Regulatory Authority (ETRA), ‘Tehnilise Järelevalve Amet’. In addition, the Ministry of Economic Affairs and Communications is directly involved in the procedures leading to the approval of the National Radio Frequency Allocation Table and Numbering Plan, as well as in the elaboration of regulations governing the provision of Universal Service in Estonia.

The competences of ETRA and the Estonian Competition Authority (ECA), ‘Konkurentsiamet’ have been modified by an Act adopted on 7.05.2014 amending the Estonian Electronic Communications Act. As of the 1st of July 2014, the Electronic Communications Market Department which used to be part of ECA has been transferred to ETRA. As a result of this transfer, ECA does not carry out anymore any ex ante regulation of the telecommunications market in Estonia. In the field of electronic communications, ETRA has currently 3 departments namely the Communications and Media Services Department, the Radio Frequency Management Department and the Electronic Communications Market Department.

The Communications and Media Services Department checks the registration of the providers of communications services in the Register of Economics. The Communication Services Department also inspects the performance of requirements set for the provision of the communications services and the operation in the protection zone of the line facilities and handles the damages of line facilities, mainly those of the copper and optical underground cables. Besides, the department deals with giving the right of use for

fixed phone and mobile phone numbers, service numbers, short numbers and identification codes used in communications network and supervision of using the numbering.

The Radio Frequency Management Department monitors both the possibilities and the needs of planning the use of frequency spectrum.

Finally, the Electronic Communications Market Department is notably in charge of analysing and monitoring the general market situation of the electronic communications sector and analysing the economic activities of undertakings; defining the markets of electronic communications services and analysing regularly the competitive situation in the defined markets. Some investigations were carried out in 2014, mainly concerning markets ancillary or adjacent to the electronic communications ones, such as on mobile payment platforms.

	2014
Personnel ⁷	92
Increase	12 %
Budget	2 667 611 Million
Increase	N/A
Administrative charges ⁸	€ 0 Million
Administrative costs ⁹	N/A

ETRA is accountable to the Minister of Economic Affairs and Communications and delivers its reports on its website. The annual plan of ETRA is formally approved by the Minister of Economic Affairs and Communications. However, according to the Electronic Communications Act, the accountability cannot restrict the independence of ETRA.

With regard to enforcement of consumer protection rules, including those related to the electronic communication sector, the Consumer Protection Board is competent on the basis of general as well as sector-specific consumer protection rules. More specifically, the Consumer Protection Board monitors the implementation of the Consumer Protection Act and the consumer protection related rules of the Telecommunications Act.

The decisions of ETRA can be reviewed or suspended only by the Courts.

In 2014, there were 2 dispute cases. In the first case, EMT appealed ETRA's injunction to EMT to perform obligations stipulated in the 2.6 GHz licence. In the second case, EMT appealed ETRA's decision not to change 2.6 GHz licence conditions concerning the obligation to install a minimum number of base stations. EMT abandoned its action on 19 December 2014.

⁷ Number of staff in full time equivalents (fte).

⁸ In the sense of Art. 12 of the Authorisation Directive (Directive 2002/20/EC as amended by Directive 2009/140/EC).

⁹ Idem.

4.2. Authorisation and licences

As regards the provision of electronic communications services and/or networks in the country, no establishment requirement needs to be fulfilled. Only a registration of electronic communications service is needed.

The Estonian market encompasses five active cross-border electronic communications providers established in the EU: Estonian Telekom (with TeliaSonera), Tele2 and Televõrgu AS (with Tele2 AB), Elisa Eesti (with Elisa Finland), Linxtelecom Estonia (with Linxtelecom Netherland) and Viasat (with Modern Times Group, Sweden).

As to wireless mobile broadband rights of use, the assignment of the third frequency licence of the 800 MHz band (frequency block 811-821 MHz / 852-862 MHz) to Tele2 Eesti AS was completed in January 2014. The other two frequency licences had already been issued to telecommunication providers in 2013, based on the results of the tendering process.

All three frequency licences apply in the entire Estonian territory. Besides, all three frequency licences were granted without a term and they are to be extended every year under the same conditions after the operators have paid the relevant levies.

As far as liberalisation of spectrum use is concerned, further to changes to the National Frequency Allocation Table, spectrum trading is now possible in the frequency bands 450 MHz, 880-915 MHz, 925-960 MHz, 1710-1785 MHz, 1805-1880 MHz. Some relevant trading activity is taking place; in particular in the 2 GHz Mobile Band, one licence was traded from ProGroup Holding OÜ to Tele2 Eesti AS; in the 2, 5 GHz Mobile Band, one FDD licence 2x20 MHz was traded from Tele2 Eesti AS to Eesti Telekom AS. The new users have to comply with the licence requirements (in terms of coverage and number of base stations)

Finally, as far as Mobile Satellite Services are concerned, none of the selected satellite operators has applied for a licence yet.

5. SPECTRUM MANAGEMENT

In the 2500 MHz band, the operator EMT obtained 4 licences: 3 by public competition (20 MHz TDD [x2] and 2x20 MHz FDD) and one FDD (2x10 MHz) which was traded from the operator Elion AS. At the end of 2014, the operator EMT applied for revocation of all these licences which were then unassigned.

As regards plans for the future concerning usage of wireless broadband bands and especially for the use of the 700MHz band, it should be noted that, according to the frequency allocation table, the 700MHz band will be allocated for new services including Wireless Broadband as of 01.07.2017. A public consultation for determining the exact use of the band is being prepared. Real use and technical conditions will however depend on the results of WRC15 and coordination results.

Reallocation of DVB-T channels is ongoing in cooperation with neighbouring countries.

6. RIGHTS OF WAY AND ACCESS TO PASSIVE INFRASTRUCTURE

The procedures for granting rights of way are simple. Local Authorities are responsible for granting rights of way. The work on the study on rights of way regarding all infrastructures, launched in 2011 by the Estonian Ministry of Justice, continued.

Transparency regarding the procedures for granting rights of way is ensured through publication on the site www.ehr.ee. Electronic submission of requests is available. The maximum time to receive a reply to a request for a permit for deployment is 20 days. Estonia is developing a passive infrastructure mapping covering all telecommunications infrastructure.

Access to telecommunications passive infrastructure in Estonia is mandated on an asymmetric basis. Access to other utilities infrastructure is not provided. Access to publicly financed works is provided. Neither coordination of civil infrastructure works nor a registry of permits for civil works is in place.

Preparatory activity for the transposition of Directive 2014/61/EU (measures to reduce the cost of deploying high speed electronic communications networks) is ongoing, including also significant amendments to the current Estonian Building Code.

7. CONSUMER ISSUES

7.1. The European emergency number 112

The 112 emergency line is operative in Estonia and as of 11/2/2015 has been merged with another national emergency service (police), so that it is now the sole emergency number in Estonia, with a common Public Safety Answering Point (PSAP). It is worth noting that it can be contacted via SMS.

There is no legislation in place laying down caller location accuracy and reliability criteria. It should however be noted that according to the Estonian Authorities the accuracy is the best which is available with today's technology. With specific regard to caller location of roaming users, the operators adopt a network system where the visiting user is automatically recognised by means of the assignment of a national number when entering the Estonian network.

7.2. Number portability

Number portability¹⁰		2013	2014
Fixed	Number of transactions	10,127	6,354
	% of total numbers	1.1%	0.7%
	Maximum wholesale price	0.0	0.0
	Maximum time under regulation (number of working days)	0	0
Mobile	Number of transactions	58,845	50,731
	% of total numbers	0.9%	0.8%
	Maximum wholesale price	0.0	0.0
	Maximum time under regulation (number of working days)	0	0

¹⁰ Source: figures provided by Estonia to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe.

	days)		
--	-------	--	--

Porting is free of charge for the end-user. Technical porting takes place in less than 5 minutes, although in practice it takes now at least 7 days since the law provides for a large number of days for donor and recipient operators to agree on the change. In this regard, the NRA is investigating the issue with a view to reducing the porting time, also to avoid excess of win-back calls in the meantime. Moreover, it appears that national regulation does not allow portability of prepaid subscriptions. Indeed, the number of a prepaid subscription may only be ported provided that the relevant subscription is first changed by the same operator so that it becomes a postpaid one.

7.3. Contractual obligations

The Universal Service Directive 2002/22/EC has been implemented into Estonian Law via the Electronic Communications Act. Enforcement measures aiming at ensuring effective knowledge by the end-user of unilateral amendments of contractual conditions have been taken by the Consumer Protection Authority. However, these measures may be impaired by the current national legislation regulating the communication of the notice of modification of contractual conditions: in particular, although Article 99(3) of the relevant Act provides that a communications undertaking must give the end-user a written notice of the intended amendment of the communications services contract at least one month in advance and explain to the end-user in the notice that, upon disagreement with the amendments, the end-user has the right to cancel the contract, Article 99(4) also provides for the possibility to fulfil this notice obligation simply by publication on the website, without individual notification. The article further provides that any agreement requiring the end-user to pay a contractual penalty for cancelling the contract in connection with amendment thereof by the communications undertaking is null and void.

7.4. Other consumer issues

In 2014, 86 complaints in the field of electronic communications were filed with the Consumer Protection Authority, out of overall 2141 complaints received. The main reasons for complaints in the field of electronic communication services are the following ones: non-acceptance of the received bills; low quality or lack of internet communications; inadvertent roaming; problems/disputes over the termination of the contract; contractual penalties provided by communication undertakings; unfair contract terms; unfair commercial practices.

The Consumer Complaints Committee ('CCC') is an independent institution which settles disputes between consumers and traders (out-of-court procedures for dispute resolution). It operates within the Consumer Complaints Board ('CPB').

The CPB makes preliminary proceedings for the CCC. If a consumer and a communications undertaking do not reach an agreement during preliminary proceedings, then the CPB submits the complaint to the CCC. Decisions of the CCC are not binding.

In 2014, 9 complaints were lodged before the CCC, from which: 3 were related to mobile telephone services; 4 were related to internet communications services; 2 were related to TV communications services.

8. UNIVERSAL SERVICE

The following services are included in the scope of Universal Service in Estonia: telephony services, directory enquiry services and directories, public pay telephones and other public voice telephony access points. Functional access to the internet is defined as a narrowband (up to 56 Kbps) access. There have not been any discussions in Estonia regarding the extension of the scope of the Universal Service to include broadband connections, since the service is available to end-users throughout the country via wireless broadband with up to 3.1 Mbps download/1.8 Mbps upload speeds at an affordable price. Moreover, taking into account the EstWin project, a Universal Service obligation for broadband would not be of much relevance in the future.

9. NET NEUTRALITY

9.1. Legislative situation

There is not any Net Neutrality Law in place nor a proposal for a Net Neutrality Law.

There are no self-regulatory initiatives nor specific initiatives envisaged in the Net Neutrality field.

9.2. Quality of service

The quality of service is not regulated. There are no minimum levels for quality of service. ETRA publishes mobile Quality of Service information on the Internet. Finally, it should be noted that among the traffic management measures currently in place in Estonia, some operators may limit Peer-to-Peer Torrent traffic.

Finland

1. MARKET DEVELOPMENTS

Broadband indicators (December 2014)¹	FI 2013	FI 2014	EU 2013	EU 2014
Fixed broadband coverage ²	97%	97%	97%	97%
NGA coverage ²	72%	75%	62%	68%
Fixed broadband take-up ²	59%	61%	69%	70%
Share of >30Mbps subscriptions ³	21%	27%	21%	26%
Share of >100Mbps subscriptions ³	16%	20%	5%	9%
Share of DSL in fixed broadband ³	60%	55%	73%	70%
Incumbent market share fixed broadband ⁴	-	-	42%	41%
HSPA Mobile broadband coverage ²	100%	100%	97%	97%
LTE Mobile broadband coverage ²	86%	92%	59%	79%
Mobile broadband penetration ⁵	123%	138%	64%	72%
Market share of leading mobile network operator ⁴	39%	40%	35%	35%

In the fixed broadband market, there are 24 regional operators with significant market power (SMP) including DNA Oy, Elisa Oyj, TeliaSonera Finland Oyj, the Finnet Group (group of 21 operators). The use of fixed broadband has been growing steadily over the past year.

In the mobile market, there are at present 13 mobile operators in Finland: three Mobile Network Operators (and one operating in the Åland Islands) holding spectrum eligible for the provision of mobile services and 8 mobile service providers.

In 2014, many changes in the market structure took place including several consolidation activities. First of all, TeliaSonera acquired AinaCom's consumer operations and fixed

¹ Sources: coverage data — studies by IHS and VVA; penetration data — figures provided by Finland to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe (except fixed broadband take-up, provided by Eurostat).

² % of households.

³ % of fixed broadband subscriptions.

⁴ % of subscriptions.

⁵ Subscriptions per 100 inhabitants.

networks. The acquisition is expected to strengthen TeliaSonera's position on the Finnish market by generating significant synergies. AinaCom's consumer operations include around 15 900 fixed broadband and 9 000 fixed voice subscriptions, 29 000 cable tv subscriptions and 10 000 mobile subscriptions.

Besides, on 31 December 2014, KYMP Oy (local fixed ICT services provider) merged into Elisa Oy (also active in the mobile sector). Furthermore, Elisa increased its ownership in Anvia Corporation to 26.8 %, a TV/Internet services operator.

Moreover, on 29 April 2014, DNA (a fixed and mobile services provider) signed an agreement with TDC (another fixed and mobile services provider) on the acquisition of TDC Oy Finland (communications solution provider in Finland's business to business market) and TDC Hosting Oy (corporate data network services provider for large and medium-sized enterprises). The Finnish Competition and Consumer Authority approved the transaction in May 2014, and TDC Ltd and TDC Hosting Ltd became DNA subsidiaries in the beginning of June 2014.

As far as network infrastructure sharing is concerned, TeliaSonera and DNA have planned to share network in northern Finland. In that perspective, TeliaSonera and DNA have created a joint venture company, called 'Suomen Yhteisverkko', which will build and operate a common radio access network for 2G, 3G and 4G technologies, including passive and active sharing. Geographically, the new network will cover approximately 50 per cent of the country and around 15 per cent of the population.

The newly set up company will own the radio network equipment and rent masts and base station facilities from the operators or third parties. The operators will also combine their 800MHz frequency blocks in order to offer faster 4G connections and more capacity to their customers in the area. The joint venture will be jointly controlled, and equally governed by the consensus principle with TeliaSonera owning 51 per cent and DNA 49 per cent of the company.

The joint venture agreement which was finalised in August 2014 was approved by the Ministry of Transport and Communications in November 2014 and is currently under the Competition Authority's scrutiny.

In terms of market trends, there is evidence of fixed-to-mobile substitution for voice services: as of 2007, fixed telephone subscriptions have decreased by 65 % and mobile subscriptions have increased by 62 %. Besides, only 11 % of households have fixed subscriptions and it is worth noting that in practice all of them have also a mobile subscription.

2. MARKET REGULATION

2.1. Market analysis

The two main draft regulatory decisions of the National Regulatory Authority, FICORA, concern the mobile call termination market and the broadcasting market.

As regards the wholesale voice call termination on individual mobile networks (market 2), a draft decision was notified to the Commission on 27 February 2015. The decision does not foresee any change in the relevant product market nor in the designation of SMP

operators. However, the draft decision includes a new cost-oriented price cap for Mobile Termination Rates (MTRs) as a remedy for the SMP national Mobile Network Operators: DNA, Elisa, TeliaSonera and Åland Islands Telekommunikation. The price cap proposed for MTRs is 1.25 € cents per minute. In this context, FICORA has defined the price cap based on Fully Allocated Costs (FAC) approach. According to FICORA, the newly adopted Information Society Code (see below) explicitly forbids using pure BU-LRIC approach in calculating the costs of regulated services.

FICORA has reported that a recital of the draft Information Society Code reads as follows: *'The costs of an efficient operator should include, in a reasonable degree, also the overheads regarding production of the products or services. Hence, pure-LRIC methodology, which has been used in some EU countries, could not basically be seen as reasonable.'* According to FICORA, this prohibition prevents them from using a pure BU-LRIC model. However, it has been explained that FICORA's proposal induces symmetrical MTRs and price reduction close to the pure-LRIC level. In this context, the Commission has decided to open a Phase II investigation under Article 7a of the Framework Directive, which is currently ongoing.

As regards the broadcasting market, FICORA's draft Decision was notified to the Commission on 3 March 2015⁶.

As far SMP decisions in markets 4-5 (of the 2007 Recommendation) adopted in December 2012 are concerned, in 2013, 3 appeals were lodged in particular about ex market 4 (by the operators Anvia, Elisa and TeliaSonera). Appeals were made on market analysis, price regulation of fibre in general, and price cap obligation. Pursuant to a Decision of the Supreme Administrative Court of October 2014, the price cap obligation for both copper and fibre Local Loop Unbundling was annulled, in view of the fact that it had not been established that setting up the price cap obligation was necessary in order to meet the purpose of access rights within the meaning of the Communications Market Act; otherwise FICORA's decision was upheld. Further to the annulment of the relevant price cap obligation, the remedies in force consist of price orientation obligation, which is monitored by FICORA on *ex post* basis.

With regard to ex market 5, on the other hand, one appeal was lodged by the operator TDC. TDC based its appeal on grounds of lack of price regulation by FICORA for Wholesale Broadband Access services and asymmetrical remedies for Wholesale Broadband Access services under 8 Mbit/s. TDC claimed that SMP decisions should include an obligation to rent wholesale broadband services also as regards connections under 8 Megabit/second.

Besides, TDC claimed that wholesale broadband services markets should also be subject to a cost-oriented pricing obligation or at least to the sufficient competitive safeguards mentioned in the Commission recommendation issued on 18.10.12 during the relevant proceedings. Pursuant to a Decision of the Supreme Administrative Court of October 2014, the appeal was dismissed and FICORA's decision was upheld. As a result, the relevant SMP decision remained entirely in force, however the decision provides only for

⁶ Following comments issued by the Commission on 1 April 2015, FICORA adopted its final decision on 24 April 2015.

transparency, non-discrimination and an obligation to provide access to wholesale broadband access services (but not pricing).

2.2. Access and interconnection

No issues concerning IP interconnection between OTT players and network operators were reported.

No calendar has been set for migration of fixed networks towards IP interconnection architecture.

3. BROADBAND PLANS AND FINANCING

The Finnish broadband plan covers the period 2010-2015 and targets the most sparsely populated areas of Finland (5 % of the population). Key measure is the roll-out of middle-mile network segments with the objective to bring network access points supporting connections of at least 100 Mbps to within 2 km of almost all premises. Roll-out is implemented by means of projects at local level. So far about 250 network projects of various sizes have been or are currently being started. Recently established local cooperatives or municipal network operators are carrying out most of these.

The broadband scheme was notified to the EC in 2010. Total financing of the projects breaks down as follows: 71, 5 million euros are financed by the State and 25 million euros come from EAFRD while municipalities finance approximately the same amount.

FICORA has, on its part, provided State aid grants of a total of 46 million euros since the beginning of the project in 2010. FICORA is the state aid authority for the national funding, whereas the EU agricultural funds are granted by regional EDTE-centres (Economic Development, Traffic and Environment). EDTE-centres consult FICORA during the process before granting the aid.

In addition to the subsidised broadband project, Finland has a specific strategy for the promotion of market-driven broadband connections. The strategy was completed in the end of

2012 and the measures listed in it are now under implementation. The measures include, for instance, utilising new and cost-efficient practices for optical fibre-laying, promoting a joint and forward-looking construction of society's basic functions in collaboration with cities, towns and municipalities and implementing a pilot project with the Finnish House Owners' Association in which resident-led solutions and cooperation serve as a starting point for laying

optical fibre connections in detached house areas. The implementation of the measures listed in the action programme will continue at least throughout the current Government's term.

Finland also plans to implement the Baltic Sea backbone cable project 'Sea-Lion' that connects Germany and Finland with optional branches to other Baltic countries⁷.

⁷See the adopted State aid decision:

4. INSTITUTIONAL ISSUES

4.1. The National Regulatory Authority

FICORA (Viestintävirasto) is the independent National Regulatory Authority according to the regulatory framework and is vested with the regulatory tasks. It has been established by the Act on Communications administration 625/2001.

	2014
Personnel ⁸	243
Increase	+ 9.5 %
Budget	€ 34.2 Million
Increase	+ 4.7 %
Administrative charges ⁹	€ 28.2 Million
Administrative costs ¹⁰	€ 29.3 Million

FICORA is accountable to the Ministry of Transport and Communications. The annual plan of FICORA and the fees charged by FICORA are approved by the Ministry. The decisions of FICORA can be reviewed or suspended only by the Administrative Courts.

The competent authority for the enforcement of general and sector-specific Consumer protection rules is the Competition and Consumer Authority.

On the regulatory front, one major development was the entry into force of the 'tietoyhteiskuntakaari' (Information Society Code) on 1 January 2015. The Code updates and consolidates under one single legal instrument a number of regulations in areas such as e-privacy, consumer protection, communications networks and data security.

This code granted additional powers to FICORA. In accordance with the Code, FICORA has now powers to determine a maximum price for a telecommunication operator's wholesale products when problems with competition arise. The Information Society Code also changes the licensing system in the electronic communications market, assigning a significant part of the programme licensing decisions for television and radio broadcasting to FICORA: in particular, the granting of long-term programme licences for TV and radio operations have been transferred to FICORA.

In 2014, the most relevant Court Cases are those concerning the decisions on ex market 4 and 5 of the 2007 Recommendation, described under section 2.

http://ec.europa.eu/competition/state_aid/cases/252810/252810_1582447_89_2.pdf. The tender process has already started. 'Sea Lion' is expected to provide significant increase in the Baltic Sea area. According to the state-aid decision, the cost of the project is EUR 60 Million, public aid will be up to 50 %. Finland's public grant is estimated to be EUR 20 Million. As to the remaining amount, private lending is expected to be EUR 15-25 Million, EIB loan is expected to be EUR 15-25 Million.

⁸ Number of staff in full time equivalents (fte).

⁹ In the sense of Art. 12 of the Authorisation Directive (Directive 2002/20/EC as amended by Directive 2009/140/EC).

¹⁰ Idem.

4.2. Authorisation and licences

No establishment requirement needs to be fulfilled in order or as a prerequisite to provide electronic communications services and/or networks in the country.

The conditions attached to licences for wireless mobile broadband in the 800 MHz band assigned in 2013 provide that the mobile communications networks must be constructed to cover 95 per cent of the population in mainland Finland within three years of the start of the licence period and 97 or 99 per cent of the population in mainland Finland within five years of the start of the licence period. This was a condition attached to a certain frequency band in the auction process in order to speed up the availability of the 4G coverage. All the licences will expire on 31.12.2033. An assessment of the coverage obligations will be carried out based on coverage maps provided by the operators and field measurements carried out by the regulator.

Single electromagnetic fields limits apply to the whole country. Limits are consistent with the ones set at EU level. The limits are set at the same level as in Council Recommendation 1999/519/EC.

No existing licences have been renewed or extended beyond the original terms during 2014.

Both selected Mobile Satellite Services operators have been authorised in Finland.

Finland has taken enforcement action to ensure the operators' compliance with the conditions attached to MSS services. Indeed, in November 2013, the Finnish Communications Regulatory Authority notified each of the selected operators with a roadmap, including intermediate steps and time limits which are to be observed by them as corrective measures.

5. SPECTRUM MANAGEMENT

In 2014, there was no additional spectrum made available or assigned for wireless broadband.

As regards future plans concerning usage of the UHF bands, the 700 MHz band is currently being used for television broadcasting but there will be a change in allocation as of 2017, so that the 700 MHz band will become available for wireless broadband.

As far as spectrum licencing is concerned, in Finland a licensee is required to provide network services using radio frequencies in a digital terrestrial mass communications network or in a mobile network practising public telecommunications. The Council of State has the general authority to grant such licences.

The provision of public telecommunications (for example, as a mobile communications network operator, internet service provider, cable network operator and a radio programme service carrier) requires that a telecommunications notification be submitted to FICORA. The provision of other types of telecommunications does not require a telecommunications notification. Licences to certain radio frequencies are granted by auction.

Finally, it should be noted that any transfer or lease of individual rights to use radiofrequencies is currently possible only in the 800 MHz and 2.6 GHz bands.

6. RIGHTS OF WAY AND ACCESS TO PASSIVE INFRASTRUCTURE

Municipalities are generally obliged to rent their infrastructure at market prices. The municipalities ensure the coordination of infrastructure works. Moreover, a state-owned company, Johtotieto, opened a joint construction information service in 2011. It is an internet-based system where telecommunication and electricity operators along with other cable owners can provide information on their construction projects (time table, etc.) so that joint construction is facilitated. Currently, there are approximately 200 users that pay an annual licence fee for the service that enables access to about 300 projects in the database.

These figures are increasing and the feedback from the parties involved has been very positive, and is used to further improve the system (e.g. there is a technical improvement in the planning phase which would allow users of the system to transfer data directly to their own information systems used for planning). As regards road sites, a permit is required from the road agency for the installation of cables. In addition to Johtotieto, there is also a privately owned company, Keypro, which offers information on networks and passive infrastructure.

No discriminatory treatments in granting of rights of way, or abusive conditions, were reported by the operators. The average time to receive a permit for the deployment of a fixed network was three to six weeks. NGA wiring is not mandatory for new buildings.

Finally, as regards the implementation of European measures aimed at reducing infrastructure deployment costs, it should be noted that the draft legislative instrument for implementing Directive 2014/61/EU on measures to reduce the cost of high speed broadband deployment is under discussion at Working Group level within the Ministry of Transport and Communications.

7. CONSUMER ISSUES

7.1. The European emergency number 112

The European emergency number 112 is the only emergency number in Finland. Maritime rescue services have their own numbers — 02941000 and in some regional areas numbers from the 0294100x- series, but those numbers do not have a full emergency number status.

97% of 112 calls are answered within 4 seconds. The calls are answered in English in addition to the official languages Finnish and Swedish. Calls can also be answered in German, French and Russian with the help of interpreters.

The 112 operator can detect the location of the caller within about 6 seconds. According to the latest E-communications household survey, 61% of Finns know they can use 112 everywhere in the EU.

7.2. Number portability

Number portability ¹¹		2013	2014
Fixed	Number of transactions	58,000	61,000
	% of total numbers	5.9%	6.5%
	Maximum wholesale price	40.0	40.0
	Maximum time under regulation (number of working days)	5	5
Mobile	Number of transactions	508,500	657,000
	% of total numbers	5.3%	6.5%
	Maximum wholesale price	9.0	9.0
	Maximum time under regulation (number of working days)	5	5

According to the Finnish Communications Market Act, it is possible to port a number to another operator even if the fixed-term subscription has not expired. FICORA's regulation on telephone number portability provides that porting a number of a prepaid service is possible only if the user is registered and identified as the subscriber of the service. FICORA publishes the porting instructions on its website. As regards the loss of service requirements, according to the adopted rules, the time between the closing of the old subscription and the opening of the new one may not exceed 10 minutes in mobile subscriptions and 60 minutes in fixed subscriptions.

7.3. Contractual obligations

Under Finnish Law, a communications service agreement shall be valid until further notice and end when terminated. The consumer has the right to terminate at any time an agreement as of two weeks from giving a notice of the termination, unless a time-limited contract is agreed. In this case, the maximum commitment period is two years. If the telecommunications operator offers an agreement exceeding 12 months, the consumer shall also be offered the possibility to enter into a time-limited agreement of 12 months, in line with Article 20(2) of the Universal Service Directive.

The consumer has the right to terminate a communications service agreement with immediate effect, if a telecommunications operator gives notification that it is amending the agreement terms to the detriment of the consumer. Besides, a telecommunications operator shall notify the consumer of any changes in the agreement terms no later than one month before the amended terms enter into force. A telecommunications operator shall inform the consumer at the same time of his or her right to give notice of termination with immediate effect if the consumer does not accept the amended agreement terms.

¹¹ Source: figures provided by Finland to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe.

7.4. Other consumer issues

In 2014, the Competition and Consumer Authority and the consumer advice service, who share a joint database, received 7525 complaints which related to the following topics: directory services, television services, mobile content services, broadband subscriptions, mobile phone subscriptions. More specifically, the complaints concerned mainly the following themes: contracts and sales, invoicing and billing, quality of goods and services.

The 116 hotline for missing children has not been implemented in Finland yet. According to the information provided by the Finnish Authorities, it has been decided to put the Swedish model into practice in Finland, namely to redirect 116 calls to the currently operative 112 helpline. The responsibility of the file has now been transferred to the Ministry of the Interior. The Commission is monitoring further developments.

As far as consumer protection is concerned, it should be noted that the Information Society Code aims at reinforcing it by introducing a concept of joint liability between telecommunications operator and service provider. The Code foresees a possibility to claim reimbursement from a telecommunications operator in case of breach of contract by the relevant service provider.

8. UNIVERSAL SERVICE

The following services are included in the scope of universal service in Finland: internet connection of 1 Mbps, telephony services, and, for hearing-impaired users and users having speech problems, a broadband connection with a minimum 512 Mbps symmetrical data speed should be available for e.g. videoconferencing. Moreover, based on a governmental decree, hearing-impaired users and users having speech problems are also entitled to a connection that enables them to send and receive text messages in order to contact emergency services. The decree also safeguards the interests of visually-impaired people by securing their right to a clear and easy access to customer service. An invoice and a detailed specification of the invoice must be submitted to visually-impaired people in an accessible form.

With specific regard to the broadband access included since July 2010 in the universal service obligations, users are entitled to a minimum speed of 1 Mbps at their permanent place of residence or business according to the following minimum quality requirements: average download speed is 750 kbit/s over a measurement period of 24 hours; and 500 kbit/s over any measurement period of 4 hours.

An extension of the scope, bringing the speed up to 10 Mbps, as well as broadband supply for leisure homes has been studied by the Ministry of Transport and Communications. This was undertaken as it had been argued that such high speeds would be possible because of the adoption of the 800 MHz band for wireless broadband and the strict coverage requirement in the licences (97 % — 99 % in five years). A new Decree of the Ministry of Transport and Communications was issued on April 16. According to the Decree, the minimum speed of universal service will be 2 Mbit/s from the beginning of November 2015. In 2017, there will be a new review of the speed of broadband universal service. The objective is to have a speed of 10 Mbit/s after 2020.

9. NET NEUTRALITY

9.1. Legislative situation

Currently, Section 68 of the Communications Market Act contains general Net Neutrality provisions. Section 68 of the Communications Market Act provides that the terms of an agreement on a telephone network subscriber connection and any other agreement on receiving a communications service may not restrict the user's right to choose a content service provider.

The situation will change as of 1 July 2015 with the entry into force of Section 110 of the newly adopted Information Society Code. This aims at strengthening the principle of network neutrality from the user's viewpoint, in other words the right of users to freely choose the services and applications that they wish to use via their Internet subscription.

The wording of Section 110 expressly states that 'an Internet service provider may not restrict a subscriber's or user's ability to use an internet service,' except in a limited number of cases listed in the said section. The relevant list is intended to be exhaustive and notably includes information security purposes. Besides, Section 110 confers powers to the Finnish Communications Regulatory Authority in the field of Net Neutrality. Pursuant to Section 110, the Regulatory Authority may indeed issue orders on the assessment of restrictions and procedures and their use.

9.2. Quality of service

The quality of service of communications services is monitored by FICORA. FICORA had a measurement service that was offered to end-users, but it became outdated and the service was shut down. FICORA is currently building up a new service.

France

1. MARKET DEVELOPMENTS

Broadband indicators (December 2014)¹	FR 2013	FR 2014	EU 2013	EU 2014
Fixed broadband coverage ²	100%	100%	97%	97%
NGA coverage ²	41%	43%	62%	68%
Fixed broadband take-up ²	76%	74%	69%	70%
Share of >30Mbps subscriptions ³	8%	12%	21%	26%
Share of >100Mbps subscriptions ³	5%	7%	5%	9%
Share of DSL in fixed broadband ³	91%	89%	73%	70%
Incumbent market share fixed broadband ⁴	40%	39%	42%	41%
HSPA Mobile broadband coverage ²	100%	100%	97%	97%
LTE Mobile broadband coverage ²	68%	75%	59%	79%
Mobile broadband penetration ⁵	53%	65%	64%	72%
Market share of leading mobile network operator ⁴	34%	33%	35%	35%

France has continued its smooth and constant progression towards very high speed broadband over the reporting period. According to the national regulator, fibre deployment has progressed from 2.8 million eligible households in Q3 2013 to 4 million in March 2015, FTTB/FTTC deployments excluded. The FTTH/B infrastructure grew substantially faster than the pace of the upgrading process of cable network, although cable still represents the majority of high speed broadband lines with 8.7 million eligible households (according to the regulator, 2.6 million being eligible for a 30 Mbits/s speed and 6 million being eligible for a 100 Mbits/s speed). Very high speed is also available through VDSL2 with 4.9 million eligible households⁶. According to the regulator, as a whole, this represents 13.266 million households eligible for a 30 Mbits/s speed and an

¹ Sources: coverage data — studies by IHS and VVA; penetration data — figures provided by France to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe (except fixed broadband take-up, provided by Eurostat).

² % of households.

³ % of fixed broadband subscriptions.

⁴ % of subscriptions.

⁵ Subscriptions per 100 inhabitants.

⁶ <http://www.arcep.fr/index.php?id=12748#c91583>.

increase of 19.3 % in one year. Take-up is also progressing well as NGA subscriptions represented 14 % of total fixed broadband subscriptions in January 2015, compared with 8 % in January 2014. As a whole, fixed broadband take-up by households totalled 74 % in 2014, above the EU average of 70 %. In terms of technology market shares for fixed broadband subscriptions, DSL represented 89 % (VDSL included), cable 6 % (DOCSIS 3.0 included) and FTTH/B 4 % in January 2015. The rate of mobile broadband penetration was 65 % in 2014, slightly below the 72 % EU average.

There have been developments towards consolidation in the French market during the reporting period. On 27 October 2014, the French competition authority authorised a merger between *Numericable*, the sole major cable operator in France, and *SFR*, the second biggest MNO. Given the market share of the new entity which serves nearly 23 million mobile customers and 6.6 million households subscribing to broadband services, this acquisition was subject to several conditions. These included *Numericable's* commitment to give competing operators access to its cable network, notably to MVNOS so they can market bundled fixed and mobile services. On 28 November 2014, the French competition authority also authorised *Numericable's* acquisition of *Omer Telecom Limited*⁷. The only competition risk identified related to the foreclosure of *Virgin Mobile* subscribers with *Numericable's* multiple-play services, and was remedied by *Numericable's* commitments in the context of the *SFR* merger review.

Regarding the fixed sector, the number of fixed telephony subscriptions is still decreasing and stood at 38.8 million as of 30 September 2014⁸. Traffic also kept decreasing and stood at 20.8 billion minutes in the third quarter of 2014⁹. Connections to high speed broadband and very high speed broadband totalled 25.7 million as of 30 September 2014¹⁰, which represents a 4.1 percentage point growth in one year. According to the regulator, high speed broadband subscriptions total 23.2 million. According to the regulator, revenues of fixed services (internet and telephony) are at with 3.7 billion euros in the fourth quarter of 2014. Voice traffic represented 43 % on fixed networks and 57 % on mobile networks in 2013.

According to the regulator, the mobile telephony sector's recent fierce competition following the entry of a new operator three years ago, led to a price decrease of 27 % between 2012 and 2013. At the same time, there is palpable dynamism, as seen in the constant increase in the number of SIM cards — by 3.1 million of units in 2014¹¹. As of 31 December 2014, these now stand at 79.9 million and a penetration rate of 120.5 % of the French population¹². The total number of SIM cards had a 4.1 percentage point growth in a year¹³. MVNOS report a decrease both in numbers and in terms of market shares. The four MNOs combine a market share of 89 %. According to the regulator, the volume of minutes increased by 7.9 % between the fourth quarter of 2013 and the fourth quarter of 2014. LTE, which had started relatively late, has seen a very rapid progression in terms of take-up over the reporting period and data traffic doubled during this period. According to the regulator, as of 31 December 2014, the number of end-users using 4G

⁷ Virtual mobile phone operator operating under the Virgin Mobile brand which was hosted by SFR.

⁸ <http://www.arcep.fr/index.php?id=12689&L=0#c91140>.

⁹ <http://www.arcep.fr/index.php?id=12689&L=0#c91140>.

¹⁰ <http://www.arcep.fr/index.php?id=12689&L=0#c91138>.

¹¹ <http://www.arcep.fr/index.php?id=12717#c91404>.

¹² <http://www.arcep.fr/index.php?id=12717#c91404>.

¹³ <http://www.arcep.fr/index.php?id=12717#c91404>.

services totalled 11 million which was 3.2 million more than the previous quarter, according to the regulator. LTE mobile broadband coverage represented 75 % in 2014, compared with the EU average of 79 %.

Operators revenues of are still declining. The decrease between the fourth quarter of 2013 and the fourth quarter of 2014 is estimated at -1.2 % by the regulator. It also reported a decrease in terms of retail services revenues of -1.3 % over the same period¹⁴. According to the regulator, investments have decreased slightly (6.9 billion of euros in 2014 compared with 7.1 billion in 2013).

Bundled offers continued to appear as the growing competitive model in the French market, and operators continued launching new commercial offers to the market. In July 2014, the penetration of bundle offers represented 37 % (subscriptions/population), slightly below the EU average of 41 %. With regard to substitution between fixed and mobile for voice services, the number of minutes shows a decrease of fixed voice consumption (-21 minutes) between the end of 2013 and the end of 2014 while mobile consumption slightly increased (+ 4 minutes).. With regard to broadband no clear trend is reported.

2. MARKET REGULATION

2.1. Market analysis

From March 2014 up to early 2015 the NRA has taken decisions on market analyses and appropriate remedies concerning wholesale physical network infrastructure access at a fixed location and broadband access (markets ex4 and ex5 of the 2007 Recommendation), leased lines, access to the public telephone network at a fixed location for residential and non-residential, call origination on the public telephone network provided at a fixed location (markets ex1 and ex2 of the 2007 Recommendation), and call termination on individual public telephone networks provided at a fixed location (market ex3 of the 2007 Recommendation), voice call termination on individual mobile networks (market ex7 of the 2007 Recommendation).

With regard to wholesale physical network infrastructure access at a fixed location and broadband access, the Commission wrote a letter enjoining the need for coherence between symmetrical and asymmetrical fibre regulation. With regard to the regulation of markets on access to the public telephone network at a fixed location for residential and non-residential and call origination on the public telephone network provided at a fixed location, the Commission commented on the regulation of value added services. With regard to the leased lines market regulation, the Commission commented on the geographic differentiation of price remedies on the market for terminating segments of leased lines. With regard to the regulation of SMS termination, the Commission opened a Phase II investigation and ARCEP withdrew its notification. While the market for SMS termination regulation has been placed on monitoring as of the end of January 2015 for 18 months, voice call termination rates for fixed and mobile services are among the lowest in Europe and are based on incremental cost (pure BU-LRIC model). The same

¹⁴ <http://www.arcep.fr/index.php?id=12689&L=0#c91134>.

price caps are applied to metropolitan and overseas operators (for 2015, 0.079 €-cent/min. for fixed and 0.78 €-cent/min. for mobile).

2.2. Access and interconnection

The migration of fixed and mobile networks towards an IP interconnection architecture for voice has started, with several operators proposing both architectures. However, no calendar for migration including a shut off date for TDM interconnection has yet been set.

Some of the largest ISPs in France continued to actively negotiate paid peering with their interconnection partners (transit providers, OTT players, etc.).

3. BROADBAND PLANS AND FINANCING

France is moving forward on the implementation of its national high speed broadband plan (*Plan France Très Haut Débit*), which was revamped in February 2013. The plan, although technologically neutral, relies heavily on fibre technologies and aims to cover the whole country by 2022 mostly with FTTH/B. The central task force *Mission très haut débit* that steers the plan and coordinates the efforts of local authorities (on a scale no smaller than *départements*¹⁵) in deployment of networks was integrated in the *Agence pour le Numérique* created in February 2015.

On the basis of the power to request operators to provide the geographical data on their networks, provided for in a law of 2008¹⁶, the large majority of *départements* have set up territorial ‘master plans of digital development’ (*SDTAN*), generally available online, that take stock of existing infrastructure and outline a strategy for further development. Furthermore, in 2014, the *Mission très haut débit* developed a central tool for the mapping of fixed telecom infrastructure¹⁷, providing current and forward-looking information on coverage and speeds. On this basis, the plan distinguishes between, on one hand the *zones conventionnées* where operators have committed to invest € 7 billion as a whole through trilateral agreements (State-local authority-operators) and which cover 57 % of the population, and on the other hand, the *réseaux d’initiative publique* where deployment is ensured by local authorities and is estimated to amount to € 14 billion. To ensure that public financial support is targeted, local authorities are not to initiate any deployment in areas considered to be served by the market. Implementation has progressed well over the reporting period and as of March 2015, 73 local network projects had been notified to central authorities.

The government estimates total costs of securing high speed broadband for all at € 20 billion, of which one third will need to be covered by public funds. On average, half of the amount covered by public funds is to be provided by the State and the rest by local authorities with the use of EIB or ERDF loans.

An experiment is ongoing in a municipality outside Paris concerning migration from the copper network to FTTH/B. The same challenge was the focus of the Champsaur task

¹⁵ A regional subdivision, there are 96 *départements* in France.

¹⁶ *Loi sur la modernisation de l’économie*.

¹⁷ <http://www.francethd.fr/observatoire-france-tres-haut-debit/>

force (named after its leader Paul Champsaur), which delivered its report in February 2015. The report suggests the creation of ‘zones fibrées’ where fibre is available in 100 % of a defined territory and where copper should progressively be shut down.

4. INSTITUTIONAL ISSUES

4.1. The National Regulatory Authority

	2014
Personnel ¹⁸	171
Increase	0 %
Budget	€ 21.6 Million
Increase	-1.37%%
Administrative charges ¹⁹	€ 5.9 Million
Administrative costs ²⁰	€ 19.4 Million

The *Autorité de Régulation des Communications Electroniques et Postes* (ARCEP) is vested with the main regulatory tasks under the regulatory framework. The Ministry of Economy Industry and the Digital Sector²¹, the Ministry of Culture and Communication²², and the High Audiovisual Council²³ have responsibility for certain areas of spectrum, broadcasting, ultra-fast broadband strategy, universal service, numbers 112 and 116 and consumer issues. The division of tasks between these authorities are clearly defined between these authorities.

ARCEP has full control over its budget, subject only to an independent audit. The budget has slightly decreased during the past four years.

Cooperation with other authorities (the Ministry, competition, broadcasting and spectrum authorities) has been good. Over the reporting period, the competition authority provided opinions on two draft decisions on market analysis and on ad hoc issues requested by the government, the Senate and trade unions. It also authorised two mergers in the sector.

The members of ARCEP’s Executive Board are appointed for a term of six years, and their terms are permanent and non-renewable. Three out of seven members are appointed by the President of the Republic, two by the President of the National Assembly and two by the President of the Senate. On 15 January 2015, after consulting the relevant parliamentary committees on electronic communications and the postal sector, the President of the Republic appointed a new chair to ARCEP. The annual work programme of the NRA does not require any approval by another authority.

¹⁸ Number of staff in full time equivalents (fte).

¹⁹ In the sense of Art. 12 of the Authorisation Directive (Directive 2002/20/EC as amended by Directive 2009/140/EC).

²⁰ Idem.

²¹ Ministère de l’Économie, de l’Industrie et du Numérique.

²² Ministère de la culture et de la communication, Direction générale des médias et des industries culturelles.

²³ Conseil Supérieur de l’Audiovisuel (CSA).

The Finance Law for 2014 set a staff reduction with five graduated positions being cut, pursuing the staff reduction already started in 2013. This has led ARCEP to review its priorities. The Commission will closely follow any development in this matter.

In 2014, the Council of State ruled on three cases of judicial review of ARCEP's decisions. The first concerned ARCEP's decision for wholesale broadcasting market regulation for DTT (digital terrestrial TV) for the period 2012-2015. The Council of State confirmed ARCEP's right to impose *ex ante* regulation in these markets. In the second, the Council of State rejected a request for the annulment of ARCEP's decision modifying the duration of amortisation of the incumbent's copper local loop. Finally, on 18 June 2014, the Council of State validated ARCEP's decision authorising *Bouygues Telecom* to provide 4G services by refarming the 1800 MHz band, starting on 1 October 2013.

The decree detailing the sanction powers reinstated by the *Ordonnance* of March 2014 was adopted on 1 August 2014. The new rules create a separation between the proceedings and the sanction-imposing decisions by assigning them to different members of the ARCEP Executive Board (four members prosecute and three other members impose subsequent penalties, if applicable). In this context, since September 2014, ARCEP opened 21 proceedings against various operators. They are ongoing.

Over the reporting period, six dispute resolution decisions were adopted, four of which concerned added-value services.

4.2 Authorisation and licences

The *loi No 2013-1028 du 15 novembre 2013 relative à l'indépendance de l'audiovisuel public* changed the regime of modification of authorisations granted to channels by the national broadcasting regulator CSA²⁴. This entitles the regulator to accept any change in financing schemes of TV channels without implementing the automatic withdrawal of authorisations in case of substantive modification, as provided by law (from pay TV to free-to-air and vice versa). The Commission has raised concerns in view of the compatibility of this power with the Authorisation Directive and is currently engaged in an exchange of views with the French authorities.

The terms attached to operators' frequency licences include roll-out obligations, which ARCEP is responsible for verifying and enforcing. Regarding 3G, measurements were performed in order to verify the obligations by two operators (99.3 % of the population for the first and 75 % for the second). Regarding 4G, the four mobile operators are required to have 25 % population coverage by October 2015 and they are reported to be well advanced. Nevertheless, ARCEP has started to verify operators' 4G services coverage claims in 2014, which has led two operators to correct their stances

On 29 January 2015, a law on temperance, information and transparency regarding exposure to electromagnetic fields²⁵ was adopted. The law defines a framework aimed at ensuring that mobile deployment respects what is called a 'temperance' objective regarding electromagnetic fields, while ensuring innovation development. Information obligations are also upgraded.

²⁴ *Conseil Supérieur de l'Audiovisuel*.

²⁵ *Loi du 9 février 2015 relative à la sobriété, à la transparence, à l'information et à la concertation en matière d'exposition aux ondes électromagnétiques*.

Regarding mobile satellite services, and following the 2010 authorisation of Solaris, the second selected operator Inmasart was authorised by Decision 2014-1257 of 21 October 2014.

No new sector-specific taxation was introduced over the reporting period. Overall, operators deplore the high level of taxation specifically regarding ECS providers and the lack of a level playing field with OTTs on the matter.

5. SPECTRUM MANAGEMENT

With regard to refarming, while the modification of frequency tables in line with harmonisation decisions has been carried out. However, some individual existing rights of use need to be modified in order to allow neutral use of spectrum. In particular, while the 800 MHz, 1800 MHz (for one operator so far) and 2.6 GHz bands are already available as technologically neutral, the 900 MHz and 2.1 GHz bands are not. In December 2014, the newest mobile operator was granted 5 MHz in the 1800 MHz band, based on ARCEP's guidelines on the introduction of technological neutrality in the 1800 MHz band published in March 2013.

On 10 December 2014, the French Prime Minister announced ambitious plans for releasing the 700 MHz band, which is currently used by digital terrestrial television, to mobile. This led ARCEP to launch a public consultation on a strategic review of spectrum for ultra-high speed mobile services. The consultation sought views on the reuse of existing frequencies with more efficient technologies and making new frequencies available, with a focus on the 700 MHz band. The auction should take place in December 2015 and the release of the band should spread geographically from April 2016 to June 2019. ARCEP is to establish the framework and the details of the auction as soon as possible.

The transfer of usage of this band will entail the closing of two of the eight multiplexes. Today, DTT, although declining, is still the leading television platform in France. In June 2014, 59.1 % of metropolitan TV households had this, compared with 59.49 %²⁶ the year before. IPTV over ADSL or FTTH/B has confirmed its expansion as the second television platform, with a penetration rate of 43.7 % of households in June 2014, compared with 39.9 % in June 2013. At the same time, satellite TV remained more or less unchanged with a penetration rate of 25 % at the end of June 2014. Cable has decreased from 8.9 % in June 2013 to 8.4 % in June 2014.

As far as fixed services are concerned, in March 2014, on a referral from ARCEP in early 2013, the public prosecutor launched an investigation into Skype to look into a possible criminal offence because of Skype's refusal to declare itself as an electronic communications operator in France (regarding the service enabling Skype's customers to call fixed or mobile numbers). A bill²⁷ currently being discussed at Senate level would entitle ARCEP to take the initiative to register as an electronic communications operator any undertaking which operates a public electronic communications network or provides electronic communications services to the public and has failed to register itself.

²⁶ Source: *Médiamétrie — Observatoire de l'équipement audiovisuel*.

²⁷ *Projet de loi pour la croissance, l'activité et l'égalité des chances économiques*.

6. RIGHTS OF WAY AND ACCESS TO PASSIVE INFRASTRUCTURE

The procedures for granting rights of way are a local responsibility and can be burdensome. Transparency of procedures is not guaranteed. Electronic submission of requests is not available.

Access to telecom passive infrastructure is required on an asymmetric basis with respect to ducts and aerial networks. At the end of 2014, 18.400 km of ducts under the authority of the incumbent operator were being used by alternative operators in the context of FTTH/B deployment, compared with 13.000 at the beginning of the year. In addition, the obligation for symmetric infrastructure sharing concerns parts of the FTTH/B infrastructure, in particular in-house wiring up to a certain point, and also backhaul under specific conditions. Access to other utilities infrastructure is provided, in particular to sewers, as is access to publicly financed works. Coordination of civil infrastructure works is organised at the level of municipalities. A registry of permits for civil works is not in place. Builders must inform local communities of planned works on public buildings and thoroughfares by submitting declarations of intent (*'déclarations d'intention de commencement de travaux'*). Infrastructure owners who are about to carry out installation or maintenance projects of 'significant length' (approximately 150 m in urban areas and 1km in rural areas) are obliged to inform local authorities of their plans for surface works (such as stripping and replacing surfaces), works on overhead lines, and any works that require excavations. These infrastructure owners are obliged to allow operators to install electronic communications equipment in any trenches that are created during the works. Local authorities have to inform operators of their intention to launch new construction projects or to improve existing infrastructures (beyond a given length).

Since January 2010, FTTH/B wiring is mandatory for new construction permits for buildings. Since April 2012, the minimum number of fibres per household in new buildings has been set at four fibres for buildings with at least 12 units in very dense areas, and one fibre in buildings in other cases. A bill²⁸, currently being discussed at Senate level lays down the obligation for all new residential accommodation (buildings or single houses) to be equipped in fibre as of 1 July 2016.

Work is progressing well regarding the implementation of Directive 2014/61/EU, which should be enacted by means of *Ordonnance*, according to the *Projet de loi pour la croissance, l'activité et l'égalité des chances*.

7. CONSUMER ISSUES

7.1. The European emergency number 112

Tests for a shared web-based platform aiming at ensuring faster availability of localisation data are currently being carried out. The platform brings together information between all operators and public safety answering points and should be available as of April 2015. Two other emergency numbers were created over the reporting period: 191 for maritime rescue and 196 for aeronautical rescue.

²⁸ *Projet de loi pour la croissance, l'activité et l'égalité des chances économiques*.

7.2. Number portability

Number portability ²⁹		2013	2014
Fixed	Number of transactions	1,876,000	1,905,000
	% of total numbers	-	-
	Maximum wholesale price	0.0	0.0
	Maximum time under regulation (number of working days)	1	1
Mobile	Number of transactions	4,614,000	3,950,000
	% of total numbers	7.1%	5.8%
	Maximum wholesale price	0.0	0.0
	Maximum time under regulation (number of working days)	1	1

Among Member States, France has high rates of fixed number portability.

Further to ARCEP's June 2013 decision aiming to simplify the procedure and reduce the total time needed for the porting of fixed telephone numbers, ARCEP is working on the creation of a prefix number linked with every operator number (*préfixe de relevé d'identité opérateur* or *RIO*).

The one-day number portability rule has been reconciled with the right of withdrawal within 14 days from a contract concluded away from a retailer's shop or premises. Under a law on consumer issues³⁰, a specific system was created when portability is requested by the consumer before the expiry of the right of withdrawal. In this situation, the number is kept by the consumer and the consumer has to pay for any services provided before the actual porting, without being required to pay any cancellation costs.

7.3. Contractual obligations

Contractual requirements under Directive 2002/22/EC are transposed in the *Code de la Consommation*. This grants the consumer the right to request contract termination at any time with a 10-day notice period and the right to withdraw from the contract without penalty upon notice of any modification by the provider to the contractual conditions agreed with the consumer.

7.4. Other consumer issues

In 2014, the number of claims received by ARCEP decreased by five percentage point compared with 2013, from 6 726 to 6 378. 67 % concerned fixed telephony and internet and 31 % concerned mobile. Two major types of issue were raised, each representing 25 % of the total amount: issues related to contract execution and billing; and issues related to quality or availability of services. Other issues concerned number portability or practices by added-value services.

²⁹ Source: figures provided by France to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe.

³⁰ *LOI No 2014-344 du 17 mars 2014 relative à la consommation*.

8. UNIVERSAL SERVICE

The situation regarding universal service has not changed significantly during the reporting period. In line with its triennial designation in 2013, *Orange* is the universal service provider for telephony connection at a fixed location and telephony services. While its designation for public payphones expired in February 2014, *Orange* is still providing the service but is progressively dismantling payphones. In December 2014, the designation of *Pages Jaunes* for the printed directory expired but has not yet been renewed.

Reflections on the modernisation of the universal service are however progressing. In October 2014, a report carried out by two members of parliament was submitted to the minister in charge. The report describes the state of play and provides policy recommendations to adapt universal service obligations in view of the obsolescence of some services. The report should be used as a basis for future modifications.

The provisional cost of the universal service in France in 2013 has been estimated at € 30.7 million and € 28.5 million in 2014. The NRA has determined that the provision of universal service constitutes an unfair burden for the designated universal service provider and has implemented a scheme to calculate and share costs. Universal service is thus financed by a sector-specific fund. About 70 operators contribute to this fund on the basis of their gross revenues. For instance, *Orange*, as USO provider, received 14.175 million for the year 2012 and 17.697 million for the year 2013 from the alternative actors of the sector.

9. NET NEUTRALITY

9.1. Legislative situation

Reflection on national net neutrality rules is still developing, based on four reports: ARCEP's report of September 2012; the National Digital Council's³¹ report of March 2013 and its extended report on 'Platforms neutrality' issued in June 2014 and the annual report of the Council of State for 2014³². This reflection could contribute to the preparation of a bill on digital matters that is expected to be presented before the parliament after the summer.

9.2. Quality of service

ARCEP publishes various reports monitoring the quality of services.

Regarding the quality of fixed services, operators with more than 100 000 subscribers are required to publish on their websites quarterly results of the performance measurement of their services: six operators did so in 2014. ARCEP published a synthesis of the results in January 2015.

On 23 June 2014, ARCEP published the results of its fifteenth survey on the quality of mobile services. The survey was carried out in the first quarter of 2014 and is based on

³¹ *Conseil National du Numérique.*

³² *Etude annuelle 2014 du Conseil d'Etat — Le numérique et les droits fondamentaux.*

some 90 000 measurements designed to encompass the vast array of situations that users encounter (outdoors, indoors, in a car, on a train, in a city, in the country) and the various services offered (calling, texting, mobile internet). While most of the measurements were made for 2G and 3G services, the first metrics of 4G networks were also measured on a trial basis. According to the survey, the median 4G download speed is 17.9 Mbps, compared with 7.2 Mbps with 2G/3G. Upload speeds increase from 1.5 Mbps to 5.5 Mbps with 4G. Significant discrepancies between operators were identified.

In November 2014, ARCEP published a test version of its new quality of service scorecard for fixed internet access provided in metropolitan France. This tool complements the ‘observatories’³³ that have already been published on a regular basis. the observatories assess the quality of fixed network access and wireline calling, on the one hand, and on mobile service quality and coverage on the other. The system to be introduced may eventually contain two parts: measurements that are taken in a controlled environment on dedicated test lines (the ‘main’ tool) and measurements taken by users themselves (the ‘supplementary’ tool). At this stage, only the main tool is in place. The publication of this report was challenged by one operator (*Free*) before the Council of State. In a ruling of 12 December 2014, the Council of State rejected the suspension of publication.

³³ <http://www.arcep.fr/index.php?id=12612>

Germany

1. MARKET DEVELOPMENTS

Broadband indicators (December 2014)¹	DE 2013	DE 2014	EU 2013	EU 2014
Fixed broadband coverage ²	97%	98%	97%	97%
NGA coverage ²	75%	81%	62%	68%
Fixed broadband take-up ²	81%	83%	69%	70%
Share of >30Mbps subscriptions ³	16%	21%	21%	26%
Share of >100Mbps subscriptions ³	3%	5%	5%	9%
Share of DSL in fixed broadband ³	81%	79%	73%	70%
Incumbent market share fixed broadband ⁴	43%	42%	42%	41%
HSPA Mobile broadband coverage ²	92%	93%	97%	97%
LTE Mobile broadband coverage ²	81%	92%	59%	79%
Mobile broadband penetration ⁵	55%	65%	64%	72%
Market share of leading mobile network operator ⁴	-	-	35%	35%

The number of fixed broadband connections continued to increase in 2014 and reached 29 572 818 lines in January 2015. DSL including VDSL continued to be the most used technology covering 79 % of the lines, followed by cable technology. 53 % of the DSL broadband lines are provided by the incumbent operator Deutsche Telekom. As a result of a cooperation agreement concluded with Deutsche Telekom, Telefónica began gradual migration from its own LLU-based ADSL2 + platform to the use of bitstream products provided by the NGA platform of the incumbent in May 2014. Owing to this migration, Telefónica will disappear from the bitstream market as a network competitor. At the

¹ Sources: coverage data — studies by IHS and VVA; penetration data — figures provided by Germany to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe (except fixed broadband take-up, provided by Eurostat).

² % of households.

³ % of fixed broadband subscriptions.

⁴ % of subscriptions.

⁵ Subscriptions per 100 inhabitants.

same time, the operator is expected to increase its competitiveness due to the possibility to offer high speed broadband connections based on VDSL and VDSL-vectoring.

The TV cable infrastructure based on DOCSIS 3.0 continued to be the main alternative broadband infrastructure leading to significant dynamic on the market. The cable operators' market share increased by one percentage point and reached 20 % of all fixed broadband subscriptions as of January 2015. The cable operators reported that they currently offer internet connections of up to 200 Mbps on the market. Approximately 64.5 % of all cable end-users subscribed to internet connections exceeding 30 Mbps and above 13 % subscribed to internet connections of at least 100 Mbps⁶.

As regards NGA connections, the incumbent's strategy during the last year has mainly been focused on deploying infrastructure based on VDSL-vectoring technology that allows for high speed connections of up to 100 Mbps. By 2016, Deutsche Telekom plans to provide 65 % of households with a broadband connection based on vectoring technology. The deployment of FTTH/B lines, especially in small cities and rural areas, continued to be carried out almost entirely by alternative operators. In this context the number of municipal companies (utilities or specially established network undertakings) deploying fibre networks is constantly increasing. Alternative operators claimed overbuilding of infrastructure by the incumbent in the areas where it had originally opted not to build such infrastructure.

With regard to take-up, demand for FTTB/FTTH access products increased slightly but still remained relatively low in 2014. In January 2014, take-up of the available FTTB/FTTH broadband access lines was less than 20 %. In January 2015, the FTTH/B subscriptions represented only 1 % of all fixed broadband subscriptions which was far below the EU average of 8.0 %.

The importance of bundled services on the market is constantly increasing. In 2014, it was virtually impossible for new customers to subscribe to a standalone service. The most popular bundles combined fixed or mobile voice and broadband services. These were followed by triple-play bundled services combining fixed broadband, fixed voice and TV services. It is expected that triple-play bundles could lose their attractiveness in the near future due to the fact that media content is also available online.

With regard to the mobile market, 2014 was marked by signs of market consolidations. In 2014 the mobile network operator Telefónica Deutschland acquired sole control of E-Plus. After carrying out an in-depth investigation, the Commission approved the proposed acquisition in July 2014⁷. The Commission's approval was made conditional upon the full implementation of a commitments package submitted by Telefónica. The mobile operator committed itself *inter alia* to selling upfront up to 30 % of the capacity on the consolidated network prior to the closing of the transaction to another provider. In June 2014, Telefónica concluded an agreement with MS Mobile Services GmbH, a subsidiary of Drillish AG, for the purchase of 20 % (plus an optional further 10 %) of the merged network capacity with access to all technologies. As a consequence of the merger, the number of mobile network operators in Germany fell from four to three.

⁶ Source ANGA Verband (December 2014).

⁷ Case COMP/M.7018.

The roll-out of LTE services was carried out by all three operators using the 800 MHz, 1800 MHz and 2.6 GHz spectrum bands. According to the information provided by the mobile operators, Deutsche Telekom and Vodafone achieved population coverage of around 80 % and Telefónica more than 67 % in 2014. At the end of 2014, LTE services were available to over 92 % of German households⁸.

2. MARKET REGULATION

2.1. Market analysis

In August 2013 the Federal Network Agency (BNetzA), the German national regulatory authority, published its decision⁹ on introducing VDSL-vectoring technology at street cabinets outside a range of 550 m around the central offices in the network of Deutsche Telekom. BNetzA decided that, in general, the incumbent has to grant unbundled access ‘to the last mile’ to its competitors but can refuse such access to the sub-loop under specific circumstances in order to enable the deployment of vectoring technology either by themselves or by another operator. In line with the conditions of open network access, the incumbent or the alternative operator using vectoring technology is obliged to offer as a substitute an appropriate bitstream product. In June 2014, BNetzA adopted another decision which concerned in particular the registration procedure in the so-called ‘vectoring list’ in which the plans and the concrete usage of VDSL-vectoring need to be recorded. This list is maintained by the incumbent under the supervision of BNetzA. Furthermore, the decision also foresees sanctions in case of abusive reservation of sub-loops, outstanding deployment of vectoring or in case of non-availability of the bitstream product.

In February 2015, Deutsche Telekom applied to BNetzA for a change in the regulatory conditions to ensure access to the local loop in the so-called ‘last mile’ in order to be able to deploy vectoring also at street cabinets within the close range of 550 m around the central offices and at the central offices. A draft decision will be notified to the Commission pursuant to Article 7 of the Framework Directive¹⁰.

In 2014, BNetzA and the Federal Cartel Office gave final approval to the cooperation agreement between Deutsche Telekom and Telefónica Deutschland. The agreement concerned Telefónica’s access to the incumbent’s NGA platform. The cooperation agreement will enable Telefonica to offer its customers high speed broadband connections based on VDSL-vectoring.

During the reporting year BNetzA adopted further regulatory measures concerning the fixed and mobile termination rates and continued not to apply the recommended¹¹ pure BU-LRIC approach for calculating the costs of an efficient operator. Instead, BNetzA continued to apply a so-called LRIC+ approach that leads ultimately to a significantly

⁸ Source TÜV Rheinland ‘Bericht zum Breitbandatlas 2014’.

⁹http://www.bundesnetzagentur.de/SharedDocs/Pressemitteilungen/DE/2013/130829_VectoringEntscheidg.html.

¹⁰ Directive 2002/21/EC of the European Parliament and of the Council of 7 March as amended by Directive 2009/140/EC, OJ L 337, 18.12.2009, p.37.

¹¹ Commission Recommendation of 7 May 2009 on the regulatory treatment of fixed and mobile termination rates in the EU, OJ L 124, 20.05.2009, p.67.

higher level of termination rates. Despite the recommendation of the Commission to withdraw or amend the draft decisions, the NRA decided to adopt its final regulatory measures unchanged. The Commission is looking closely into the matter.

In November 2014, BNetzA launched public consultations on a draft decision concerning the market definition and market analysis of the bitstream access at a fixed location¹². For the first time BNetzA carried out an assessment of the market developments and competition conditions at regional level. For this purpose the regulator elaborated a set of criteria for determining competitive situations in the regionally segmented layer 3 product market. As a result of this assessment, BNetzA proposed that 15 cities should no longer be considered subject to regulation as far as layer 3 bitstream access market is concerned. A prerequisite for deregulation is availability of the complementary layer 2 bitstream access product on the market. The proposed regulatory measure is expected to be notified to the Commission pursuant to Article 7 of the Framework Directive in the second Quarter of 2015 with adoption foreseen by the NRA for mid-2015.

In December 2014, BNetzA adopted a decision concerning the market for the provision of terrestrial transmitters for the transmission of analogue VHF-radio signals for content providers and the market for the use and/or sharing of antennae¹³. BNetzA imposed on Media Broadcast GmbH a differentiated *ex ante* and *ex post* price control obligation and a set of obligations on the SMP operator related to the access to the use and/or the sharing of antennae. In April 2015 BNetzA published a draft rates decision for national consultation.

2.2. Access and interconnection

There are no reporting obligations for the operators with regard to improving the monitoring of the IP interconnection market and the functioning of existing IP interconnection agreements.

Within the imposed obligation on transparency, the incumbent has to submit each NGN interconnection agreement to BNetzA. In the course of a procedure related to the approval of a reference offer requested by the incumbent with regard to PSTN and IP interconnections, BNetzA has specified some key elements that the incumbent needs to consider when implementing the new reference offer. Among other things, Deutsche Telekom was obliged to follow concrete steps during the migration from PSTN interconnection to the IP interconnection in order to avoid that access seekers will be forced to tap a new point of interconnection for a short transitional period. The burden of IP interconnection for small and local operators was reduced, and conditions were removed that might have inhibited other operators to move faster towards IP interconnection than the incumbent. BNetzA has not received any disputes in relation to IP interconnection specifically.

The incumbent, Deutsche Telekom, has set itself a deadline of December 2018 for migrating its fixed network to IP interconnection architecture.

¹² See market 3b of the Commission Recommendation of 9.10.2014 on relevant product and service markets within the electronic communications sector susceptible to *ex ante* regulation in accordance with Directive 2002/21/EC.

¹³ Corresponding to market 18 in Commission Recommendation 2003/311/EC of 11 February 2003 on relevant product and service markets within the electronic communications sector, OJ L 114, 8.05.2003.

3. BROADBAND PLANS AND FINANCING

In August 2014, the Federal Government adopted the 2014-2017 Digital Agenda which is setting out the guidelines of its digital policy. It stated that an efficient mix of technologies should provide nationwide broadband infrastructure with download speeds of at least 50Mbps by 2018. By means of enhanced framework conditions, the German government intends to create incentives for market-driven broadband expansion. It plans to promote network sharing and to facilitate a regulatory framework that supports investment and innovation, creates legal and planning certainty for all stakeholders and gives due regard to expanding networks in rural areas.

In March 2014 the government established the ‘Network Alliance Digital Germany’ initiative. Within this forum, providers of electronic communications services and networks, researchers and representatives of the national authorities identify relevant topics related to broadband deployment and identify possible solutions. In this context, private companies announced their readiness to invest more than 8 billion euro in the roll-out of NGA infrastructure in the next few years. In October 2014, the alliance developed a roadmap setting out specific actions in key areas foreseen for 2014 and 2015. One of these areas is the use of the 700 MHz spectrum band (second digital dividend) for wireless telecommunications services. The early allocation of the spectrum band is considered an important step towards ensuring faster access to high speed networks in certain peripheral areas. The inclusion of the 700 MHz spectrum band in the upcoming spectrum auction (*see Section 5*) was agreed nationally between the federal level (*Bund*) and the German *Länder* (federal states) at a conference of the minister-presidents that took place in December 2014. However, the band is still used by the public broadcasters for the transmission of digital terrestrial television and other services. The gradual release of the band is planned for 2017 and 2018. In this context, the government set up a reimbursement mechanism to compensate current users of the 700 MHz band.

In order to address the broadband market failure in rural and structurally-weak regions of the country, the federal level (*Bund*) and the German *Länder* (federal states) plan to intervene by using efficient funding measures that draw on the existing state aid framework for technology neutral tenders and to develop a financial instrument in the form of a premium fund for broadband network development (*Premiumförderung Netzausbau*) in addition to existing programmes. In December 2014 they agreed to use revenues resulting from the upcoming auction of frequencies in the 700 MHz and 1500 MHz bands for broadband deployment. In this regard some operators raised concerns that such dedicated use of the revenues could affect the bidder behaviour. In addition to revenues from the spectrum auction, one billion euros from the national budget will be allocated to funding measures.

In March 2014, Germany submitted an umbrella notification to the Commission for a framework NGA broadband support scheme. The notification covers support measures in areas where no NGA networks currently exist and are not likely to be built in the next three years.

Nine German projects applied for the Commission’s ‘Connected Communities’ initiative launched in July 2014. The successful projects will be able to apply for funding through the Connecting Europe Facility (CEF) and the European Investment Bank (EIB).

4. INSTITUTIONAL ISSUES

4.1. The National Regulatory Authority

The German regulatory authority (BNetzA) is the independent national regulatory authority under the regulatory framework and is vested with the main regulatory tasks assigned to national regulatory authorities under the regulatory framework for electronic communications in the EU.

	2014
Personnel ¹⁴	2427.37 ¹⁵
Increase	5.1 %
Budget	€ 198 Million ¹⁶
Increase	5.3 %
Administrative charges ¹⁷	€ 39.73 Million
Administrative costs ¹⁸	€ 84.90 Million

The average number of staff in 2014 was 2427 which constitutes an increase of 5.1 % since 2013. The budget available to BNetzA in 2014 was EUR 198 million, an increase of 5.3 % compared with 2013. There was also a 5.2 % increase in the administrative charges.

BNetzA's president of the NRA is appointed for a of five-year term by the *Bundespräsident* (federal president). The appointment is renewable once. In the exercise of his tasks, the president is supported by two vice-presidents. A legal ground for a dismissal of the president can be the non-fulfilment of the conditions for carrying out the respective duties or for negligent misconduct. The president can be dismissed by the federal government upon a request of the responsible Ministry, after consulting the Advisory Council.

Under the German Telecommunications Act, the BNetzA has to submit an activity report every two years describing the authority's regulatory activities, the current situation and the developments on the market for electronic communications. This report has to be submitted along with the official report of the *Monopolkommission* (Monopolies Commission) — an independent advisory body of the government and the legislative bodies-which includes an analysis on the competition developments in this sector. In addition, the BNetzA publishes an annual report on the developments of the telecommunications market including an overview of the key regulatory actions BNetzA has taken.

In 2014, the BNetzA adopted 253 regulatory decisions in total. There were 29 appeals against 20 decisions. BNetzA decisions can be judicially reviewed by the Administrative Court and the federal administrative court. Some of its decisions can be subject to pre-

¹⁴ Number of staff in full time equivalents (fte).

¹⁵ The figures refer to BNetzA as a whole, not to the telecommunications sector alone.

¹⁶ Idem.

¹⁷ In the sense of Art. 12 of the Authorisation Directive (Directive 2002/20/EC as amended by Directive 2009/140/EC).

¹⁸ Idem.

trial proceedings before the BNetzA in its capacity as an appeal body. 25 proceedings initiated in 2014 are pending before the Administrative Court. No judgments were delivered on them in 2014. The German federal court referred a case to the Court of Justice of the European Union for a preliminary ruling concerning the notification requirements under Article 7 of the Framework Directive.

4.2. Authorisation and licences

Undertakings intending to provide electronic communications services in Germany only need to notify the national regulatory authority, BNetzA.

The licenses issued in 2010 for the usage of frequencies in the 800 MHz spectrum band contained a coverage obligation that requires operators to achieve mobile broadband coverage of at least 90 % of the population by the end of 2016. This has led to a significant improvement of mobile broadband coverage in Germany in recent years.

With regard to the forthcoming assignment of the 700 MHz band in 2015, BNetzA decided to require each assignee which is an existing operator to provide broadband coverage to at least 97 % of households in each federal state and at least 98 % of households nationwide within 3 years. These spectrum holders are also required to ensure nationwide broadband coverage of the population with mobile-based transmission technologies that achieve a minimum transmission rate of 50 Mbps per sector. This coverage obligation on each network operator is to ensure the general availability of download transmission rates of 10 Mbit/s and more in relation to the percentage of required household coverage.

5. SPECTRUM MANAGEMENT

In the context of the Commission's approval of the merger between the two mobile network operators Telefónica Deutschland and E-Plus (*see Section 1*), BNetzA issued a decision in July 2014 on the frequency regulation aspects of the merger in accordance with the provisions of the German Telecommunications Act. The regulator saw a need to ensure the non-discriminatory assignment of spectrum rights to all existing mobile network operators and required Telefónica to return frequencies in the 900 MHz and 1800 MHz spectrum band by 31 December 2015 or one year before the expiry date of the licences. At the same time, BNetzA committed itself to take an overall perspective of the competitors' changed spectrum packages after the spectrum auction in 2015 and to re-examining the need for any further regulatory interventions, especially with regard to the 2 GHz band.

In January 2015, BNetzA published a decision on the spectrum auction (so-called Project 2016) which will be carried out in May 2015. Subject to the auction are frequencies in the spectrum bands 700 MHz (2x30 MHz), 900 MHz (2x35 MHz), 1800 MHz (2x50 MHz) and 1500 MHz (1x40 MHz). All licences will be granted until the end of 2033, i.e. last for the duration of up to 17 years. As far as frequencies in the 900 MHz band are concerned, the NRA introduced a spectrum cap of 2x15 MHz which aims to ensure basic rights for voice communication for each mobile network operator. The 700 MHz spectrum band, currently used by public broadcasters for the transmission of digital terrestrial television and other services, is expected to be gradually released between 2017 and 2018.

6. RIGHTS OF WAY AND ACCESS TO PASSIVE INFRASTRUCTURE

The procedures for granting rights of way have to be decided within six weeks once the application has been completed. In order to facilitate this procedure, the German Telecommunications Act allows operators to request the transfer of rights of way from the federal level to the operators. As part of this procedure, BNetzA verifies the technical qualifications, efficiency and reliability of the applicant. Although the procedure does not replace the required consents of the responsible local authorities, the centralised examination by the regulatory authority significantly shortens the overall processing time for the granting of the permits.

The German Telecommunications Act allows the possibility for access to passive infrastructure, supporting synergies for the deployment of ducts, symmetric access obligations concerning in-house infrastructure, access to utilities infrastructure such as energy, water and railway infrastructure, and the cost-efficient deployment of fibre in pavements using ‘micro trenching’. Furthermore, the upgrade of buildings with NGA infrastructure does not require the owner’s permission if this does not permanently affect the usability of the premises.

Authorised users can access information from the infrastructure atlas (managed by BNetzA) on the geographic location of existing infrastructures that may be used for broadband deployment. In addition, the Ministry of Transport and digital infrastructure is operating an interactive federal broadband atlas which contains data on the local availability of broadband, type of technology used and bandwidth. This data base is available to the public online.

The Federal Broadband Office set up in 2010 continued to support the government’s broadband strategy. Its main tasks are to establish guidelines, advise the relevant market players and authorities on relevant technologies and funding, and share best practice and information on model projects in close cooperation with the broadband centres established at regional level.

7. CONSUMER ISSUES

7.1. The European emergency number 112

Under the German Telecommunications Act, BNetzA is responsible for laying down criteria for the accuracy and reliability of caller location. So far no such criteria have been established. Disabled people with hearing or speech impediments can carry out 112 calls by fax. A translation service (sign language and phonetic scripting) is available from 8:00 to 23:00, seven days a week. BNetzA is considering the introduction of a 112 smartphone application.

7.2. Number portability

Number portability ¹⁹		2013	2014
Fixed	Number of transactions	1,049,277	-
	% of total numbers	0.4%	-
	Maximum wholesale price	0.0	0.0
	Maximum time under regulation (number of working days)	1	1
Mobile	Number of transactions	1,128,168	1,220,108
	% of total numbers	1.0%	1.1%
	Maximum wholesale price	0.0	0.0
	Maximum time under regulation (number of working days)	1	1

The German Telecommunications Act provides for compensation for end-users in the case of delays in changing provider. In addition, the ‘donor’ provider is obliged to provide its service to the consumer until all contractual and technical details have been finalised with the ‘recipient’ provider. In 2012, BNetzA set up a single contact point for each provider, to which customers or switching operators can address their complaints. Despite this, the number of complaints remained very high in 2014. BNetzA has imposed several sanctions on operators who substantially infringed their obligations relating to provider switching. Germany remains among the Member States with the highest retail charges (up to EUR 29.95) for porting a number within the EU.

7.3. Contractual obligations

Article 30(5) of the Universal Service Directive has been transposed into the German Telecommunications Act. Accordingly, contracts concluded between consumers and operators cannot exceed 24 months and every provider shall offer a contract with a maximum duration of one year.

7.4. Other consumer issues

Consumer complaints in 2014 were focused on provider switching, contractual relations, and billing. Many incumbent’s customers experienced particular problems with the availability of services caused by the migration from PSTN to IP interconnection.

In February 2014, BNetzA adopted a draft regulation with the objective to increase transparency and the disclosure of information relating to the provision of mobile and fixed broadband services. The draft was subject to a public consultation until 31 March 2014 and the adoption of the final text is expected by the end of 2015. The new draft regulation will among other things oblige the operator to send a letter to the customer confirming the actual data transmission rate of the broadband connection before they sign

¹⁹ Source: figures provided by Germany to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe.

the contract. In addition, customers will be entitled to receive information from the provider at any time about the current data transmission rate of its broadband connection. Customers will also have more rights to control data consumptions. In addition, operators that provide a contractually limited data volume will be obliged to provide on request, at least on a daily basis, the actual data consumption of the customer in the billing period.

In 2014, BNetzA has tendered the development and processing of a measurement system for customers which will be able to measure the bandwidth of fixed and mobile broadband connections. The system should become operational in 2015.

Under a new draft law on the choice and connection of telecommunication terminal equipment²⁰, consumers will be entitled to opt for equipment (routers or modems) other than that offered by the service provider.

8. UNIVERSAL SERVICE

Under the German Telecommunications Act, the scope of the universal service includes: (i) the connection to a public telecommunications network at a fixed location which allows voice calls, facsimile and data communications at data rates that are sufficient to enable functional internet access; (ii) access to public telephony services through the connection referred to above; (iii) availability of at least one subscriber directory; (iv) availability of at least one public telephone enquiry service; (v) nationwide allocation of public pay phones or other access points to public telephone services; (vi) the ability to perform calls to emergency call services 112 and 110 from public pay phones by simple handling and free of charge.

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

In the event of designation of undertaking, the provision of universal service has to be funded by charges imposed on providers active in the relevant product market having a market share of at least 4 % of the combined total turnover of this market and on providers with significant market power in the relevant geographic market.

9. NET NEUTRALITY

9.1. Legislative situation

Besides the transposition of the Universal Service Directive²¹, there are no specific legal provisions on net neutrality in place. The Federal Ministry for Economic Affairs and Energy has carried out three studies in the context of net neutrality and organised several public discussions on the issue.

²⁰<http://www.bmwi.de/BMWi/Redaktion/PDF/P-R/referentenentwurf-gesetz-zur-auswahl-und-zum-anschluss-von-telekommunikationsendgeraeten.property=pdf.bereich=bmwi2012.sprache=de.rwb=true.pdf>

²¹ See §41a of the Telecommunications Act.

9.2. Quality of service

The national regulatory authority, BNetzA, is responsible for implementing quality of service and for monitoring quality of service in the sector. This includes specific aspects such as internet speed and other parameters. The results of a quality survey carried out in 2012 and 2013 by BNetzA upheld many consumer complaints concerning a discrepancy between the contractual ('up to') data rates and the actual ones. After having investigated the standard contracts, the NRA also confirmed that all operators provide only information on the range of the available bandwidth and do not actively provide their customers with a transparent overview of the actual data rates provided. Against this background, BNetzA proposed some transparency obligations for the service providers. *(see Section 7.4)*

Greece

1. MARKET DEVELOPMENTS

Broadband indicators (December 2014)¹	EL 2013	EL 2014	EU 2013	EU 2014
Fixed broadband coverage ²	100%	99%	97%	97%
NGA coverage ²	27%	34%	62%	68%
Fixed broadband take-up ²	54%	63%	69%	70%
Share of >30Mbps subscriptions ³	2%	3%	21%	26%
Share of >100Mbps subscriptions ³	0%	0%	5%	9%
Share of DSL in fixed broadband ³	100%	100%	73%	70%
Incumbent market share fixed broadband ⁴	43%	43%	42%	41%
HSPA Mobile broadband coverage ²	100%	99%	97%	97%
LTE Mobile broadband coverage ²	55%	70%	59%	79%
Mobile broadband penetration ⁵	37%	41%	64%	72%
Market share of leading mobile network operator ⁴	-	-	35%	35%

Despite the unprecedented economic crisis that Greece is going through, the electronic communications sector has been one of the most value adding sectors of the economy, with the telecoms sector contributing to 3 % of the entire GDP in 2014⁶. The continuous recession is having a negative effect on NGA deployment: Greece has the lowest level of

¹ Sources: coverage data — studies by IHS and VVA; penetration data — figures provided by Greece to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe (except fixed broadband take-up, provided by Eurostat).

² % of households.

³ % of fixed broadband subscriptions.

⁴ % of subscriptions.

⁵ Subscriptions per 100 inhabitants.

⁶ The mobile sector represents 1.3 % of the Greece GDP according to EEKT and Athens University of Economics and Business, 'The mobile Communications Industry as a main supporting pillar of the growth strategy of the Greek Economy', November 2014. According to this survey, '*despite the industry's total decrease in revenues by 54 % and of profits by 58 % since 2007 (that is recession twice as high as the national economy), the industry has continued investing a fixed proportion of its revenues (11-13 %) and profits (28-35 %), throughout the recession. In 2014 alone, investments amount to 300 million euros, while 381 million euros were additionally invested for the sole purpose of acquiring spectrum band licenses*'.

NGA subscriptions of all Member States with only 3 % of total broadband subscriptions being NGA⁷ in January 2015.

In the fixed market, 2014 was marked by Vodafone's acquisition of HoL, a provider which has the largest fibre optic network among the alternative operators (5200 km), has invested more than 440 million euros in infrastructure deployment and has 11 % market share in the fixed voice market, which will be added to Vodafone's 1.1 % market share. As a result of the merger, the telecom part of which was cleared by EETT as competition authority in the sector⁸, all three mobile operators (Cosmote, Vodafone and Wind) are part of groups offering both fixed and mobile services. The merger is also expected to pave the way for further consolidation in the market. The incumbent's market share of fixed broadband lines was unchanged, at 43 % in 2014. The incumbent is however almost the only provider investing in VDSL cabinets and its market share reached almost 90 %.

In the voice market, the market share of VoIP continued to grow from 9.7 % in the 1st semester of 2013 to 10.3 % in the 1st semester of 2014⁹. According to data from the NRA, while the volume of the fixed telephony continued to drop during the first semester of 2014, the volume of managed VoIP traffic was relatively stable. This could be a sign of migration to unmanaged VoIP. The incumbent announced to EETT its intention to migrate to an all-IP network approach, to be completed not earlier than 2018 and to start providing to all new subscribers an IP voice service, and to gradually migrate its bundle customers to VoIP. A move to IP interconnection with the incumbent is expected for the beginning of 2016.

In the mobile market, Cyta has begun to provide mobile services in Greece, by means of a commercial full MVNO agreement with Vodafone. LTE geographic coverage reached 33 % of the land and 21.7 % of the sea territory in 2014¹⁰. The deployment of LTE following the assignment of rights of use in the 800 and 2600 MHz bands is expected to increase not only the footprint, but also the capacity of the networks.

Vodafone and Wind have sealed a network sharing agreement regarding their 2G, 3G and obviously 4G networks. In March 2014, the joint venture, Victus Networks, started managing the radio access and transmission networks of its parent companies, and, in parallel, implementing a partial radio network sharing, based on site co-location, mostly in rural and in limited selected urban areas.

A strong trend was the steep increase in the take-up of pay TV Services through mainly Satellite, but also IPTV. Between 30 June 2013 and 30 June 2014, there were almost 250000 new subscriptions, accounting for 7 % of local households¹¹. The market share difference between the market leader and the biggest challenger has decreased by 10 percentage points this year.

The penetration of bundled services continued to grow from 41 % in July 2013 to 42 % a year later. According to EETT, it represents today more than 60 % of the total number of

⁷ FTTH, FTTB, VDSL, Cable Docsis 3.0 and other NGA. Greece does not have any FTTH or Cable networks.

⁸ The content part is still pending before the Competition Commission.

⁹ Data from EETT.

¹⁰ Data from EETT.

¹¹ Data from EETT.

fixed lines. EETT imposes an obligation on the SMP operator to notify every new bundle containing retail access, and any modification thereof, and to demonstrate that the bundle does not induce predatory pricing or margin squeeze. OTE is not allowed to launch the new offer/bundle before EETT's approval. The obligation also concerns bundling with non-electronic communications services. However, when the regulated components of the bundle have already been approved separately, and there is no modification of the components, EETT considered in a recent dispute resolution case that the incumbent does not need to wait for prior approval before commercialisation.

Despite the uncertain economic climate, the incumbent, OTE, is slowly pursuing its VDSL deployment; at the end of 2014 around 34 % of its access lines were VDSL-enabled covering approximately 40 % of households either from the central office or from 3200 street cabinets. EETT issued a new piece of secondary legislation aiming at incentivising NGA networks¹². The alternative operators have not yet started massively investing in cabinets and take-up of NGA wholesale products is very low.

2. MARKET REGULATION¹³

2.1. Market analysis

In June 2014, EETT notified to the Commission draft remedies of cost accounting and accounting separation in wholesale markets¹⁴. EETT proposed to update the LRIC+/CCA methodology implementing two additional cost increments concerning commercial activities to better reflect the allocation of commercial costs for OTE. The Commission has not expressed any comment.

In July 2014, EETT notified its draft measure, based on Article 5 of the Access Directive, regarding the definition of terms and conditions for the provision of access and interconnection including access to APIs and EPGs¹⁵. EETT indicated that it had received several dispute resolution requests over the years regarding interconnection agreements, which it had resolved, without however having notified draft measures in these decisions under the Article 7 procedure. The notified regulation, containing *inter alia* general principles for providing access and interconnection, provisions on interconnection information, indications on the procedures to conclude/amend an interconnection agreement and on the content of an interconnection agreement, would apply to all operators in a symmetric way. The Commission reminded EETT that cost-oriented price caps, glide paths or interconnection rates determined in any way constitute regulatory obligations referred to in Article 16 of the Framework Directive and have an effect on trade between Member States. Therefore, these draft measures are required to be notified under Article 7(3) and be consulted with the national regulators. Lastly, the Commission recalled that under the Commission Recommendation on notifications, time

¹² Colocation and Facility Sharing Regulation, EETT 750/7, 19-02-2015.

¹³ In early 2014, EETT notified the third round of review of the markets for (i) call termination on individual public telephone networks provided at a fixed location in Greece, (ii) call origination on individual public telephone networks provided at a fixed location in Greece, and (iii) transit services in the public telephone network in Greece (Cases EL/2014/1562-1564) which were reported in last year's report.

¹⁴ Case EL/2014/1619.

¹⁵ Case EL/2014/1631.

limits and consultations¹⁶, price levels and methodologies used to calculate costs or prices are considered to be material changes to the nature or scope of a remedy that have an appreciable impact on the market and should therefore be notified under Article 7. In this regard, the Commission stressed that any material changes to obligations imposed on operators constitute an amendment of regulatory obligations referred to in Article 16(4) of the Framework Directive and could have an effect on trade between Member States.

EETT has issued at the end of 2014 a public consultation regarding a new NGA wholesale product proposed by OTE, Virtual Partial Unbundling (VPU) light, which is functionally equivalent to a naked VDSL product. The consultation was completed in December 2014.

Regarding future market reviews, EETT is expected to launch the public consultation for markets 1, of Recommendation 2007/879/EC and 3a & 3b of Recommendation 2014/710/EU during the first semester of 2015¹⁷. According to the current schedule, there will be a six-month delay for the notification of these markets, since the previous round of their analysis took place in 2011. Furthermore, the analysis of market 2 is scheduled to take place in the second half of 2015, three years after the previous round.

As a result of the reduction of the mobile termination rates back in 2012, the importance of on-net calls and of the ‘club effect’, which has given rise to a pending antitrust procedure against Cosmote for exclusionary practices, has become less relevant for the future¹⁸. However EETT has received no official withdrawal of the complaint and that underlines the importance of the case for both telecommunications’ companies (applicant and respondent) involved.

2.2. Access and interconnection

Two alternative operators have implemented IP interconnection, while most of the operators have implemented IP interconnection with operators in other countries. According to the regulatory obligations imposed on OTE in the context of the third round of market analysis, the incumbent has to submit its IP interconnection reference offer by April 2015. OTE has informed EETT that they will be ready to offer IP interconnection by the beginning of 2016. Alternative operators also informed EETT that they will be ready by then to establish an IP interconnection with OTE.

3. BROADBAND PLANS AND FINANCING

The national broadband plan is currently under preparation, following a public consultation with the relevant stakeholders. This plan would envisage on the one hand measures aiming to create an environment which encourages private investment in NGA

¹⁶ Commission Recommendation 2008/850/EC of 15 October 2008, OJ L 301, 12 November 2008, p. 23.

¹⁷ Markets for wholesale call termination on individual public telephone networks provided at a fixed location, wholesale local access provided at a fixed location, and wholesale central access provided at a fixed location for mass-market products, as defined in Commission Recommendation of 9 October 2014 on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services, OJ L 295/79, 11.10.2014.

¹⁸ The case is pending before EETT since March 2012 and has been delayed also due to changes in the Board.

networks, by reducing the cost of broadband deployment through the transposition of Directive 2014/61/EC on measures to reduce the cost of deploying high speed electronic communications networks, the simplification of administrative procedures, standard broadband demand-side take-up measures as well as coordination and targeting of investments, through infrastructure and service availability mapping. On the other hand it foresees the extension of the rural broadband project (of an additional EUR 120 million budget) in order to achieve 100 % population coverage with 30 Mbps, as well as measures aiming at ensuring the achievement of the 100 Mbps target, in the form of coupons for the connection of a building or an end-user.

Two broadband projects are currently being implemented: the ‘Broadband development in Greek rural areas’ (rural broadband) and the second phase of the Metropolitan Area Networks (MANs). The NRA will be involved in the rural broadband project by a) evaluating and approving the reference offers of the two contractors (OTE for two lots and Intrakat for one), b) proposing the principles of the cost model of the wholesale services that will be provided by the contractors and c) yearly cost accounting audits. The MANs are now connected to the public administration networks and are providing connectivity with 100 Mbps to 3 700 public buildings.

4. INSTITUTIONAL ISSUES

4.1. The National Regulatory Authority

The Hellenic Telecommunications and Postal Regulation Committee (EETT) is governed by Law 4070/2012. EETT is responsible for the main tasks assigned to national regulatory authorities under the regulatory framework for electronic communications in the EU. While the Ministry of Infrastructures, Transport and Networks exercises powers in particular in the area of general communications policy, and spectrum, it delegates spectrum management to EETT.

	2014
Personnel ¹⁹	176
Increase	-
Budget	€ 51.081.931.69
Increase	-13.55 %
Administrative charges ²⁰	€ 12.095.000.00
Administrative costs ²¹	€ 11.200.000.00

For a number of years, EETT has been facing significant constraints in human and financial resources. While the total number of personnel should have been 246, only 210 are currently employed and only 176 are in practice in service for the electronic communications sector²². Early 2015, EETT has been included in the national common procurement regulation, which in turn, resulted in increased bureaucracy leading to

¹⁹ Number of staff in full time equivalents (fte).

²⁰ In the sense of Art. 12 of the Authorisation Directive (Directive 2002/20/EC as amended by Directive 2009/140/EC).

²¹ Idem.

²² This is due to unpaid leaves, secondments and excludes the number of employees working in Postal Regulation.

delays in assigning contractors to aid EETT with various issues, e.g. cost control, determining the real cost of providing Universal Service etc.

At the end of each calendar year, EETT examines the total amount of administrative fees collected (including the administrative fees charged for the allocation of numbers and frequency bands), as well as its total expenditures. Depending on the difference between the total amount of administrative fees collected (which correspond to the compensating fees of the previous year) and the administrative expenses, appropriate adjustments are made with regard to the payment of the fees for the following year, allowing EETT to maintain a reserve fund equal to 30 % of the expenses foreseen in the following year's budget. However, the reserve fund is transferred to the state budget every three years. The Commission is monitoring the implementation of this mechanism.

In 2014, EETT issued overall 1511 dispute resolution decisions which concerned market regulation (2), equipment conformity (83), spectrum (1260), domain names (160) and numbering (2).

Overall, EETT adopted 82 decisions regarding regulated access, 32 decisions regarding spectrum and 2 decisions regarding numbering. It also adopted 41 decisions regarding equipment conformity. There were 29 challenged decisions, of which 20 appeals concerned infringements of *ex ante* sector-specific legislation and *ex post* competition rules, as well as decisions on reference offers.

The Court upheld 7 EETT decisions in 2014 and the average duration of the appeal proceedings is 2-3 years. In case 3830/2014, the Council of State confirmed the power of EETT to impose fees for the usage of radio frequencies, and more precisely, to request monetary compensation for spectrum usage. With regard to appeals against market reviews decisions, it appears that when the NRA has replaced its regulatory decision with a new decision, after a new round of market reviews pursuant to Article 16(6) of the Framework Directive, the Council of State summary dismisses the appeals, unless the appellants demonstrate interest in the issuing of a final decision.

4.2. Authorisation and licences

The licence holders in the 800 MHz and 2600 MHz spectrum bands have an obligation to provide broadband services with a minimum nominal down link rate.

All licences issued in the 800 MHz, 900 MHz, 1800 MHz, 3400-3800 MHz and 2600 MHz bands have been granted on a technology/service neutral basis. Currently, certain rights of use of spectrum in the 1800 MHz band are still restricted to the provision of 2G services and rights of use in the 2.1 GHz bands are limited to only IMT-2000. For both bands licence holders have the right to apply for an amendment of these spectrum rights to become 'technology neutral' under the provisions of Law 4070/2012.

EMF levels have been set at 70 % of the Council Recommendation nationwide. At hospitals, nursing homes and schools levels are set at 60 % of the Council Recommendation. No antenna masts are permitted to be installed on school rooftops.

Both selected operators to provide Mobile Satellite Services were granted an individual right to use frequency in January 2015.

The Mobile Telephony Subscribers fee imposed on all subscribers of such services is still in place in Greece²³.

5. SPECTRUM MANAGEMENT²⁴

Following the derogation granted by the Commission to Greece to allow the use of the 800 MHz band for electronic communications until 1 November 2014, EETT auctioned out the Digital Dividend in October 2014. 60 MHz in the 800 MHz band and 180 MHz in the 2600 MHz band have been awarded to three providers on technologically neutral conditions. Each one of the three MNOs acquired a lot of 2x5 MHz in the 800 MHz band in the first phase of the procedure, at the price of € 51 500 000 each. In the second phase of the procedure, the available spectrum was auctioned out in 10 rounds. Overall, the price paid for 15-year licences in these bands amounted to € 381 114 000.

There are currently no concrete plans in Greece for the 700 MHz band. However, the band is currently in use by DTT which remains the primary means of broadcasting and by the Greek Army. While the 800 MHz band has already been assigned to the mobile operators, the analogue switch-off has not been fully completed since there still remains some limited analogue broadcasting in areas with no DTT.

6. RIGHTS OF WAY AND ACCESS TO PASSIVE INFRASTRUCTURE

The competence for granting rights of way is with the local authorities (municipalities or regional authorities). The deadline is 30 days (60 in the case of private networks) and there is tacit approval once the deadline has passed. In practice however, providers always seek an explicit approval, which can take a lot of time, in order to maintain good relationships with the local authorities.

The Ministry has initiated an infrastructure mapping project, the establishing and management of which has been centralised in the Ministry of Infrastructures, Transport and Networks. While the project, based on Law 4053/2012 is currently limited only to electronic communications infrastructure, there are plans to extend it to also cover utility infrastructure once Directive 2014/61/EC is transposed into national law.

In 2014 an amendment of Law 4070/2012 came into force, which foresees the possibility to modify/upgrade the antennae of a licensed antenna structure by simply submitting a Declaration Form to EETT accompanied by the positive opinion of the Greek Atomic Energy Commission. Furthermore, a public consultation was concluded for the amendment of 'Femtocell regulation'. The new regulation, which is expected to be issued in Q1 2015, increases the maximum allowed transmitting power of a femtocell antenna to be installed without any licence or notification to any authority, to 500 mW eirp.

²³ The tax consists of a 12-20 % addition on the overall communications bill, depending on the consumption. VAT is then calculated on the overall amount with the tax, thus resulting in a double imposition.

²⁴ In early 2014, EETT assigned the UHF broadcasting spectrum to the DTT provider Digea, following an open competitive procedure, to which the assignee was the only candidate. Furthermore, it assigned 60 MHz of the available 300 MHz in the 3.4-3.8 GHz band to the incumbent, OTE, only participant to the auction. Both assignment procedures were reported in the previous report.

The average time needed to obtain the necessary permits for an antenna construction is estimated by EETT at 8.5 months. The MNOs complain however that the one-stop-shop for antenna permit granting is not in a position to address the considerable backlog of permit requests (including for updating existing sites) and flag that this delays valuable investments.

As of February 2015 access to physical telecoms infrastructure is mandated also on a symmetric basis, in addition to the SMP obligation imposed on ducts, sub-ducts, manholes and poles under market 4 of the 2007 Recommendation. In particular EETT updated its Collocation Regulation with the view to imposing facility sharing on a symmetric basis. This secondary legislation sets the rules and the procedures for infrastructure collocation and facility sharing.

7. CONSUMER ISSUES

7.1. The European emergency number 112

EETT is examining, together with the General Secretariat for Civil Protection and the electronic communication providers, measures to ensure the equivalence of access to the emergency services for disabled end-users.

Furthermore, under the Operational Programme ‘Digital Convergence’, the General Secretary of Civil Protection, implements the project ‘Modernisation and Upgrade of the operation of 112 PSAP’ which is going to be completed in October 2015. Among other new Services, this new upgraded 112 PSAP, is going to support the SMS and MMS receiving.

7.2. Number portability

Number portability²⁵		2013	2014
Fixed	Number of transactions	431,667	443,805
	% of total numbers	8.9%	9.3%
	Maximum wholesale price	0.6	0.6
	Maximum time under regulation (number of working days)	12	10
Mobile	Number of transactions	476,416	347,838
	% of total numbers	3.5%	2.7%
	Maximum wholesale price	9.6	0.6
	Maximum time under regulation (number of working days)	4	4

In November 2014, a Number Portability secondary legislation came into effect, decreasing the time for the examination of the portability requests by the donor and as a consequence the overall timing, as well as the cost per portability request. The regulation

²⁵ Source: figures provided by Greece to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe.

limits the acceptable grounds for rejection of the request by the donor, enhances the transparency of the portability process to the subscribers and sets a compensation process in case of porting delays or abusive porting. In early 2015 EETT imposed fines of 5486000 euros in total on the three MNOs for unjustified refusal of portability requests in years 2011, 2012 and 2013.

Furthermore, EETT issued a regulatory decision reducing the minimum monthly fees paid by the operators connected directly to the National Reference Database for Number Portability (NRDBP) from 500 to 300 euros. This decrease is expected to encourage smaller operators to connect directly to the NRDBP rather than using the necessary portability services offered by other operators connected to the NRDBP.

Lastly, EETT imposed an obligation on the mobile operators to block the IMEI (International Mobile Equipment Identity) of mobile devices reported as stolen. The relevant secondary legislation defines a specific procedure to be followed in order to block the IMEI of a stolen device in all domestic mobile networks.

7.3. Contractual obligations

A specific issue, flagged by both the Consumer Ombudsman and EKPIZO, concerned the application of Article 20(2) of the Universal Service Directive on the right of subscribers to withdraw from their contract without penalty upon notice of modification to the contractual conditions by their provider. Firstly, end-users of mobile postpaid services complained that the notice given by the providers was not adequate, in the sense that there was a lack of clear description of the modification made²⁶. Secondly, they complained that according to secondary legislation²⁷, the termination of the contract would not be without penalty, since they would have to pay back the part of the device subsidy price which had not yet been amortised or the discount they had benefited from the beginning of the contract. Indeed, the payment of the undepreciated subsidy, in any case of termination of a fixed-term contract, even on reaction to a unilateral modification of the contractual terms, is not considered a penalty²⁸.

7.4. Other consumer issues

In order to promote tariff transparency, EETT collects most of the domestic fixed and mobile tariffs (as well roaming tariffs), through the Tariff Observatory. In August 2014, it launched a project (co-funded by the Structural Funds and Cohesion Fund in NSRF 2007-2013) for the development of a price comparison website for fixed voice, fixed broadband, mobile voice, mobile broadband tariff plans and combinatory plans which is expected to be completed by October 2015. The tool will be most valued, since, according to information from the Consumer Ombudsman, a significant number of complaints and/or enquiries concern tariff transparency, in particular charges for consumption over the flat rate.

²⁶ The legal notice given to the end-users is one month prior to the changes and end users have another month to terminate the contract, without penalty.

²⁷ Paragraph 2.1.15(g) of EETT Decision No 676/41, Regulation on General Authorisation.

²⁸ Cf. Para. 2.1.15 of the ANNEX B of the Regulation of the General Authorisations (EETT Decision no 676/41/20-12-12).

With regard to monitoring control of consumption, subscribers have the right to select an amount (from a set of values available from their provider) above which the provider stops the provision of chargeable services.

According to data provided by the Consumer Ombudsman, there was an increase of the overall number of complaints in 2014, including in the electronic communications sector, which depicted a 35 % increase. With 1697 complaints in 2014, the sector represents 31.5 % of the overall number of complaints. The complaints were almost equally divided between the fixed (43.7 %) and the mobile (43.8 %) telephone services, while internet (4.9 %) and TV (4.4 %) services were far behind. The main types of complaints in the electronic communications sector in 2014 as classified by the harmonised methodology were 46.4 % regarding price, 36 % regarding invoicing, 10 % regarding product quality, 8.4 % regarding unfair commercial practices, 3.2 % regarding delivery of goods or provision of services, 2.4 % regarding switching provider²⁹. In addition, the Ombudsman reported also a number of complaints on inadvertent roaming, close to the frontier areas. The same trends were confirmed by EKPIZO, the consumer organisation which also operates a call centre in Greece.

The General Secretariat of Consumer Protection of the Ministry of Commerce received 1456 complaints in the sector of electronic communications of which 40 % concerned fixed services, 40 % mobile, 10 % Internet and 10 % other issues.

According to the data provided by EETT the main sources for consumer complaints in 2014 concerned: (a) number portability and more specifically the implementation of connection despite the exercise of the right of cancelling the portability request; (b) pricing and billing especially for data usage in mobile networks; (c) terms and conditions of contracts and (d) connection faults that last more than three days.

8. UNIVERSAL SERVICE

In March 2014, EETT initiated a call for expression of interest for the designation of a Universal Service (US) provider. According to secondary legislation, the provider can select the best way from a technological and economic point of view for the provision of the access services, provided that the minimum requirements for the quality of the provision of the universal service are met. Three providers (OTE, Wind and Forthnet) expressed interest for the provision of access to a fixed location, two (OTE and Newsphone Hellas) for the provision of directory enquiry services and directories in printed or electronic form and one for public payphones and other access points for public telephony services. In March 2015, EETT published the tender documents after a public consultation which took place in October 2014. The deadline for submitting tender offers is 4 May 2015.

A ministerial decision has been issued regarding the definition and specialisation of the criteria and the content of the reasonable request within the framework of the universal

²⁹ In 2013, the main types of complaints were: 47.8 % regarding price, 30.5 % regarding invoicing, 11.8 % regarding product quality, 10.2 % regarding unfair commercial practices, 4.4 % regarding delivery of goods or provision of services, 4.4 % regarding switching of provider. Number portability is not categorised separately, but is included either in invoicing or in provider switching. In addition to the formal complaints, the Ombudsman also received 2 279 enquiries regarding the electronic communications sector.

service. According to this decision, a request for connection to the national telephone network is considered reasonable if the connection point is located up to 200 metres from the telephone network, or if the cost for establishing the connection does not exceed 1900 euros, or if the US provider network is available at the connection point. The US provider is not obliged to establish a connection if another network is available in the area where the request is made and can serve the customer, provided that the cost for the provision of the telephone services is lower or equal to that of the US provider³⁰.

Regarding the request from the incumbent for compensation for the unfair burden of the provision of the US, there has been no further development since the EETT decision in April 2013, which had requested the incumbent to provide further information and to implement a number of recommendations. An EETT decision is expected in 2015.

9. NET NEUTRALITY

9.1. Legislative situation

Secondary legislation by EETT requires that fixed network and service providers report information about their traffic management practices. More specifically, they should report information about any restrictions on the use of services and applications by end-users, such as bandwidth caps, traffic shaping mechanisms, blocking of services or applications, the provision of guaranteed QoS, and the rates at which QoS is offered for different categories of services.

An amendment of the QoS regulation is foreseen, to extend the requirement for provision of information about any restrictions in the use of applications and services and provision of guaranteed QoS to mobile operators as well. (Currently they only report information upon request by EETT).

9.2. Quality of service

EETT has developed an internet monitoring tool called HYPERION³¹ using NDT and Glasnost tools based on the M-Lab platform, measuring basic broadband speed characteristics, such as download/upload time, jitter, latency, etc., as well as basic services traffic shaping (peer-to-peer applications, VOIP, Video-on Demand, etc.). The tool is based on user-initiated measurements via the web. The Glasnost tool enables a user to check whether traffic from certain applications is being rate-limited (i.e. throttled) or blocked. Applications include email, HTTP, SSH and Usenet traffic, P2P (BitTorrent, eMule, Gnutella) and Video-on-Demand (Flash video apps as in YouTube). According to the measurements so far, there has not been any evidence of throttling or blocking traffic. EETT is also in the process of developing a tool for measuring mobile internet performance and traffic shaping.

According to a recent BEREC survey, more than 20 % of Greek internet users experience a sudden reduced quality of their internet connection at least once a week or an entirely

³⁰ The comparison is made using the four baskets used by OECD for telephony services and an additional basket based on national practices according to the national use of telephony services.

³¹ <http://hyperiontest.gr>.

lost connection. On the other hand, 2/3 of internet users claim that they are satisfied with their ISP.

Hungary

1. MARKET DEVELOPMENTS

Broadband indicators (December 2014)¹	HU 2013	HU 2014	EU 2013	EU 2014
Fixed broadband coverage ²	94%	94%	97%	97%
NGA coverage ²	76%	80%	62%	68%
Fixed broadband take-up ²	66%	68%	69%	70%
Share of >30Mbps subscriptions ³	34%	40%	21%	26%
Share of >100Mbps subscriptions ³	4%	6%	5%	9%
Share of DSL in fixed broadband ³	33%	32%	73%	70%
Incumbent market share fixed broadband ⁴	43%	44%	42%	41%
HSPA Mobile broadband coverage ²	97%	98%	97%	97%
LTE Mobile broadband coverage ²	39%	73%	59%	79%
Mobile broadband penetration ⁵	27%	34%	64%	72%
Market share of leading mobile network operator ⁴	45%	45%	35%	35%

The Hungarian fixed telephony market continues to be characterised by the presence of so called local telephony operators, originally created in a geographic split-up of the former state monopoly area. In the fixed voice market, after a series of consolidations, there are now three companies (Magyar Telekom, Invitel and UPC) that remain leading operators each designated as SMP in their area, although their market shares for all types of calls by traffic volume have decreased in the past years, as these incumbents are facing increasing competitive pressure from cable operators.

In line with its all-IP migration plan announced in 2014, Magyar Telekom aims at a termination of the service on the legacy PSTN network by January 2017.

¹ Sources: coverage data — studies by IHS and VVA; penetration data — figures provided by Hungary to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe (except fixed broadband take-up, provided by Eurostat).

² % of households.

³ % of fixed broadband subscriptions.

⁴ % of subscriptions.

⁵ Subscriptions per 100 inhabitants.

The fixed broadband market in Hungary saw an increasing infrastructure based competition in the past few years posed primarily by the major cable operators Magyar Telekom, UPC and DIGI consolidating the cable market and upgrading their infrastructures to offer high speed internet, and also in certain cases to roll-out fibre networks. While the four largest cable operators' cumulative market share covers roughly 90% of cable subscribers, the remaining market is however highly fragmented with smaller operators.

The television offers continue to be a major driver of competition that also drives the incumbents to developing their fibre networks to improve bundle offers. An intensive infrastructure based competition is also reflected in the third highest market share of cable operators in the EU (47% as of January 2014), while the market share of the three local incumbents (Magyar Telekom, Invitel and UPC) in fixed broadband have been decreasing over the past years. At the same time, the market shares of alternative operators were also decreasing. In recent years, MVM Net (a subsidiary of the Hungarian Electricity Company) has been intensifying its efforts on various segments of the telecommunication market. It was the winning bidder for the 450 MHz tender, and it is offering wholesale services on the fixed broadband market. In 2015, MVM is planning to launch its wholesale services on 450 MHz, with particular focus on M2M communication.

With regard to M2M, a major driver behind growing M2M take has been the mandatory introduction of online cash registers, relying on a permanent roaming solution on the basis of Vodafone Malta.

For the past years, the Hungarian mobile market has shown a rather stable market structure, despite previous efforts for an entry into market of a fourth mobile operator. Following the outcome of the multiband auction in 2014, cable operator DIGI has acquired rights in the 1800 MHz range, (without any specific network deployment obligations) as the fourth mobile network operator, in addition to three existing mobile operators (the incumbent Magyar Telekom's subsidiary with 45% market share, and its competitors, Telenor and Vodafone with 31% and 24% as of October 2013). Throughout 2014 and 2015, two new MVNOs (UPC and Netfone) entered the mobile market alongside the existing services of Tesco Mobile, and branded resellers have started to provide services as well. In March 2015, UPC started to market its MVNO services relying on a shared medium platform.

In March 2015, Magyar Telekom and Telenor entered into a radio network sharing agreement in the 800 MHz range that will be valid until 2029. In addition, associated facilities are shared in a number of cases.

A 78% market share of mobile services of total voice traffic (in 2013) indicates a clear trend of mobile substitution. Against this background, the market share of the incumbent's mobile subsidiary stopped its decreasing trend of recent years, while third entrant Vodafone has gained some ground on the second operator Telenor. The bundled-offer penetration was at 43% as of July 2014 representing an 8 percentage point increase to the previous year, passing by the EU average of 41%. The double play and triple-play (or more) penetrations were of 34% and 10% respectively, representing a considerable increase compared with the previous year (26% and 9% as of July 2013).

In 2012, Hungary adopted restrictive rules on mobile payments mandating the use of the state-owned national mobile phone payment company for mobile payment clearings concerning certain state concession services (such as parking fees and road tolls). In November 2013, the Commission launched infringement proceedings against Hungary, and in July 2014 issued a reasoned opinion. The Commission upholds that Hungarian rules are not in line with EU rules on the freedom to provide services and the freedom of establishment.

In March 2014, the Hungarian government bought back Antenna Hungária, the national terrestrial radio and television programme broadcaster, from the French owner TDF. Following the completion of the digital switchover, Antenna Hungária announced the extension of its multiplexes to five national multiplexes, offering free-to-air public and commercial channels and commercial subscriptions. Antenna Hungária is also the operator of the nationwide digital microwave backbone network since its establishment.

2. MARKET REGULATION

2.1. Market analysis

In February 2015 the National Media and Infocommunications Authority (NMHH, see section 4 below) notified to the Commission its draft decision on market 2 (wholesale voice call termination on individual mobile networks). The NRA designated six SMP operators (three MNOs and three MVNOs), imposing obligations concerning access, non-discrimination, transparency, accounting separation (applied only to MNOs) and cost orientation (establishing MTRs on the basis of pure BU-LRIC model). In March 2015, the NRA adopted the remedies imposing a rate reduced to 1.71 HUF⁶, from the earlier 7.06 HUF rate.

Concerning ex-markets 4, 5 and 6 under the 2007 Recommendation on relevant markets, the three-year deadline expired in 2014. In May 2014 NMHH notified the to the Commission a reasoned proposed extension of this period up to the 31 December 2015, to which the Commission did not object.

2.2. Access and interconnection

In 2014, there were no issues reported regarding access obligations or IP interconnection. In line with its all-IP migration plan announced in 2014, Magyar Telekom aims to terminate service on the legacy PSTN network by January 2017. The Authority received the first IP TO IP Reference Interconnection Offer from Magyar Telekom in February 2015.

3. BROADBAND PLANS AND FINANCING

In February 2014, the Government adopted the National Infocommunication Strategy 2014-2020 in line with the Digital Agenda targets, also covering demand-side measures taking particular consideration of vulnerable citizens. The Digital Infrastructure Pillar of the National Infocommunication Strategy 2014-2020 includes broadband related

⁶ About 0.6 eurocents.

objectives and Hungary’s strategy for the next seven years. The broadband targets enshrined in the strategy are consistent with the broadband targets laid down by the Digital Agenda.

In February 2014, the Government of Hungary and Magyar Telekom signed a partnership agreement to make high speed broadband internet available to every home by 2018, to promote digital literacy and increase the competitiveness of businesses.

In November 2011, the Ministry published a draft call for projects to finance broadband backhaul network developments. Nevertheless, the call suffered delays including an ongoing investigation by OLAF, and accordingly, the projects related to the network development will not be completed by the end of 2014. It remains to be seen whether the financial incentives made available would be able to compensate the effects of levies established on providers, in particular the infrastructure tax introduced in 2013. In the new programming period 2014-2020, broadband development priorities focus on the development of new generation NGA networks, the wind-up of still remaining backhaul bottlenecks and the improvement of government network capacity and access of public institutions.

4. INSTITUTIONAL ISSUES

4.1. The National Regulatory Authority

	2014
Personnel ⁷	205 (as of 31 Dec 2014)
Increase	n.a.
Budget	€ 105.1 million
Increase	-7.4 %
Administrative charges ⁸	€ 7.4 million
Administrative costs ⁹	205 (as of 31 Dec 2014)

The National Media and Infocommunications Authority (NMHH) is a converged media and telecommunications regulator established following the integration of the NRA with the media authority (ORTT) in 2010. In the past three years, the Commission did not raise concerns related to the implementation of the independence requirements in Hungary, following a swift resolution of concerns of impartiality in 2011. In 2012, certain regulatory portfolios concerning spectrum and universal service were transferred to the NRA from the Ministry for National Development, to address concerns expressed by the Commission with regard to the structural separation of the Ministry from the planned new entrant mobile player owned *inter alia* by the State-owned MVM Hungarian Electricity Company.

The president of the NRA is appointed by the President of the Republic on the proposal of the Prime Minister. The mandate of the president lasts nine years and is no longer renewable. The president is vested with wide guarantees against dismissal, as the

⁷ Number of staff in full time equivalents (fte).

⁸ In the sense of Art. 12 of the Authorisation Directive (Directive 2002/20/EC as amended by Directive 2009/140/EC).

⁹ Idem.

president may be removed for reasons such as sickness or incapacity, or a final court judgment establishes a concrete misconduct. Subsequent to the decease of the president of the NMHH on 12 April 2013, the current president, Monika Karas was appointed in August 2013. Following the resignation of the vice-president responsible for electronic communication, in 2013, the position remained vacant throughout 2014, and no successor has been appointed since then.

Official decisions of the NRA passed in the first instance can be appealed to the President of NMHH, while the resolutions and decisions adopted by the President can only be challenged before a court. Judicial review of the NMHH's decisions falls within the exclusive competence of the Budapest Court of Administration and Labour¹⁰, that is subject to the revision of by the Budapest Metropolitan Court¹¹ while the Supreme Court¹² might be called to proceed to an extraordinary review of final court decisions (both of first and second instance).

In 2014 one case was brought before the NRA (concerning wholesale handling of ported numbers), in which the defendant party was subject to obligations. Following an appeal of the decision, the case is now subject to court review.

In 2014, the NRA did not issue any market resolutions. At the same time, 254 decisions were adopted in the area of supervision of electronic communications services (214 on the basis of individual complaints from subscribers, 40 ex officio), 57 decisions were issued in the area of market surveillance of RTTE and EMC apparatus, and 1050 decisions in the area of individual permits for the construction of electronic communications networks.

Concerning appeals, 71 decisions of first instance were challenged in administrative procedure, 59 decisions were upheld, 8 decisions were overturned and 1 decision was annulled. Regarding court review in 2014, 20 decisions were upheld, while 2 partly overturned or annulled, all for substantive reasons. In 4 cases the plaintiffs withdrew their claims or the case was dismissed.

4.2. Authorisation and licences

NMHH maintains an authenticated registry on electronic communications providers and their services, in accordance with the Electronic Communications Act. On the basis of a formal complaint in 2011, the Commission services investigated the implementation of the general authorisation scheme in Hungary with regard to requirements on establishment and guarantees. Following exchanges of information, the Commission launched infringement proceedings against Hungary on 25 October 2012, and as the concerns of the Commission had subsequently been addressed by the Hungarian Authorities, the Commission closed the infringement procedure in October 2013. In a related Hungarian court case, following a request for preliminary ruling, the European Court of Justice delivered a judgment on 30 April 2014¹³. The judgment confirmed the existing case-law that a service consisting in the supply of conditional access to a package of radio and television programmes retransmitted by satellite falls under the

¹⁰ Fővárosi Közigazgatási és Munkügyi Bíróság, FKMB.

¹¹ Fővárosi Törvényszék.

¹² Kúria.

¹³ Case C-475/12, UPC DTH S.á.r.l. v A Nemzeti Média- és Hírközlési Hatóság Elnökhelyettese.

Regulatory framework for electronic communications, and therefore the provider is subject to the authorities of the Member State in which the recipients of those services are resident. At the same time, Member States cannot require the provider to additionally establish itself in the residence country of the subscribers.

Since 2010 the Commission has investigated a number of cases relating to the assignment of frequencies for radio broadcasting, and their conformity with the regulatory framework for electronic communications. In March 2014 the Commission launched infringement proceedings against Hungary, concerning the award of temporary licences to radio stations for a period of up to three years to the first applicant for specific community needs or emergency situations. The Commission expressed concerns that the absence of an open procedure seems to be disproportionate to the objectives pursued, as the specific community needs could be observed in the course of an open procedure, and unexpected emergency situations should not warrant in advance the use of frequencies for up to three years. In September 2014 an amending act has repealed the provisions of the Media Act concerned by the infringement proceedings, and accordingly Hungary has addressed the issues raised. Consequently, the Commission closed the infringement proceeding in March 2015.

In 2014, a refarming took place in the 1800 MHz band before the final decision on result of the multiband auction was taken. As a result of the process, all MNOs now have contiguous blocks in the 1800 MHz band and have received technologically neutral licences.

After the implementation of the 2012/688/EU Decision, two operators applied for an amendment of their original UMTS licence. NMHH issued the new technology neutral licences in the first quarter of 2015.

Hungary operates a general authorisation system for MSS components to use frequency in the 2GHz band. Both selected operators (Solaris and Inmarsat) 'have notified the authorities of their intention to use this frequency'. Licences for CGC components are granted on an individual basis. None of the operators has applied for an authorisation yet. As regards 2GHz MSS operators, no enforcement procedure is ongoing in Hungary.

4.3. Taxation

The telecommunication sector is subject to extensive taxation and administrative burdens in Hungary. In October 2010, a special tax was introduced *inter alia* on the revenue from telecommunications services. On 18 May 2012 a new per minute/SMS telecommunication tax was adopted to gradually replace the special tax. In parallel, a third tax was introduced on public utility services (including telecommunication infrastructures) as of 1 January 2013, on the basis of the metric length of pipelines and cables.

In October 2014, the Hungarian government outlined its plans to introduce a tax on internet services (on the basis of consumption). The tax received extensive criticism both within the industry and from the general public. Finally the tax was not adopted and the Government announced a public consultation that will be carried out online.

5. SPECTRUM MANAGEMENT

The 2010 Media Act¹⁴ that also amended the Digital Switchover Act¹⁵ delayed the analogue switch-off in Hungary until 31 December 2014. Accordingly, Hungary filed a request for derogation from the application of Article 6(4) RSPD on 6 November 2012. Thus, a derogation was granted until 31 December 2013 for developing the authorisation process to allow the use of the 800 MHz band for electronic communications services, and until 30 June 2014 for switching off the broadcasting service in the 790-862 MHz frequency band. On 31 October 2013, the digital switchover was completed and analogue terrestrial broadcasting was terminated across Hungary. Nevertheless, Hungary failed to assign the 800 MHz band within the timeframe of the derogation. The planned multiband spectrum tender was ultimately published on 29 November 2013 and suffered several delays due to revision of the assignment rules. The tender procedure was finally launched on 22 May 2014, and covered technology neutral use of the bands 790-862 MHz, 2500-2690 MHz and parts of the bands that had not been licensed yet in the 880-915 MHz/925-960 MHz and 1710-1785 MHz/1805-1880 MHz bands. The results were published in September 2014: three existing MNOs (Magyar Telekom, Telenor and Vodafone) received licences in all three spectrum ranges, while new entrant DIGI was granted a licence in the 1800 MHz range.

In order to develop digital public services, the NMHH published a call for tender on 6 December 2013 for the unused blocks of the 450 MHz frequency band. MVM NET was chosen as the winning bidder of the tender on 12 March 2014, under the obligation to build and operate the national data transmission infrastructure including stand-by service communications and the deployment of urban traffic information systems. MVM NET shall start its wholesale services under this licence in 2015.

Concerning usage of the UHF band, the 700 MHz band is widely utilised for television broadcasting at present, and the licenses will expire in 2020. A strategy on this band shall be aligned to relevant international regulation and time schedule. Regarding the band 3400-3800 MHz, a public consultation was launched on 4 December 2014.

The provisions concerning service neutrality and tradability of different frequency bands are enshrined in NMHH Decree No 2/2013¹⁶. In 2015, the NMHH Decree on national frequency allocation and rules of usage of frequency bands has been published for consultation.

6. RIGHTS OF WAY AND ACCESS TO PASSIVE INFRASTRUCTURE

Access to passive telecom infrastructure in Hungary is by law (Section 90 EHT) mandated on an asymmetric basis and in certain cases on a symmetric basis. Symmetric access concerns in particular the network elements listed in Article 12 of the Framework Directive. Access to other utilities' infrastructure is not mandatorily provided. There is no separate regulation concerning access to publicly financed works. Nationwide coordination of civil infrastructure works is currently not in place. On a local level, local

¹⁴ Act CLXXXV of 2010 on media services and mass media.

¹⁵ Act LXXIV of 2007 on the rules of broadcasting and digital switchover.

¹⁶ NMHH Decree No 2/2013 (I.7.) on the Establishment of the rules of using frequency bands that may be used for civil purposes.

governments ensure a degree of coordination with regard to large-scale building projects concerning municipal property (such as renovation of city centres). A registry of permits for civil works is maintained by separate authorities responsible for permit issuance. The administrative time limit for the authority's proceedings is set in legal regulations at 45 days, which may be extended once by no more than 30 days if justified.

The current rules on passive infrastructure mapping are implemented by a government decree¹⁷ that established a uniform electronic public utility database from November 2013. The registry covers water utility services, separated rainwater drainage systems, public utility pipelines for supplying hydrocarbons, district heating and electric power as well as electronic telecommunications track-line structures. It does not, however, cover national defence, military, high-power electricity, high-pressure hydrocarbon, telecommunications backbone, electronic emergency, national security, traffic network safety pipes and cables and mobile telecommunications structures. This registry is designed to provide information *inter alia* on the availability of public utilities, the owners, operators and the operator's licensee of the public utility as well as their contact information. This information can be also used for taxation purposes by the tax authority, with particular regard to the infrastructure tax. The data provided by e-közmű shall be publicly available at no cost after user identification.

Planned investments in networks have to be communicated six months in advance and interest in co-deployment must be manifested no later than three months before the starting date of the investment. NGA wiring is not mandatory for new or old buildings. There are no specific rules concerning symmetric or asymmetric infrastructure sharing in relation to in-house or other infrastructure.

7. CONSUMER ISSUES

In Hungary, three authorities are competent to handle complaints relating to electronic communication services: the NRA, the Competition Authority (concerning unfair commercial practices affecting competition at a national level) and the Consumer Protection Authority (with regard to natural persons, or in the case of customer services). In June 2012 the NMHH signed a cooperation agreement with the Authority for Consumer Protection in the field of electronic communications and information society and with the Competition Authority in March 2013. In 2014, the Competition Authority conducted investigations in four cases of unfair commercial practices of telecom operators, and imposed fines in the value of HUF 366 million. It also conducted an *ex post* investigation of a merger approved in 2010. The Consumer Protection Authority publishes an annual report¹⁸ on their activities in the field of electronic communication.

7.1. The European emergency number 112

The single European emergency number is operated alongside three historical emergency numbers for police, medical emergencies and fire brigade. The NMHH Decree No 3/2012 (I. 24) regulates caller location accuracy, and requires a localisation precision for mobile networks an accuracy of 1/2/10 km radian circle (in populated/rarely populated/rural area) in at least 75 % of the cases.

¹⁷ Government Decree 324/2013 on the uniform electronic public utility registry.

¹⁸ http://www.nfh.hu/sites/default/files/elektronikus_hirkozles_2014.pdf.

The Integrated Emergency System — 112 (IES 112) project has been implemented by the end of 2014. The system consists of two public safety answering points where all emergency requests are concentrated, and which handle different means of requests (phone calls, eCalls, emails, SMS, MMS, Portal inputs and smartphone application).

7.2. Number portability

Number portability ¹⁹		2013	2014
Fixed	Number of transactions	21,051	26,134
	% of total numbers	0.7%	0.8%
	Maximum wholesale price	5.0	4.0
	Maximum time under regulation (number of working days)	1	1
Mobile	Number of transactions	71,708	101,116
	% of total numbers	0.6%	0.9%
	Maximum wholesale price	0.0	0.0
	Maximum time under regulation (number of working days)	1	1

The NMHH decree²⁰ effective as of 30 September 2012 transposed the number portability requirements of Article 30(4) USD setting out a single working day timeframe for number porting after concluding an agreement (between recipient and subscriber) by entering the data to the Central Reference Database (CRDB). In addition, service providers are obligated to automatically pay compensation if porting is denied without legitimate reasons, or the deadlines of the porting process are not met. The donor service provider may reject the application for number porting if the subscriber has unpaid bills more than 30 days overdue.

7.3. Contractual obligations

Fixed-term subscriber contracts must be limited to 24 months, although the possibility of entering into a subscriber contract for a fixed term of 12 months, or for an indeterminate duration must be offered in advance.

The operator's general contract terms and conditions may present the subscriber with the option to rescind the contract if a subscription contract for mobile internet access service is concluded. In this case, a minimum five-day period from the date the service is started must be provided for the subscriber to exercise his or her right to rescission. At the same time that the contract is agreed, the operator must inform the subscriber whether the right to rescind the contract is provided. In November 2012, the sector-specific consumer protections rules enshrined in the EHT were amended to stipulate that subscriber contracts can only be amended bilaterally in the same way as they were originally agreed, with the exception of tacit agreements.

¹⁹ Source: figures provided by Hungary to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe.

²⁰ NMHH Decree 2/2012 on the rules of number portability (I. 24.).

7.4. Other consumer issues

NMHH maintains an online database²¹ on mobile, fixed line, internet prices, cable television, multi-play (2-play/3-play) and roaming related applications in collaboration with operators. NMHH, is also developing a project for broadband quality of service, with particular view to bandwidth and linking quality measurement which also incorporates the development of Tantusz.

In addition to commercial websites comparing operators' offers, the Broadband Foundation runs a website²² specialised in broadband internet services. In 2014, the NRA started publishing metrics called 'Average Monthly Cost' (AMC)²³ pertaining to fixed and mobile phone plans (both post-paid and prepaid) to facilitate comparison of tariffs. The database²⁴ includes information on public plans based on data contained in the general contract terms of service providers. Market players also introduced comparative websites²⁵.

8. UNIVERSAL SERVICE

The scope of universal service in Hungary includes functional internet connection, fixed-line telephony services, directory enquiry services and directories, as well as public payphones and other public voice telephony access points. Functional internet connection within the scope of universal service is defined as a guaranteed download speed of least 30 kbps and a guaranteed upload speed of at least 8 kbps.

The designation process is laid down in the implementing NMHH Decree No 13/2013 (IX. 25.). Based on the offers and expertise of the interested undertakings, the NRA designates undertakings in part or all of the national territory to provide an element or different elements of universal service. If there is no valid offer the NRA will designate the service provider identified as having significant market power on the retail market access to the public telephone network at a fixed location for residential and non-residential customers. The decree also establishes a compensation regime to providers of universal service from the budget of the NRA once the net cost of the universal service obligation is determined and unfair burden is established. In 2014, none of the universal service provider realised unfair burden.

The designation procedure started in November 2013 and was completed in 2014. Accordingly, the NRA signed a public contract with the single applicant Magyar Telekom as regards the connection to the public telephone network at a fixed location on its previous concession territory. Furthermore Invitel and UPC Hungary have been designated US providers as SMPs on their geographic retail markets. Regarding a telephone directory enquiry service, the NRA signed a public contract with Invitel. In the absence of offers, Magyar Telekom, Invitel and UPC have been designated for the provision of public pay phones and the directory information service in their relevant geographic areas.

²¹ www.tantusz.nmhh.hu.

²² <http://www.szelessavkereso.hu>.

²³ AMC calculates the total monthly cost of an average Hungarian residential user in different phone plans based on SMP operators' traffic data.

²⁴ http://nmhh.hu/tart/index/1583/Telefonkoltsegek_osszehasonlitasa.

²⁵ <http://www.nettarifa.hu>, <http://www.telko.hu>.

9. NET NEUTRALITY

9.1. Legislative situation

General provisions on net neutrality were transposed in Hungary into the Act on Electronic Communication and NMHH decrees (6/2011 and 13/2011), declaring the rights of consumers to have access to and distribute information and media content, as well as setting out formal requirements of specifying minimum quality standards and other relevant terms of subscriber contracts (including standard terms and conditions and individual contracts).

The current self-regulatory regime is based on a 2012 NMHH recommendation proposing that major ISPs engage themselves in introducing a unified, comparative service description table consisting of the main parameters and traffic management procedures applied in their internet access packages. These transparency tables are available on the websites of ISPs.

Certain providers introduced internet access packages containing differentiated treatment for OTT services. In order to assess the handling of OTT services, the NRA launched a public consultation in December 2014 with the participation of internet users, OTT and internet service providers. The findings and conclusions will be presented in the second quarter of 2015.

In February 2015, Prime Minister's Office inaugurated a website²⁶ launching the public consultation on the internet, announced at the time of the withdrawal of the internet tax. The consultation has a wider scope than the tax. In February 2015 questions shall be proposed for the future consultation in three main areas: consumer protection, net neutrality, and competition and innovation.

9.2. Quality of service

NMHH is responsible for quality of service implementation and the monitoring of the quality of service in the sector, and specific aspects such as internet speed and other parameters.

Quality requirements, accessibility rates and terms of technical assistance shall be included in subscriber contracts. Quality of service is tested, supervised and reported to the NMHH by service providers according to an annual monitoring plan. Operators are obliged to pay compensation if they fail the specified quality requirements or repair deadlines.

Each Hungarian mobile network operator applies traffic management tools in order to block VoIP voice and video messages in certain offers.

²⁶ <https://www.internetkon.hu/>.

Ireland

1. MARKET DEVELOPMENTS

Broadband indicators (December 2014)¹	IE 2013	IE 2014	EU 2013	EU 2014
Fixed broadband coverage ²	96%	96%	97%	97%
NGA coverage ²	54%	71%	62%	68%
Fixed broadband take-up ²	60%	62%	69%	70%
Share of >30Mbps subscriptions ³	35%	45%	21%	26%
Share of >100Mbps subscriptions ³	7%	20%	5%	9%
Share of DSL in fixed broadband ³	64%	65%	73%	70%
Incumbent market share fixed broadband ⁴	38%	37%	42%	41%
HSPA Mobile broadband coverage ²	95%	95%	97%	97%
LTE Mobile broadband coverage ²	35%	87%	59%	79%
Mobile broadband penetration ⁵	67%	82%	64%	72%
Market share of leading mobile network operator ⁴	39%	38%	35%	35%

While 2014 has seen a continuation of the gradual recovery in the overall level of economic activity, revenues in the Irish telecommunications market have declined, down 3.3 % in Q3 2014 compared with Q3 2013, leading to decreasing ARPU as the take-up of telecommunications services increased during the same period. Investments in the sector were in the area of € 549 million in 2013.

Consolidation in the mobile market took place during the reporting period where Hutchison Ireland ('3') acquired O2 Ireland following approval by the European Commission in May 2014 conditional upon a commitments package submitted by H3GI⁶. As a result of the transaction, two MVNOs are expected to enter the market,

¹ Sources: coverage data — studies by IHS and VVA; penetration data — figures provided by Ireland to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe (except fixed broadband take-up, provided by Eurostat).

² % of households.

³ % of fixed broadband subscriptions.

⁴ % of subscriptions.

⁵ Subscriptions per 100 inhabitants.

⁶ Case M.6992.

leading to 9 MVNOs in total. The merger resulted in a rebalancing of market shares between mobile operators — Vodafone being the biggest with 38 %, followed by ‘3’ with 36.3 % and Meteor with 18.5 % (the remaining share being split among MVNOs). There were over 5.76 million mobile subscriptions in Ireland at the end of September 2014, with a penetration rate of 124.9 %. 9 % of all subscribers actively use 4G networks, while 23 % of subscribers only use 2G networks.

Usage of fixed telephony for voice calls followed a downward trend (traffic down 7.1 % in Q3 2014 compared with Q3 2013). In contrast, voice traffic over mobile increased by 2.3 % in 2014. At the same time, a significant decrease in the volumes of traditional SMS was mostly due to the proliferation of messaging services like WhatsApp. Broadband take-up has continued to increase, reaching 1.69 million broadband subscribers in Q3 2014 (up 1.1 % compared with the same quarter in 2013). The ‘race’ to extend the NGA footprint was active with several players launching or advancing in the area — Eircom’s NGA roll-out plan, UPC continuing to grow its presence in large urban areas and the ESB/Vodafone joint venture using the existing electricity distribution network.

2. MARKET REGULATION

2.1. Market analysis

As a general observation, frustration among market actors is noted with regard to duration and delays of market analysis, despite efforts by the Commission for Communications Regulation (ComReg, see section 4.1 below). However, at the same time, ComReg has noted difficulties in obtaining the information necessary for market reviews, resulting in one instance of statutory enforcement.

In relation to retail access markets, ComReg’s decision of August 2014 on retail access to the public telephone network at a fixed location for residential and non-residential customers defined three separate national retail markets: Market 1a Standalone lower level voice access (LLVA), Market 1b Bundled lower level voice access and Market 1c Higher level voice access (HLVA). In light of designating Eircom as having SMP in each market, the appropriateness of imposing on Eircom a number of regulatory obligations to address its position of SMP was considered. For all three markets wholesale remedies were imposed in the form of an obligation to provide Wholesale Line Rental (WLR) and CPS. It was considered that the imposition of wholesale remedies would not suffice by itself over the period of the review to constrain Eircom’s behaviour on the retail markets, this is relevant in particular for Market 1a Standalone LLVA. Furthermore, as the WLR prices are set on the basis of a retail-minus methodology, absent regulation, Eircom would have the ability and incentive to increase its retail standalone LLVA prices and also the charges for WLR (hence, limiting the impact of its competitors at the retail level). Therefore, ComReg found it appropriate to maintain the current Retail Price Cap. The obligation not to unreasonably bundle was also maintained for all three markets which encompasses an obligation not to engage in tying practices for market 1a Standalone LLVA (no pure bundling), and for market 1b Bundled LLVA and market 1c HLVA, an obligation to comply with measures aimed at avoiding a margin squeeze as well as transparency and cost accounting.

Unless and until effective and functional wholesale regulation is set out (notably the regulation of the (upstream) wholesale call origination market (Market 2) and the appropriate regime in respect of the regulation of retail/wholesale margins to be applied at the wholesale level), ComReg did not consider Eircom sufficiently constrained in the provision of fixed voice access.

In December 2014 ComReg set costs of capital for both the mobile telecommunications and broadcasting sectors, determining the weighted average cost of capital (WACC) to be applied in the Irish markets 2 to 7 of the 2007 Recommendation and the markets related to broadcasting transmission (Broadcasting Market A — Wholesale access to national terrestrial broadcast transmission services, and Broadcasting Market B — Wholesale access to DTT multiplexing services).

In 2011, Eircom was designated with SMP in the wholesale broadband access (WBA) market (ex-market 5) in ComReg Decision D06/118. WBA is a non-physical or virtual wholesale input used in the provision of a range of retail products which are used by consumers for broadband internet access. After consultation in 2014 under case number IE/2014/1571, ComReg adopted a decision in 2014 imposing a national cost-orientation obligation with regard to Eircom's current generation bitstream services. In addition, retail-minus price control was withdrawn and instead a retail margin squeeze test was imposed. The application of both pricing obligations differs somewhat between more urban and less urbanised areas. ComReg previously defined a LEA ('Larger Exchange Area') which comprises those exchange areas where cable infrastructure is present, where there is LLU-based competition, and prospectively, the potential for the roll-out of NGA. Areas outside the LEA are those areas which have less / no infrastructure based competition and where the prospect of competition in the wholesale broadband market is unlikely. At the time the Commission invited ComReg to reconsider the imposition of cost-oriented prices based on HCA at this stage, and incorporate the pricing review with respect to the core network in its ongoing access network review. Furthermore and in order to increase transparency the Commission called on ComReg to set out clearly in the finally adopted measure how the proposed differentiated cost-orientation obligation and margin squeeze tests will interact with the WBA price.

On market 2 (ex-market 7) ComReg imposed a glide path based on a benchmark of those NRAs that have adopted cost modelled pure-LRIC MTRs. The decision to impose a cost-orientation obligation, as well as the entirety of the separate decision regarding the detailed specification of the cost-orientation obligation, was appealed by Vodafone in 2013 to the High Court and the court ruled in part in favour of Vodafone. The High Court found that ComReg's use of benchmarking was *ultra vires*. The High Court did not rule on the legality of the pure-LRIC costing methodology and left it open for this matter to be determined once ComReg had completed its MTR cost model. There is an ongoing appeal process of the High Court's decision, seeking a reference to the CJEU.

2.2. Access and interconnection

ComReg did not register any IP interconnection agreements or disputes in 2014. Fixed networks have not migrated towards IP interconnection architecture so far. Access obligations for interconnection, including IP interconnection, are technologically agnostic. Pricing methodology is pure-LRIC.

3. BROADBAND PLANS AND FINANCING

The National Broadband Plan (NBP) was published in 2012 committing inter alia to the availability of high speed broadband to all citizens and businesses. This was to be achieved through a mix of commercial investment and targeted State intervention in those areas where there was clear evidence of market failure. Since publication of the NBP the roll-out of high speed services has accelerated beyond the commitments made in 2012. However, most of this investment is taking place in urban areas with many of the more thinly-populated rural areas seeing no investment or improvements in the availability of quality broadband services. This is exacerbating the urban-rural digital divide.

This situation will continue unless there is a public intervention to ensure the provision of services in rural areas. The Irish Government has therefore agreed on the need to pursue a more ambitious, longer term, future proofed state-led intervention than that set out in the 2012 NBP, with the objective of dealing conclusively with the connectivity challenge in rural areas.

The commercial telecommunications sector is currently investing approximately €2.5 billion in network upgrades and at least 1.6 million of the 2.3 million addresses in Ireland are expected to have access to commercial high speed broadband services over in the coming years. For the remaining areas, a detailed mapping has been performed and the DCENR is planning a tender process, which is expected to start in autumn 2015. It is expected that at least two telecommunications companies will bid to deliver direct fibre connectivity to approximately 500 000 homes and businesses in the most rural parts of Ireland. These significant investments represent a step-change in the quality of broadband services available and would provide universal NGA coverage to the country.

Eircom's e-fibre programme (FTTC) has increased from 1.4 million to 1.6 million premises. In addition, the company has announced plans to provide fibre-to-the-home in 66 towns across the country by November 2017. A joint venture between ESB and Vodafone Ireland has been established in order to provide fibre-to-the-home services on a wholesale basis initially to 50 towns (Phase 1) nationwide with the intention of rolling out a second Phase. All mobile operators are continuing to invest in the deployment of 4G services and in the enhancement of 3G services. These enhanced mobile data services are now expected to extend beyond the footprint of the 70-85 % population coverage which was envisaged by industry when the NBP was agreed.

Despite these commercial investments, there is still a significant geographical area containing over 750 000 premises in which industry has advised they do not plan to invest in high speed broadband services due to the challenging business case they present, hence the requirement for state intervention. The intervention strategy by the state is based on: (1) a consultation issued in June 2014 on the definition of high speed broadband which elicited responses from a range of stakeholders with widely differing views on the technical criteria that should be applied by the State; (2) meetings with numerous stakeholders, including industry representatives, rural community groups, public representatives, public bodies and government departments; (3) detailed cost models developed to underpin a cost-benefit analysis (4) a comprehensive national NGA mapping exercise carried out with industry.

In November 2014, following an eighteen-month engagement with industry, a detailed national high speed coverage map was published (www.broadband.gov.ie). A subsequent public consultation on this map closed on 12 February 2015. The map is available at the above link, showing the areas that will have access to commercial high speed broadband services by the end of 2016 and the area for state intervention.

In parallel with the NBP, the National Digital Strategy (NDS) was launched in 2013. The NDS is aimed at demand-side stimulation measures leveraging more value from infrastructure investments, focusing on driving digital adoption in three key areas: enterprise (getting 2000 small and micro enterprises trading online), citizens (getting 280 000 citizens online) and education (enhancing teaching and learning through more use of digital resources). The Trading Online Voucher Scheme was rolled out nationally under the Government's 2014 Action Plan for Jobs. The scheme offers a financial incentive of up to € 2500 to small and micro businesses to develop their online trading capability. In terms of citizen engagement, the NDS recognises the importance of enabling everyone to realise the full social and economic potential of the digital world. The Benefit Programme is designed to drive citizen engagement, using a competitive process to select community and voluntary organisations to receive grants for providing digital skills training such as email, social media, video calling, use of online public services, eBanking, TV playback and other applications.

The NDS encourage the use of digital in education following the completion in 2014 of the roll-out of 100 mbps broadband connectivity to every second level school in Ireland. The Department of Communications, in partnership with the Department of Education and Skills developed and ran a pilot outreach programme to inspire second level schools to do more with digital in the classroom that received a positive feedback.

4. INSTITUTIONAL ISSUES

4.1. The National Regulatory Authority

The Commission for Communications Regulation (ComReg) has been established by the Communications Regulation Act, No 20 of 2002. ComReg is responsible for the main tasks assigned to national regulatory authorities under the regulatory framework for electronic communications in the EU.

	2014
Personnel ⁷	104
Increase	-6 %
Budget	€ 23 Million
Increase	18 %
Administrative charges ⁸	€ 14 Million
Administrative costs ⁹	€ 22.5 Million

⁷ Number of staff in full time equivalents (fte).

⁸ In the sense of Art. 12 of the Authorisation Directive (Directive 2002/20/EC as amended by Directive 2009/140/EC).

⁹ Idem.

** ComReg is self-financing — a portion of resources comes from administrative charges (Art 12 Auth. Dir) with the balance from fees for rights of use*

In 2014, there were no concerns raised over the implementation of the independence requirements in Ireland. ComReg is led by up to three Commissioners who are appointed by open competition on such terms and conditions for a period of three to five years, with the possibility of reappointment for a single second term. A Commissioner may be removed by the Minister only if ill-health prevents the effective performance of his/her duties, or for stated misbehaviour. In such an event the legislation requires the Minister to provide a statement of the reasons for any such removal to both Houses of Parliament.

A party can appeal a ComReg regulatory decision to the High Court within 28 days of the decision. An aggrieved party can also challenge a ComReg decision (including regulatory and competition decisions) by way of judicial review. Such a challenge would be heard and determined by the High Court. All regulatory appeals lodged since the inception of the Commercial list of the High Court have been transferred, following application, to the Commercial list. The Commercial list employs more rigorous case management resulting in more efficient case disposal in terms of costs and time, with earlier trial dates, sometimes within months of an appeal. Appeals on the merits and judicial review are heard by the High Court.

There were three appeals in 2014 to the High Court: first by Vodafone Ireland against ComReg decisions regarding mobile termination rates; second by Eircom against determination of Universal Service fund application for 2009-2010; third by Eircom against designation of Eircom as USP.

There was one judicial review submitted to the High Court in 2014. Vodafone sought an order of *mandamus* requiring ComReg to review the allocation of mobile communications radio spectrum following the merger of Hutchinson 3G Ireland and Telefonica Ireland. A trial date has been set for mid-2015.

4.2. Authorisation and licences

In September 2014, ComReg issued a consultation outlining its preliminary proposals for an award process for spectrum rights of use in the 2.6 GHz band with the possible inclusion of the 700 MHz, 1.4, 2.3 and 3.6 GHz bands. The 2.6 GHz band is currently licensed in Ireland for the provision of pay television services using a Microwave Multipoint Distribution System (MMDS). On 27 March 2013 ComReg extended all MMDS licences in force in the 2.6 GHz band for a period of 2 years from 18 April 2014 until 18 April 2016 whereupon all licences would expire in full. Accordingly, new rights of use for the entire band will be available for release from this date. The responses to the consultation have been received and the process is ongoing.

5. SPECTRUM MANAGEMENT

In terms of overall national spectrum policy, the 2012 National Broadband Plan set a commitment to review and update national spectrum policy. The Department of Communications, Energy and Natural Resources carried out a public consultation mid-2014 seeking views on potential priority areas in terms of spectrum policy. An important

element of this review is to ensure that the legal and regulatory environment supports continued investment in mobile telecommunication infrastructure, which is dependent on access to radio spectrum. It is expected that this review will be completed in the first half of 2015.

The 700 MHz band is currently allocated to the broadcasting service and a number of DTT transmitters have been assigned frequencies in this band. The future use of the 700MHz band is under active consideration as part of the overall policy review. At a policy level, the Department established a broadcast stakeholders group in 2014 to discuss the future of the UHF spectrum band from the broadcast perspective and produced a report ‘UHF Spectrum Policy Review Group Report’. This report and its recommendation are a key input to the overall consideration of the national spectrum policy.

In February 2014 ComReg published a separate consultation on the management and use of the UHF radio frequency band in Ireland (470-690 MHz), which includes the 700 MHz band, wherein ComReg raised the possibility of making the 700 MHz band available for other uses including wireless broadband services. ComReg published its response to that consultation in August 2014 in which it committed to conduct an analysis of the likely costs and benefits (CBA) (economic, social and cultural) of RTÉ and Programme Making and Special Events users migrating out of the 700MHz band and into the remainder of the UHF band. External experts were engaged to assist ComReg in carrying out the CBA, followed by a consultation on the results.

In relation to the 3.6 GHz band, ComReg highlighted important issues with the Fixed Wireless Access Local Area (FWALA) licensing scheme operating in the band in since 2010. It was noted that the existing licensing regime is not in line with the EU-level harmonised use of this band and operators have not taken up the option of acquiring licences that facilitate mobile operation. Accordingly, the existing FWALA licences in the band would not be renewed or extended beyond 31 July 2017 in order to provide for the introduction of a new regulatory framework fully in line with the applicable requirements.

6. RIGHTS OF WAY AND ACCESS TO PASSIVE INFRASTRUCTURE

As no requests were received, the NRA did not impose symmetric regulation of infrastructure sharing under Article 12 of the Framework Directive or obligations on cross-utility access obligation.

The procedures for granting rights of way are simple, but can be burdensome in terms of interaction and finding an agreement with landlords/local authorities. The National Broadband Plan addresses these issues through a dedicated work stream on the removal of infrastructure barriers and market actors are cooperating closely with national authorities to find appropriate solutions to simplify permits and planning requirements at national and local levels.

In terms of procedures for permits, the construction of electronic communications lines including the associated ducting is generally undertaken along public roads. As a general rule the construction of underground cables is subject to a road opening permit from the

appropriate road authority and the construction of overhead lines and over ground infrastructure (e.g. cabinets) is subject to a licence from the appropriate planning authority. The ESB (Electronic Communications Networks) Act 2014, among other things, allowed the electricity network operator to make its network available to any ECN provider.

Work has commenced on identifying the appropriate type of legislative act and its content to transpose and implement Directive 2014/61/UE on measures to reduce the cost of high speed broadband deployment.

7. CONSUMER ISSUES

7.1. The European emergency number 112

National legislation¹⁰ requires ComReg in consultation with the Minister to lay down criteria pertaining to the accuracy and reliability of the caller location information provided, also providing that caller location information (CLI) must be supplied by undertakings and that this obligation shall apply to all calls to the single European emergency call number 112 and any national emergency call number that may be specified by the NRA. There have been no changes in the past year. In October 2014 ComReg issued a consultation document to seek the views of undertakings and other stakeholders on all matters relevant to the setting of criteria for accuracy and reliability of emergency caller location information. A specific website (www.112.ie) is operated ComReg to assist in the promotion of 112 to Irish consumers.

For mobile services, the current solution used to supply ECLI to the Emergency Call Answering Service (ECAS) in Ireland is based on Cell ID. The cell identity supplied with the emergency call is looked up in the mobile location information conversion database which is used to convert that cell identity into a geographic location. The 112 Short Message Service has been available on a permanent basis since 2012. The service allows deaf, hard of hearing and speech-impaired people in Ireland to send an SMS to the ECAS where it is passed to An Garda Síochána, the ambulance service, the fire service, or the Irish Coastguard. The ECAS operator acts as a relay between the texter and the required emergency service. Transmission is very fast, full details are available on the website: http://www.112.ie/112_SMS_Service/142

7.2. Number portability

Number portability ¹¹		2013	2014
Fixed	Number of transactions	42,842	70,457
	% of total numbers	3.4%	5.6%
	Maximum wholesale price	4.0	4.0

¹⁰ S.I. No 337 of 2011: European Communities (Electronic Communications Networks And Services) (Universal Service And Users Rights) Regulations 2011.

¹¹ Source: figures provided by Ireland to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe.

	Maximum time under regulation (number of working days)	0	0
Mobile	Number of transactions	316,930	301,855
	% of total numbers	6.5%	6.2%
	Maximum wholesale price	2.1	2.1
	Maximum time under regulation (number of working days)	1	1

To ensure porting of numbers within prescribed deadlines, the NRA has taken an active role in ensuring compliance with the requirements. Industry has agreed a number portability process which facilitates the porting of numbers between network infrastructures. Mobile number portability has been provided within one working day since 2003, and the provision of fixed number portability within one day has been provided since 2011.

7.3. Contractual obligations

Article 30(6) of the Universal Service Directive has been transposed into Irish legislation and ComReg investigates compliance in respect of consumer contracts on an ongoing basis, issuing in 2014 an opinion of non-compliance towards one market actor. ComReg also monitors an obligation, set out in its 2012 Decision specifying the ‘Format of notifications’: a requirement for all service providers to provide a set of minimum details of any notification of proposed modifications to contractual conditions.

7.4. Other consumer issues

The NRA issued a decision (D04/14) in respect of measures to ensure equivalence in access to, and choice for, disabled end-users of telecommunications services which placed obligations on all ECS providers. The measures, to be complied with by the end of May 2015, are: (a) accessible complaint procedures, (b) accessible top-ups for prepaid mobile users, (c) accessible directory enquiries, (d) accessible billing, (e) accessible facilities to test terminal equipment or appropriate returns policy, (f) accessible information, (g) facility for disabled subscribers to register requirement.

8. UNIVERSAL SERVICE

Following a public consultation and in accordance with US designation in June 2014 (until December 2015) the incumbent’s obligations as Universal Service Provider (USP) to provide access at a fixed location include: (a) provision of access at a fixed location; (b) quality of service, (c) provision of measures to assist consumers to control their expenditure, (d) Geographically Averaged Pricing. This designation decision (D10/14) was appealed by the incumbent and the out-of-court settlement agreement is ongoing in order to resolve the matter. In July 2014, following public consultation, the incumbent was designated as the USP for the following services: (a) provision of public pay phones until June 2018, (b) provision of a printed telephone directory until June 2018; (c) provision of services to consumers with disabilities including text relay service for one year. Revision of the need for USO in Ireland is under consideration while at the same time the Irish Government is working on the National Broadband Plan.

In January 2014 ComReg issued a decision in respect of the USP's application for universal service funding for the provision of USO for 2009-2010. The net cost of EUR 5.1 million was not considered as an unfair burden. USP appealed the decision, but later withdrew the appeal.

9. NET NEUTRALITY

9.1. Legislative situation

There is no national law in place specifically providing for net neutrality. There are no self-regulatory initiatives in relation to net neutrality, with the regulator's focus remaining on transparency of contracts and usage policies.

9.2. Quality of service

Although there are no measures under Article 22 of the USD specified by ComReg, the NRA has taken a number of pilot initiatives to address consumer concerns with respect to speeds across different platforms.

Italy

1. MARKET DEVELOPMENTS

Broadband indicators (December 2014)¹	IT 2013	IT 2014	EU 2013	EU 2014
Fixed broadband coverage ²	99%	99%	97%	97%
NGA coverage ²	21%	36%	62%	68%
Fixed broadband take-up ²	50%	51%	69%	70%
Share of >30Mbps subscriptions ³	1%	4%	21%	26%
Share of >100Mbps subscriptions ³	0%	0%	5%	9%
Share of DSL in fixed broadband ³	95%	92%	73%	70%
Incumbent market share fixed broadband ⁴	49%	48%	42%	41%
HSPA Mobile broadband coverage ²	97%	98%	97%	97%
LTE Mobile broadband coverage ²	39%	77%	59%	79%
Mobile broadband penetration ⁵	62%	71%	64%	72%
Market share of leading mobile network operator ⁴	32%	32%	35%	35%

In 2014 Italy's electronic communications sector was still suffering as a result of the weak general economic cycle, which has affected a structurally-weak demand in terms of consumer expenditure as well as of weak broadband penetration. However, some first signs of recovery may be identified with regard to the deployment and take-up of LTE services as well as to the increasing interest in the deployment of fixed NGA by the incumbent and some alternative providers.

The number of fixed lines continues to decrease, in particular those of the incumbent, Telecom Italia (-1.9pp)⁶. This is mainly due to the trend towards fixed-to-mobile

¹ Sources: coverage data — studies by IHS and VVA; penetration data — figures provided by Italy to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe (except fixed broadband take-up, provided by Eurostat).

² % of households.

³ % of fixed broadband subscriptions.

⁴ % of subscriptions.

⁵ Subscriptions per 100 inhabitants.

⁶ Source: AGCOM Observatory.

substitutability for voice services, since on the other hand fixed broadband access penetration continues to increase, although always at a slow pace. While still trailing behind in terms of NGA coverage and penetration (last but one in EU), compared with the stagnation of previous years the take-up of NGA subscriptions is slowly increasing. Broadband access is still predominantly based on the incumbents' copper network (92 % of fixed access), but fixed wireless access broadband connections are growing (+104 000 lines⁷) as well as access provided over FTTH/B networks, mainly that of Metroweb, an independent dark fibre wholesale operator currently active mainly in Milan, (doubled, to 4 %). Within this context, therefore, a trend towards upgrades in quality of fixed lines, in particular with VDSL, is visible. First of all, from a wholesale perspective, a fast increase of FTTC VULA lines has been recently experienced according to the data of the NRA (30.000 activated lines at the beginning of 2015) and during 2014 the number of new SLU lines was increasing more than that of new LLU lines, which on the contrary remained substantially stable⁸. From a retail point of view, the proportion of broadband subscriptions featuring more than 10Mbps increased by 5pp (reaching 20 %, although still well below the EU average of 70 %⁹). This is in line with the implementation of the investment plans of the incumbent and of two alternative operators, Fastweb and Vodafone, based on the deployment of FTTC in the most profitable urban areas. The deployment of FTTC currently concerns 30 % of active lines and is expected to reach 60 % of population by 2016. In this regard a joint sector inquiry on the broadband market completed in November 2014 by the NRA and the competition authority highlighted the increased infrastructural competition prompted by the operators' (partially) overlapping investment plans but also pointed out that the bottlenecks remain in the terminating segment from the cabinet to the end-users and these will be relevant for further technological upgrades of FTTC-based access lines (such as vectoring).

For mobile markets, the very high customer base is gradually decreasing, but the generally positive trend for mobile broadband penetration experienced in the past is continuing. The main focus of competition, once predominantly based on prices¹⁰, is now gradually moving towards greater diversification of offers. All MNOs have launched their LTE offers and extended their coverage, while two operators have also started to provide LTE-Advanced (4G+) trials, reaching speeds of up to 225Mbps, and Vodafone launched a voice-over-LTE service in 2014. Operators adopted different marketing strategies, with LTE being offered within the existing tariff plans or as an additional pay-up service. Also with regard to MVNOs a tendency towards specialisation and diversification is emerging. Although none of them are offering LTE, their cumulated market share increased by 1.8pp reaching 7.1 %¹¹ market share mainly thanks to the emergence of a new multi-country full MVNO specialised in international calls, which rapidly became Italy's second MVNO. At the same time another full MVNO, decided to abandon its retail activities as from 2015 and specialise instead as a wholesale aggregator for ESPs and M2M services. In general, the trend towards less concentration in the market continued, although there are talks of mergers involving MNOs. Another notable trend experienced in 2014 in the wholesale segment, was the tendency towards

⁷ Source: COCOM July 2014.

⁸ Source: AGCOM Observatory.

⁹ Source: COCOM July 2014.

¹⁰ With a reduction of 17.8 % in mobile telecom services in the 2011-2014 period. Source: AGCOM Observatory.

¹¹ Source: AGCOM Observatory.

externalisation of physical infrastructures into separate tower companies by Telecom Italia and Wind, in order to optimise their assets.

At retail level, a sharp decrease of SMS traffic has been experienced during 2014 [-41 %¹²]. The incumbent expects to revamp its IPTV offer with a non-exclusive distribution agreement with the major pay tv operator as from 2015, while mobile operators are enriching their mobile offers with music streaming services.

2. MARKET REGULATION

2.1. Market analysis

AGCOM is striving to catch up with the three-yearly review of market analysis for several relevant markets. Hence in the past three years some relevant regulatory decisions, including on prices, were taken in the context of the annual approval of the reference offers of the incumbent and often with retroactive effect, with negative effects in terms of legal certainty and regulatory stability. These delays and, more generally, the fragmentation of market regulatory decisions are also due to the need to reassess, following judicial annulments, remedies concerning fixed access (for the years 2009 and 2010-2012) and MTRs (for the years 2008-09 and 2013-2014), and in view of some substantial changes occurred in the market scenario, in particular for fixed broadband access, such as the speed-up of FTTC private investment plans, as well as the ultra-broadband strategic plan adopted by the Italian Government.

The need to increase transparency and coherence in the notification of remedies was also consistently raised by the Commission in the context of all notifications submitted by AGCOM during the reference period.

In particular, with regard to the definition of prices for Wholesale Line Rental, NGA physical access services and bitstream/VULA NGA services¹³, AGCOM confirmed for 2013 the previous 2012 bottom-up Current Cost Accounting pricing methodology for WLR, as well as a Fully Distributed Costing (FDC) bottom-up methodology, already applied in 2012, for the NGA physical and bitstream access services, pending the adoption of the announced BU-LRIC model; accordingly, AGCOM also applied the same FDC methodology for the separate notification of 2013 prices of end-to-end services based on the same NGA physical access services;¹⁴ furthermore in all these cases the cost of capital (WACC) has been defined in accordance with the decision adopted in 2013, following the Commission recommendation on the need to cooperate with BEREC and NRAs with a view to develop a consistent approach in this regard. Finally, with regard to the reassessment of 2010-2012 prices for ex-markets 1, 4 and 5 of the 2007 Recommendation, AGCOM modified its assessment with a view to take into account the findings of the national court annulling the previous decision, in particular in view of the new estimate of corrective and maintenance costs.

The Commission noted in these cases that the 2012 prices referring to NGA products included in ex-markets 4 and 5 of the 2007 Recommendation were not notified, although

¹² Source: AGCOM Observatory, IIIQ 2014.

¹³ Cases IT/2014/1585-1586-1587.

¹⁴ Case IT/2014/1650.

the same remedies applied. Moreover, the fragmentation of regulatory decisions (with separate notifications for remedies on the one hand and for prices and pricing methodology on the other) may not allow the Commission to carry out a comprehensive assessment of the proportionality and appropriateness of the remedies adopted. The Commission therefore urged AGCOM to notify its forthcoming market analysis in its entirety, while also reiterating the need to avoid regulatory decisions with retroactive effects. Similarly, with regard to the retroactive determination of prices for 2013 for terminating segments of leased lines based on a revision of the price calculation method adopted in 2011-2012, as well as for the remedies concerning FTR, origination and transit services (in particular in view of IP migration) the Commission noted the need to proceed to a full market analysis as soon as possible¹⁵. Finally, with regard to WLR costing methodology, the Commission asked to better clarify the approach used to calculate the commercialisation costs; in this latter regard AGCOM, in view of Commission's comments, included in the final decision the information on the adopted costing methodology in order to increase transparency of the approach adopted.

In view of Commission's comments, national public consultations have been launched (or extended) for all markets with a view to complete them by mid-2015 and some measures are considered in order to reduce the impacts of retroactivity of regulatory decisions¹⁶, although AGCOM still needs to complete the third round of market analysis for all relevant markets, apart for mobile termination rates. Moreover, in 2014 AGCOM adopted two regulatory decisions modifying the asymmetric MTR rates of one operator for two months in 2008 and extending the extent of asymmetry of MTR for one operator in 2013, following the execution of judgments of the national courts, but has not notified them to the Commission.

Taking into account the focus on FTTC deployment by both the incumbent and the alternative operators, moreover, in the context of the above-mentioned regulatory decisions, AGCOM has also adopted technical specifications for the implementation of SMP access obligations to the street cabinets. The aim is to set up a coordinated procedure for the deployment of cabinets of the alternative operators in the context of the upgrade of the incumbent's network, although the capacity of the incumbent to cope with massive cabinet deployments needs to be tested. Moreover, AGCOM stated that Telecom Italia and other operators using sub-loop LLU have to define and share MOV (Multi-Operator Vectoring) technical requirements (architecture, hardware equipment and software, maintenance procedures, etc.) and is therefore coordinating a technical committee among stakeholders and manufacturers, in order to gather information concerning the technical feasibility, technological constraints, elements design, planning and implementation times. A specific working group will define, in addition, the interoperability specifications of such MOV DSLAMs in order to allow interoperability between MOV DSLAMs of different vendors,

¹⁵ See cases IT/2014/1788 and IT/2015/1719, 1720, 1721.

¹⁶ In order to address the issue of retroactivity of obligations introduced with the approval of reference offers, AGCOM is proposing, within the ongoing market analysis process for wholesale access markets, to ask the incumbent to publish reference offers not later than the end of June of the year X-1 (being X the year of application of relevant prices). Moreover, the draft decision submitted to national consultation concerning the third round of market analysis for terminating segment and access to fixed network (LLU, WLR and bitstream) proposes to set 2014 prices equal to 2013 cost-oriented prices in order to minimise the impact of retroactive decisions.

Finally, the issue of quality and pricing of some ancillary elements and services is becoming increasingly relevant, in particular in the context of the upgrade of the current networks, and is also the object of an ongoing investigation by the competition authority where commitments offered by the incumbents are being tested by the market.

2.2. Access and interconnection

The migration towards IP interconnection is being implemented by the operators and may require approximately 8-10 months in the case of a big operator. Fixed termination rates are however already based on IP interconnection. In order to facilitate the migration process, AGCOM defined a set of rules encompassing a gradual reduction of the price for TDM interconnection kits in case the migration process is carried out by Telecom Italia slower than expected¹⁷. Completion of the IP migration is expected by 2016.

3. BROADBAND PLANS AND FINANCING

Taking into account the significant delays in the deployment of NGA (in particular fixed) networks in Italy, the role of broadband plans and the efficient use of public funding is crucial. Under the existing 2012 framework scheme, several tenders for public funding have been carried out so far: 8 concerning broadband deployment for overall EUR 204 million and 7 for ultra-broadband deployment for overall EUR 372 million. In particular 2007-2013 ESIF funds have been used for the Southern Regions and works should be completed by the end of 2015. In practice gap funding model has mostly been applied so far, usually on the basis of regional lots, resulting mainly (except in one small lot) in the extension of the incumbent's existing network, with access to be granted in line with the provision set in the relevant state aid decisions.

For the current financing period (2014-2020), in February 2015 the Government has adopted a new overall Digital Strategy covering both investments in services and networks, which could use EUR 2.4 billion from ESIF¹⁸ (ERDF and EAFRD) and national co-financing (for a total of EUR 6 billion of public funds). The plan foresees also a potential private investment of up to EUR 2 billion and the possibility to leverage these investments with the use of a range of financial instruments being made available through the EFSI plan¹⁹.

On the new broadband investment plan specifically, the new strategy aims at ensuring 100 % 30Mbps and 85 % 100Mbps coverage (in order to achieve at least 50 % take-up). The plan is based on a detailed mapping of the Italian territory in sub-municipal areas (approx. 94 000) grouped into 4 clusters, depending on their population density and taking into account the different infrastructural and socioeconomic features. The more attractive metropolitan and large urban areas may benefit from general tax exemption

¹⁷ Telecom Italia has to migrate at least two Gateway Areas (in case of requests by several alternative operators) for each operating unit per time and the process requires an average of 2.5 months per Gateway Area (overall 4 for nationwide operators). In practice the monthly overall fee that the alternative operator pays to Telecom Italia for TDM interconnection kits is gradually reduced according to the agreed migration plan, until it reaches zero at the date of the scheduled completion of the migration, regardless of the technical migration process.

¹⁸ Indicative amount.

¹⁹ Investments for ICT infrastructure under the Ultra broadband National Plan have been included among those submitted by the Commission and the Member States in the so-called Juncker Plan.

measures for investments and financial facilities to upgrade the network to 100Mbps, whereas smaller and less urbanised areas will also have access to a varying degree of state aid (depending mostly on population density) to upgrade to 100Mbps, and the least attractive rural areas will mostly require the building of fully public networks to provide at least 30Mbps. The intensity and modalities of public intervention will also depend on the outcome of local tenders based on the most advantageous offer in terms of price, coverage, time and quality, with different models of investment (indicatively direct public ownership, PPP and gap funding, with demand aggregation playing a facilitation role for all models in certain areas — e.g. industrial areas). All models will need to ensure a wholesale access to the physical infrastructure built with public funds, in accordance with the indications of the NRA and the provisions of the relevant state aid decisions (depending on the instrument used). AGCOM will also monitor the effective speed and will track ultra-broadband access availability and subscriptions at 100Mbps. The plan will require further implementing acts, including capacity building and monitoring the competitive impact of the measures, as well as the adoption of supporting measures for the reduction of broadband deployment costs and it is expected to be notified under State aid rules.

4. INSTITUTIONAL ISSUES

4.1. The National Regulatory Authority

The *Autorità per le Garanzie nelle Comunicazioni* (AGCOM) has been established by Law 249/97 and is responsible for several tasks assigned under the regulatory framework for electronic communications, while others are entrusted with the *Ministero per lo Sviluppo Economico* (MiSE). There are still some areas where coordination could be improved, in view of the shared competences between AGCOM and MiSE (in particular with regard to information on registered operators and spectrum management and planning, in particular in broadcasting).

Both AGCOM and MiSE levy administrative charges to finance their own respective tasks. In a reasoned opinion the Commission has raised concerns on the lack of transparency and reporting obligations with regard to the levies and costs of the Ministry as well as with regard to the criteria for the calculation of general authorisation charges for SMEs, in contrast with Article 12 of the Authorisation Directive. In order to address these concerns, the draft 2014 European Law bill currently passing through Parliament includes amendments to the relevant provisions of the Electronic Communications Code. As for the charges levied by AGCOM, despite the clarifications provided in this specific regard by the European Court of Justice already in 2013²⁰, there are problems of interpretation at national level in defining the scope of activities that could be financed by this charge, with possible impacts on NRA's ability to perform its institutional tasks.

	2014²¹
--	--------------------------

²⁰ Case C-228/12.

²¹ The figures refer only to AGCOM, in the absence of a transparency mechanism for those collected by MiSE.

Personnel ²²	371
Increase	1 %
Budget	€ 71 977 Million
Increase	-13.45 %
Administrative charges ²³	€ 44 857 Million
Administrative costs ²⁴	€ 40 320 Million

One year after the adoption of the law on the allocation of powers for the enforcement of general consumer protection rules (a task entrusted to the competition authority, AGCM) and of sector-specific regulation applied by AGCOM²⁵, the concerned authorities have not yet established a Memorandum of Understanding on the coordination of their respective competences. In the absence of this coordination, there is a concrete risk of duplication and/or inconsistencies of enforcement as well as of regulatory interventions due to the unclear text of the legislation.

In addition to *ex ante* regulation, AGCOM has also dealt with 24 disputes between operators concerning terms and conditions for MTRs, collection rates towards NGA non-geographic numbers, additional de-activation charges for wholesale access services and costs for corrective maintenance.

In 2014 54 appeals were filed against 30 AGCOM decisions concerning spectrum (15), market regulation (12), administrative charges (10), consumer protection (6), dispute resolution (6), number portability (3) and Universal Service (2). The final decision of a case at the level of the Supreme Administrative Court can take more than two years and it can cause significant delays in market regulation when the appeal is upheld, as these rulings may require reassessment of the case.

4.2. Authorisation and licences

In response to the Commission's investigation into the general authorisation regime for the provision of electronic communications services to vessels, a modification of the concerned provisions by means of the draft 2014 European law 2014 bill currently passing through Parliament is foreseen.

Regarding frequency bands already assigned to mobile operators, in order to ensure the most efficient use of the spectrum in line with consumers' interest, rights of use in the 800MHz band have been linked to a list of specific municipalities in digital divide areas to be gradually covered with LTE within 10 years. Operators are on schedule to comply with these coverage plans. Moreover, in case of spectrum locally unused after a certain period in the 800, 1800, 2600 and 3500MHz bands (for the last this period already expired), the assignees have to satisfy access requests for this spectrum, with the possibility to activate dispute resolution in case of lack of agreement.

²² Number of staff in full time equivalents (fte).

²³ In the sense of Art. 12 of the Authorisation Directive (Directive 2002/20/EC as amended by Directive 2009/140/EC).

²⁴ *Idem*.

²⁵ Legislative Decree No 21 of 21 February 2014.

While EMF limits are among the most stringent in Europe and below the level recommended at EU level²⁶, in 2014 the guidelines for measuring them have been implemented only partially, with regard to the timing; indications on the mitigation factors of buildings and outdoor surfaces, on the contrary, still need to be adopted. This may create litigation at local level in the context of deployment and upgrade of current wireless networks.

In 2014, some rights of use for national broadcasting transmissions were assigned for the first time via an open competitive procedure. However this came well after the analogue switch-off and with a significant delay compared with the original commitments provided by the Italian authorities in the context of a long-standing infringement concerning the rules applicable to the assignment of rights of use for digital broadcasting to existing operators. In view of the large amount of broadcasting transmission capacity available in the market (as reported by AGCOM in its market survey), only one out of three lots has been assigned to a new transmission operator, also active in content provision. While the two main operators are still fully vertically integrated (and still also controlling their own tower activities, for which EI Tower has launched a bid in 2015 for its competitor RaiWay), a new operator resulting from the merger of two former broadcasters is active in the market as a pure independent wholesale provider. Finally, the system of fees for the use of broadcasting spectrum, previously based on both content and transmission activities, has been modified following implementing rules adopted by AGCOM in 2014. However, it is not yet clear what its final application will be in view of the need to adopt final executive measures by MiSE and also taking into account the different impact of the new system on the broadcasting market in general and on the revenues for the State budget.

On rights of use of numbers, AGCOM's revision of the numbering plan clarified that all authorised electronic communications providers may be assignees of relevant numbering resources.

Finally, the second selected MSS operator, Inmarsat, was authorised in 2014, alongside Solaris which has been authorised since 2012. In both cases no evidence of a breach of the conditions has been ascertained.

5. SPECTRUM MANAGEMENT

Among the bands included in the RSPP — and apart from the spectrum subject to limitations due to use by the Ministry of Defence — only the assignment procedure for the 3.6-38 GHz band is not completed and part of the band still needs to be refarmed to ensure coexistence of current users and holders of nationwide or macro-regional licences. The process has been open for one and half year after the last public consultation, which showed a still limited market demand; taking also into account the recent approval by MiSE of a refarming strategy for existing users and the new technical specifications for this band adopted in 2014²⁷, the assignment process is expected to move forward soon,

²⁶ Council Recommendation of 12 July 1999.

²⁷ See Commission Implementing Decision [2014/276/EU](#) amending the Decision [2008/411/EC](#) on the harmonisation of the 3400-3800 MHz frequency band for terrestrial systems capable of providing electronic communications services in the Community.

since further delay may hinder the efficient use of spectrum in view of an increasing demand for this band.

The 2015 Stability Law has mandated the launch of the assignment procedure for the 1.5 GHz band (L-band) for wireless broadband services and has already earmarked the minimum amount of expected revenues. In view of this provision AGCOM has launched a public consultation on the assignment rules.

Three mobile operators have been authorised to partially reform the 900 and 1800MHz bands in 2014, taking into account the need to ensure continuity of GSM services. At the same time, following the requests by Telecom Italia and Vodafone pursuant to a 2007 law and a public consultation, their GSM licences in the 900 and 1800MHz bands, which were due to expire in January 2015, were extended until June 2018, in line with the expiry date of the third GSM licence held by Wind.

Italy is currently involved in complex negotiations to address serious interference problems with neighbouring countries. To achieve this, it urgently needs to complete the refarming of local television broadcasting and carry out the general planning of its analogue radio broadcasting spectrum. On the refarming of local television, the 2015 Stability Law has extended the deadline and increased resources for the compensation mechanism for local broadcasters, expected to be completed by 30 April 2015 but not yet finished. In view of the large number of channels affected, the Stability Law has also provided for additional internationally coordinated channels in order to facilitate the switch-off of interfering frequencies in the short term; AGCOM is accordingly re-planning these resources for this purpose. The Commission services, concerned for the delay, are closely monitoring the implementation of the law. This activity should also take into account the more general spectrum policy principles laid down in Law 44/2012, ensuring timely conformity with developments in EU and international spectrum policy. The implementation of the provisions of a further law aiming to ensure the early commercialisation of DVB-T2 enabled devices has been postponed in order to clarify the appropriate standards in the light of future spectrum policy. With regard to radio broadcasting, the process of planning the Medium Wave band will be started as soon as an enabling provision currently under discussion in the context of the draft 2014 European Law bill will be adopted. However, this is not yet the case for analogue FM transmissions. This lack of planning is causing increasingly serious international interference problems, under scrutiny in the context of the Radio Spectrum Policy Group.

6. RIGHTS OF WAY AND ACCESS TO PASSIVE INFRASTRUCTURE

In 2014 Decree-Law 133/14 adopted provisions aiming at facilitating the deployment of electronic communications networks. These included the eliminating of individual permit granting procedures for small towers below 1.5 metres and the transposition of some parts of Directive 2014/61/EU concerning in particular the equipment of new and renovated buildings with in-house high speed infrastructure. MiSE has also been empowered to establish a register of all underground infrastructures, currently limited to electronic communications. The remaining provisions of the Directive will be transposed following the approval of the draft 2014 European Law bill, which contains the principles for the transposition to be applied by the Government. This will add to the existing symmetrical obligations for in-house infrastructure laid down by AGCOM as well as the asymmetrical mapping obligations applicable to the incumbent's infrastructure.

7. CONSUMER ISSUES

7.1. The European emergency number 112

Technical discussions with the operators on the use of GPS data for caller location showed that operators, who are responsible for transmitting this information to PSAPs, currently do not have access to the relevant data. While management of PSAPs is a regional competence, some Regions are considering the establishment of common PSAPs for all emergency services (in addition to the one already active in Lombardy).

7.2. Number portability

Number portability ²⁸		2013	2014
Fixed	Number of transactions	985,590	1,047,451
	% of total numbers	4.6%	5.0%
	Maximum wholesale price	4.3	4.3
	Maximum time under regulation (number of working days)	8	8
Mobile	Number of transactions	13,181,000	8,104,904
	% of total numbers	13.5%	8.5%
	Maximum wholesale price	0.0	0.0
	Maximum time under regulation (number of working days)	1	1

While the overall number of mobile portability requests remained the highest in the Union, a significant reduction has been experienced in 2014. With regard to fixed portability, AGCOM carried out an extensive monitoring of problems affecting the process in 2014 and has launched a review of the technical rules to address them.

7.3. Contractual obligations

Rules on minimum contractual obligations are aligned with the rules in the Universal Service Directive. However, when terminating a contract the user may be required to pay deactivation charges sustained by the operator even after expiry of the contractual period. AGCOM regularly monitors these charges. A recent bill discussed in the Parliament aims to regulate contractual penalties for terminating electronic communications contracts. However the current text of the bill does not clarify the relationship with existing deactivation costs.

7.4. Other consumer issues

AGCOM is holding a consultation on detailed rules and formats for the billing documents applicable to consumers and other end-users, in order to increase transparency

²⁸ Source: figures provided by Italy to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe.

of information, including for disabled end-users (audio bill), unrequested services, pricing, quality of service.

The main sources of complaints reported to AGCOM, to local dispute settlement bodies (CORECOM) and some consumer associations have been switching difficulties for fixed services, non-requested activation/deactivation of services for mobile and fixed services and lack of quality for mobile data connections. On this last issue AGCOM is considering extending the certification features of the existing *Misurainternet* tool to cover wireless connections, although this may encounter technical problems. The total amount of complaints received in 2014 by CORECOM and AGCOM is 93.837 (86.670 applications received by CORECOM for a mandatory conciliation attempt; 5.198 applications received by CORECOM for a final decision on a dispute; 1969 applications received by AGCOM for a final decision on a dispute). In addition to these redressing procedures, moreover, it is also possible to refer disservices to mediation bodies set up by operators on the basis of framework agreement with the consumers' association.

AGCOM is currently discussing implementing rules laying down sector-specific legislative provisions on unilateral amendments to the contractual conditions, while at the same time AGCM has recently sanctioned some practices concerning these amendments by telecom operators as unfair commercial practices. Similarly, sanctions for unfair commercial practices have been adopted with regard to the billing conditions of telecom operators in case of value added services, while at the same time AGCOM is consulting on rules regulating these aspects.

8. UNIVERSAL SERVICE

The intense litigation affecting decisions on the methodology for the calculation of the net cost for the provision of the Universal service has led to a new annulment of the decision adopted by AGCOM applicable as from 2004. This is creating a huge delay in its determination, with pending appeals on this annulment. The Ministry launched a procedure to review the US obligations at the end of 2014 and therefore the designation procedure launched by AGCOM in 2014 has been suspended.

9. NET NEUTRALITY

9.1. Legislative situation

Italy has not introduced any legislation on Net Neutrality.

9.2. Quality of service

AGCOM is responsible for quality of service implementation and monitoring including internet speed and other parameters. It regularly monitors the commercial and technical practices of the operators in this regard and assesses the KPIs for fixed and mobile internet access services.

Currently operators implement a wide range of commercial practices with different options, including packages without VoIP services or including specific additional OTT services at special rates. Also, traffic management is adopted in order to optimise the use of networks, in particular for mobile. Traffic shaping and traffic prioritising are used by some operators in case of congestion. Upon AGCOM request, operators published

additional information set on their websites about traffic management techniques applied to their own tariff plans/options.

Latvia

1. MARKET DEVELOPMENTS

Broadband indicators (December 2014)¹	LV 2013	LV 2014	EU 2013	EU 2014
Fixed broadband coverage ²	92%	92%	97%	97%
NGA coverage ²	89%	90%	62%	68%
Fixed broadband take-up ²	62%	63%	69%	70%
Share of >30Mbps subscriptions ³	51%	54%	21%	26%
Share of >100Mbps subscriptions ³	36%	40%	5%	9%
Share of DSL in fixed broadband ³	30%	29%	73%	70%
Incumbent market share fixed broadband ⁴	56%	58%	42%	41%
HSPA Mobile broadband coverage ²	99%	99%	97%	97%
LTE Mobile broadband coverage ²	28%	65%	59%	79%
Mobile broadband penetration ⁵	64%	63%	64%	72%
Market share of leading mobile network operator ⁴	42%	43%	35%	35%

The fixed incumbent operator Lattelecom maintained its dominance in the fixed voice market. In the fixed broadband market Lattelecom's nationwide market share is about 58 %; it is however much larger in rural areas and smaller in Riga. Baltcom, the historical cable operator which merged in 2013 with the second cable operator IZZI, is the main competitor of Lattelecom on the fixed broadband market. Besides, a large number of private small-sized fixed networks offer fixed broadband connections, in particular in Riga. Some of them are regionally based, some are only small block-based operators serving a couple of buildings.

Over the last years, large FTTH deployment by Lattelecom has followed the fibre roll-out (usually FTTB) of alternative providers. In January 2015, NGA connections⁶

¹ Sources: coverage data — studies by IHS and VVA; penetration data — figures provided by Latvia to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe (except fixed broadband take-up, provided by Eurostat).

² % of households.

³ % of fixed broadband subscriptions.

⁴ % of subscriptions.

⁵ Subscriptions per 100 inhabitants.

represented 66 % of total fixed broadband connections in Latvia, i.e. more than twice the EU average (31 %). By July 2014, 82.2 % of Lattelecom's NGA connections were FTTH, 2.7 % were FTTB, and 15.1 % VDSL. In contrast, 91 % of the alternative operators' NGA connections were FTTB, 8 % were DOCSIS 3.0, and 1 % FTTH. Now that Lattelecom has passed about 70 % of homes with fibre, GPON investment by Lattelecom has become much lower than over the past five years.

Lattelecom has deployed a WiFi network free of charge, advertisement-driven. The network has 4000 spots in the country, and in Riga the network has one spot for 700 people on average.

In 2014 LTE mobile services were offered by two operators, LMT and Tele2, on the 1800 MHz and 2.6 GHz bands. However, during that year and the first semester of 2015, these two operators and Bite prepared the ground for operating LTE networks on the 800 MHz band as of 1 July 2015, the end date of the 800 MHz derogation obtained by Latvia due to coordination obligations with Russia. Large parts of the three operators' respective LTE networks are meant to be operational by that date, so that LTE coverage is expected to increase substantially and rapidly in the second half of 2015.

The mobile market in Latvia is therefore dominated by 4G development and the focus on data. Since December 2014 LMT and Tele2 have been offering unlimited, flat rate data plans. The prepaid market has been substantially declining for several years (-12 % per year) with the development of flat rate/unlimited postpaid offers for voice and SMS. MVNOs have basically disappeared from the market in Latvia.

Following the positive developments observed on Latvian mobile operators' revenue during the second half of 2014, 2015 is expected to mark the end of the decreasing revenue trend of mobile operators in Latvia since 2007, thanks to sharp increases in data consumption in particular. The mobile voice market has been relatively stable despite OTT substitutes.

Latvia does not have any quadruple-play operator. Lattelecom, does not provide mobile services. TeliaSonera, which owns 49 % in Lattelecom and 49 % in mobile incumbent LMT⁷ changed its governance structure, with no distinction mobile/fixed but country units. It has merged its fixed and mobile affiliates in Estonia. It is however not clear whether this will happen in Latvia, which would mean a merger between the fixed and mobile incumbents. Mobile and fixed services are directly competing in Latvia, and 4G is clearly an alternative to fixed broadband in rural areas. In rural areas, there is now major competition pressure on Lattelecom's DSL segment from mobile operators and nationwide LMT is the second broadband provider, following Lattelecom.

In the fixed market, on 1 July 2014, the take-up of triple-play bundles 'telephony-broadband-pay TV' (about 114.500 subscribers, which is about 23 % of all fixed broadband subscribers⁸) was ahead of double play bundles 'telephony — broadband' (about 81.200 subscribers, 16 %) and double play 'broadband-pay TV' (about 73.200 subscribers, 15 %). Double play bundles 'telephony-pay TV' are much less often taken up (about 8000 subscribers). In the mobile market, the number of telephony-broadband

⁶ FTTH, FTTB, VDSL and Cable DOCSIS 3.0.

⁷ And Lattelecom owns 29 % of LMT.

⁸ 499 780 fixed broadband subscribers in Latvia on 1 July 2014.

bundle subscribers is about 684.800, while there are 5.602.485 active mobile voice telephony numbers.

2. MARKET REGULATION

2.1. Market analysis

In 2014 the Latvian National Regulatory Authority (SPRK, see section 6.1 below) set the maximum Fixed Termination Rate (FTR) at 0 00076 EUR per minute and 0 00083 EUR per call setup, and the maximum Mobile Termination Rate (MTR) at 0 0105 EUR per minute. These new rates have been in force since 1 July 2014. They are symmetric and based on efficient costs, calculated by using a benchmarking approach, not a BU-LRIC model.

The decisions on Market 1 (Wholesale call termination on individual public telephone networks provided at a fixed location) on the list of SMP operators (42 undertakings) and their respective remedies were adopted by SPRK on 4 November 2014. For Market 2 (Wholesale voice call termination on individual mobile networks), the decisions on the list of SMP operators (12 undertakings) and their respective remedies were adopted by SPRK on 5 March 2015.

On 5 January 2015, Lattelecom was notified by SPRK to the Commission as being the only SMP operator on Market 4 (Wholesale high-quality access provided at a fixed location). SPRK proposed to maintain the obligations previously imposed on Lattelecom and to complement these with additional obligations for new services. As a result, SPRK proposed to impose the following set of obligations for the relevant products:⁹ (i) access to and use of specific network facilities and services, (ii) obligation of non-discrimination, (iii) transparency obligation¹⁰, (iv) cost orientation and cost accounting and (iv) accounting separation. The decision imposing these obligations on Lattelecom is expected to be adopted by SPRK by summer 2015.

Following SPRK's decision of December 2013 on the market for wholesale (physical) network infrastructure access at a fixed location (Market 4 of the 2007 Recommendation on Relevant Markets) and on the market for wholesale broadband access (Market 5 of the 2007 Recommendation on Relevant Markets), Lattelecom has had new regulatory obligations since September 2014: first, its regulatory obligations have been extended to fibre related products, and second, Lattelecom has to provide access to civil engineering in infrastructure as well as access to the terminating segment in the case of FTTH and FTTB. However, there has been no demand on both markets. Lattelecom published the offers as requested by SPRK and was, in February 2015, in discussions with SPRK on their published tariffs.

Finally, Markets 1 and 2 of the 2007 Recommendation on Relevant Markets are still regulated in Latvia. SPRK plans to notify these markets in 2015.

⁹ In line with the definition of the relevant product market, the obligations on Lattelecom, proposed by SPRK, will cover the following types of access links: analogue and traditional leased lines (with speeds of 9.6 kbit/s, 64 kbit/s, 128 kbit/s, 256 kbit/s, 512 kbit/s, 1024 kbit/s and 2048 kbit/s) as well as Ethernet leased lines (10 Mbit/s, 100 Mbit/s, 1 Gbit/s and 10Gbit/s).

¹⁰ This includes a requirement to amend the existing reference offer in accordance with the new findings set out in this notification.

On 1 October 2014, in order to reduce numbering fraud cases, SPRK adopted Rules on fraud and misuse prevention. The rules characterise numbering fraud and define how the regulator and the cooperating electronic communications companies can detect and eliminate fraud cases using Latvian numbers. On 5 September 2014 the Cabinet of Ministers approved changes in the national numbering plan prescribing that rights of use for national mobile numbers may be obtained in two cases only: by a mobile operator if it has mobile frequencies allocated in the territory of Latvia, by an MVNO if it has an agreement with a mobile operator having mobile frequencies allocated in the territory of Latvia. Consequently SPRK withdrew numbering resources from fraudulent operators not respecting this condition. These measures have been well received by regular operators and should help to reduce the massive fraudulent use of national numbers that Latvia has experienced over the last years.

In 2014, Latvian operators continued to face two outstanding issues. First of all they have to pay very high and increasing MTRs imposed by non-EU — in particular Russian — operators while their own MTRs have substantially decreased following EU regulation. As a consequence, Latvian operators would like to be authorised to discriminate MTRs according to the country of call origination outside the EU.

Second, new companies are created with the purpose of charging high TRs until they are subject to regulated TRs (i.e. during the Framework Directive's Art. 7 procedure). SPRK intends to shorten the time for setting regulated TRs, in particular through Art. 7(9) of the Framework Directive. In some cases, some (small, fixed) operators interconnect with only one high-price transit operator, or ask for very high direct interconnection prices as an alternative to that transit operator. SPRK claims it has no competence to settle any dispute on that matter.

2.2. Access and interconnection

There are registered/notified IP interconnection agreements. However, SPRK does not distinguish interconnection agreements by technology: the Electronic Communications Law requires operators to send a third copy of interconnection agreements to SPRK, but they do not have to specify the technology of interconnection.

There are no registered IP interconnection disputes in Latvia, nor any issues reported concerning IP interconnection between OTT players and network operators.

No calendar has been set for migrating fixed networks towards IP interconnection architecture.

3. BROADBAND PLANS AND FINANCING

The implementation of the 'Next generation network for rural areas' (the NGN project or 'middle-mile' project)¹¹ is progressing at a good pace. Supported by the European Regional Development Fund (ERDF), the project is deploying black fibre and access points up to the centre of municipalities in rural areas currently not served by NGN and where there are no plans for NGN development ('white' areas defined according to EU

¹¹ SA.33324 — Latvia 'Next generation network for rural areas' (NGN Project) C (2011)7699, approved by the Commission on 9 November 2011.

broadband guidelines). Private providers have to deliver the last mile, for which no public support is foreseen. The first phase of the project ends mid-2015. By February 2015, 1358 km of pipes with 1727 km of optical fibre and 166 access points had been deployed (out of 177 access points planned for phase I, and 340 in total at the end of phase II). Access points are usually located in municipalities' centres (municipality houses, libraries, schools etc.). By February 2015, 156 access points were available for commercial exploitation. The project is currently on the list of Latvian projects candidate for financing under the European Fund for Strategic Investments; once the investment plan's rules and conditions for financing will be known, the Latvian authorities will decide whether or not to apply for that financing mechanism.

In 2014, the project's supervisory committee agreed on a methodology to calculate the (cost-oriented) prices at which dark fibre will be rented by the network owner, the State Joint Stock Company 'Latvia State Radio and Television Centre' (LVRTC). The prices will be reviewed annually and are expected to decrease over time. Technical access requirements have also been discussed with industry and municipalities.

In view of the 2nd phase of the project, a survey has been conducted to update white and grey territorial units in the country. An additional finer-grain survey was also conducted in order to identify small, local white spots within grey areas (typically a 'white' village in a grey territorial unit).

Several questions are likely to arise in the future regarding the State aid scheme for this project, in particular: (i) to allow financing additional access points in local white spots within grey areas, (ii) to allow financing additional data transmission services at middle-mile level, as it turns out that a number of small network operators do not have the capacity to invest in the necessary equipment. For the moment, these two measures cannot be financed by public funds under the project's State aid scheme.

Vigorous competition between operators is expected for the last mile. Some contracts have already been signed with the network owner LVRTC. However according to Lattelecom decisions on the last mile will also depend on 4G deployment in the months to come. Early 2015, Lattelecom had reached about 70 % population coverage with GPON and is not investing anymore in new GPON as intensively as it did over the last years.

In 2018-2019 a survey on availability of the last mile is planned to be conducted; as 4G roll-out will be mostly done by that time, the survey will give a real picture of the provision of very fast broadband in the country.

4. INSTITUTIONAL ISSUES

4.1. The National Regulatory Authority

The *Sabiedrisko pakalpojumu regulēšanas komisija* (SPRK) (Public Utilities Commission) has been established by *Likums Par sabiedrisko pakalpojumu regulatoriem* (Law on Regulators of Public Utilities). SPRK is a multi-sector regulator responsible for the main tasks assigned to national regulatory authorities under the regulatory framework for electronic communications in the EU. SPRK is responsible for granting rights of use of spectrum for commercial use.

SPRK Resources	2014
-----------------------	-------------

Personnel ¹²	23
Increase	0 %
Budget ¹³	€ 5.08 Million
Increase	+0.4 %

Valsts akciju sabiedrība 'Elektroniskie sakari' (VAS ES) (State Joint Stock Company 'Electronic Communications) is responsible for the technical management of the radiofrequency spectrum (both for electronic communications and broadcasting): planning of frequency spectrum and issuing frequency assignment usage permits in all cases of commercial and non-commercial use, monitoring of radiofrequency spectrum, ensuring electromagnetic compatibility (EMC) for spectrum users. VAS ES is a State-owned company, whose 100 % shareholder is the Ministry of Environmental Protection and Regional Development (VARAM).

VAS ES Resources	2014 ¹⁴
Personnel	93
Increase	-1.1 %
Income	€ 5.6 Million
Increase	+1.6 %
Administrative charges ¹⁵ (income from EMC services)	€ 5.4 Million
Administrative costs ¹⁶ (costs of EMC services)	€ 5.4 Million

Following the Commission's request to comply fully with the EU regulatory framework's provisions related to NRA's independence¹⁷, the Latvian legislator adopted on 25 September 2014¹⁸ an amendment to the Law on Regulators of Public Utilities providing for the publication in the Latvian Official Gazette *Latvijas Vēstnesis* of a statement of reasons for dismissal if the concerned SPRK Council member so requests.

In September 2014 the Commission closed the infringement proceeding concerning the administrative charges imposed by VAS ES for ensuring electromagnetic compatibility in spectrum usage. The closure of the infringement procedure followed the revised methodology for establishing the charges and the new price list subsequently adopted by the Cabinet of Ministers on 1 July 2014¹⁹. This new price list is meant to be further adapted to continuous technological development and is valid until end of 2016. It will therefore need to be revised by then. A new working group involving VAS ES,

¹² Number of staff in full time equivalents (fte) in electronic communications and post. Total staff of SPRK (all sectors): 121 in 2014 (+2.5 % with respect to 2013).

¹³ Actual expenditure of SPRK. There is no separate budget for regulation of the electronic communications Sector.

¹⁴ Unaudited results.

¹⁵ In the sense of Art. 12 of the Authorisation Directive (Directive 2002/20/EC as amended by Directive 2009/140/EC).

¹⁶ Idem.

¹⁷ Article 3(3a) of Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services (OJ L 108, 24.04.2002), as amended by Directive 2009/140/EC (OJ L 337, 18.12.2009) and Regulation 544/2009 (OJ L 167, 18.6.2009) (the Framework Directive).

¹⁸ Published in the Official Gazette (*Latvijas Vēstnesis*) on 8 October 2014.

¹⁹ Cabinet of Ministers' Regulation No 375 of 1 July 2014.

representatives of spectrum users²⁰ and of the Ministry of Transport has already been set up for that purpose.

In 2014 SPRK examined only one dispute between an end-user and an electronic communications provider related to unclear payment limitation (credit limit) in the contract. Following this dispute, SPRK proposed an amendment to its General Authorisation Rules (see section 4.2 below).

In 2014 four decisions of SPRK were appealed²¹. In two cases preliminary ruling was requested but not considered by the Court as the application did not fulfil the criteria. Two cases are still pending in the court. In 2014 the court did not cancel or uphold any decision by SPRK.

4.2. Authorisation and licences

A company has to be registered in the State company register prior to notifying to SPRK in order to become an authorised electronic communications service or network provider. SPRK has issued a total of 10 licences for wireless mobile broadband in several spectrum bands for 4 operators in 2012-2013 (none in 2014). The main conditions attached to wireless mobile broadband rights of use are coverage obligations expressed in terms of number of base stations to be installed by geographic areas. According to the Electronic Communications Law all rights of use for radio spectrum are service and technology neutral. For radio spectrum sold in the tender procedure, spectrum trading and spectrum sharing is allowed.

On 17 August 2014 SPRK started public consultations regarding a possible 'renewal' process for the 900 MHz and 3.4-3.8 GHz bands.

Both Mobile Satellite Services operators have been authorised in Latvia. SPRK has allocated rights of use for radio spectrum to Inmarsat and Solaris according to EC decision 2008/626/EC and 2009/449/EC.

Early 2015, SPRK proposed amendments to its General Authorisation Rules with the aim to reinforce consumer protection and rights regarding information about his/her credit limit and online information referred to in his/her contract. The proposed amendments also impose operators to publish the location (address) of their interconnection points, and to try and find an agreement on the interconnection protocol. In case no agreement is found, the operators asking for the interconnection has to pay the price requested by the operator it seeks interconnection to. In February 2015, the proposed amendments were submitted to a public consultation SPRK received two inputs from the largest market players to this public consultation and it planned to adopt the document as final by the end of May 2015.

If an OTT services provider intends to offer voice telephony services and needs numbering resources for that purpose, SPRK may allocate rights of use for numbers according to the national numbering plan.

²⁰ Latvian Association of Information and Communication Technologies (LIKTA), Latvian Internet Association and Telecommunications Association of Latvia.

²¹ A Decision on mobile termination rates, a Decision on sanctions due to denial of access to their electronic communications network carried out by the undertaking with significant market power, and two Decisions on cancellation of the rights of use of the numbering.

5. SPECTRUM MANAGEMENT

No additional spectrum was made available or assigned in 2014 for wireless broadband.

On 30 January 2015, SPRK opened a one-month public consultation for the auction of one 14 MHz-wide channel in the 3.4-3.8 GHz band, following the expression of interest of one applicant. However, in April 2015 SPRK took a decision to stop all activities on the auction preparation following the withdrawal of the application by the applicant.

The three mobile operators having been granted the rights of use of the 800 MHz band in November 2013 have been building their respective LTE infrastructure in view of operating the band as of the end date of the derogation period (1 July 2015). This derogation period had been requested, and obtained, by Latvia as a result of the necessary coordination with Russia.

So far, there has been no public discussion concerning the future of the 700 MHz band in Latvia. The Latvian authorities have concerns about using this band too early for mobile services. TV licences on this band run until 2022 in the country. In addition, the 800 MHz band will start being used for mobile services only mid-2015; there is still some time ahead before its capacity is exhausted by mobile communications. Finally Russia will not use the 700 MHz band for mobile services and this will cause major coordination problems.

6. RIGHTS OF WAY AND ACCESS TO PASSIVE INFRASTRUCTURE

Local Authorities and the Ministry of Justice are responsible for collecting physical infrastructure data and building a database out of it. The infrastructure data suppliers are the government, local municipalities, ISPs, telecoms operators, and utilities companies. Digital topographic maps are used in scale 1:500 (or 1:250) in cities and 1:1000 in others areas. An update is done within 12 days after the acceptance of each construction work.

Before carrying out civil works or installing a network, an ECN provider must obtain all permits and authorisations for a construction project from local authorities. No estimation of the time period necessary for the company to obtain all permits is available. So far, it has not been possible to electronically submit requests for such permits. However, the Ministry of Economy is responsible for building an electronic information system for construction works projects²². The system should have been ready by the end of 2014. The new Construction Law came into force on 1 October 2014. The three Cabinet Regulations²³ currently determining ECN's construction process are now being revised according to the new Construction Law.

Access to cable ducts and manholes on symmetrical basis has been mandatory since 1 April 2014, following amendments to the Electronic Communications Law adopted in December 2013. The symmetrical remedies are therefore limited to passive infrastructure and concern infrastructure established thanks to rights of way. Access to cable ducts, manholes and poles, terminating segments in case of FTTH and FTTB and unbundling

²² www.bis.gov.lv.

²³ Cabinet of Ministers' Regulations on General Construction, on Electronic Communications Installation, Construction and Supervision Procedure, on Latvian Construction Standard for Electronic Communications Networks.

access for metallic and fibre access lines on asymmetric base has been mandatory for the incumbent operator (Lattelecom) since 1 September 2014. There are no requirements to provide access to other utilities infrastructure elements.

The transposition work of Directive 2014/61/EU on measures to reduce the cost of high speed broadband deployment is progressing. According to the Latvian authorities, the difficulty is that the Directive covers both regulated and non-regulated sectors. One of the difficult issues in Latvia is to set up an out-of-court dispute settlement between owners of immovable properties, private persons, and ECS providers. In Latvia, this has so far been settled only in Court.

7. CONSUMER ISSUES

7.1. The European emergency number 112

The caller location database previously maintained by VAS ES has been under the responsibility of the Information Centre of the Ministry of Interior (hereinafter the 'Centre') since February 2014. Cabinet of Ministers Regulation No 54 on the 'specification, processing, maintenance and transmission of caller location data'²⁴ was adopted on 3 February 2015²⁵. This regulation mandates mobile operators to determine, and transmit to the Centre within one minute, caller location data by using at least the coverage information of a mobile communication tower (Cell ID or Sector ID) or another location determination method that is technically available in the electronic communication network and allows obtaining more precise and reliable caller location data. The regulation however provides for possible exceptions to this obligation: in case the transmission of caller location information is not possible, the operator must immediately inform the Centre about it.

7.2. Number portability

Number portability ²⁶		2013	2014
Fixed	Number of transactions	25,600	38,426
	% of total numbers	2.0%	2.8%
	Maximum wholesale price	6.0	8.6
	Maximum time under regulation (number of working days)	1	1
Mobile	Number of transactions	129,348	324,823
	% of total numbers	2.0%	4.0%
	Maximum wholesale price	10.0	14.3
	Maximum time under regulation (number of	1	1

²⁴ Cabinet of Ministers Regulation No 54 of 3 February 2015 amends Cabinet of Ministers Regulation No 271 of 26 May 2014 on the 'specification, processing, maintenance and transmission of caller location data'.

²⁵ *Latvijas Vēstnesis* OP 2015/25.6.

²⁶ Source: figures provided by Latvia to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe.

	working days)		
--	---------------	--	--

The rules on number portability were adopted by SPRK in 2011 and have not changed since then. Number activation is provided within one working day.

7.3. Contractual obligations

There has been no change in the rules on minimum commitment periods. The initial contract commitment period cannot exceed 24 months. ECS providers must offer users the possibility to subscribe to an ECS contract with a maximum duration of 12 months initially.

According to the Electronic Communications Law, subscribers have the right to terminate an ECS contract without the application of penalties if the subscriber, upon receipt of a notification from the ECS provider regarding changes in the conditions of the contract, does not agree to the offered changes in the contract conditions. A subscriber shall be informed by the ECS provider regarding changes to the conditions of the contract and the right to terminate the contract without the application of penalties not later than one month prior to the moment the changes in the contract conditions come into effect.

7.4. Other consumer issues

By law, all information about tariffs and tariff plans should be publicly available; operators in Latvia comply with this obligation. Calculators to compare mobile telecom services and Internet services tariffs of different providers have been made available by independent organisations in Latvia²⁷. Operators on their side have made calculators/comparators available on their websites to help customers choose the tariff plans that suit them best. Customers of mobile operators have the possibility to check their ongoing consumption via their user profile on the operators' websites.

Regarding the quality of service, operators are obliged to provide their annual quality declaration to SPRK which SPRK then publishes, in a comparable way, on its website.

Overall, telecom-specific consumer protection rules²⁸ in Latvia match general consumer protection rules and include some more detailed requirements for some contractual terms and conditions (e.g. information on certain quality of services parameters, consumer's rights to exit terminate the contract without contractual sanctions, information about the equipment necessary for the services provision).

In Latvia, the Consumer Rights Protection Law sets the terms and procedures for consumer complaint handling; the Administrative Procedure Law sets complaint handling provisions in administrative cases. The procedure for the resolution of disputes by SPRK is set out in the Law on Regulators of Public Utilities.

In 2014 SPRK and the Consumer Rights Protection Centre (CPRC) received 70 and 71 written complaints respectively. The exchange of information between SPRK and CPRC is a process defined in a cooperation agreement between the two institutions.

²⁷For instance: <http://www.gudriem.lv>, <http://www.internetapijieslegumi.lv>, <http://www.salidzinajums.lv>.

²⁸Set out in the Electronic Communications Law and in SPRK's General Authorisation Rules.

In the ECS sector, consumers' complaints are mainly related to pricing and billing, availability and quality of the service, distance vs door-step contracts, number portability, lack of communication of the provider with its customers, existence and validity of debts, unfair contract terms and commercial practices, misleading information given in campaign offers and contract terms.

No complaint regarding cross-border (and domestic) access to non-geographical numbers was received by SPRK and CPRC in 2014.

8. UNIVERSAL SERVICE

There has been no change in 2014 concerning the scope, designation and financing of the universal service obligations in Latvia. There are some discussions concerning a possible inclusion of broadband provision among universal service obligations, but no decision yet. At present the universal service obligations include providing access to the internet at a discounted rate for disabled users in Latvia.

The net cost of universal service obligations amounted to 292.153 EUR in 2013. The net cost for 2014, similar to that of 2013, is being audited. The largest share of this amount is related to losses from discounts for disabled users. Currently, the universal service is financed from the State budget.

9. NET NEUTRALITY

9.1. Legislative situation

There is no net neutrality legislation in Latvia and no preparation of such legislation. Some net neutrality principles regarding transparency and consumer contracts, enshrined in the Universal Service Directive, are included in the Electronic Communications Law and SPRK's General Authorisation Rules. SPRK has not received any complaint regarding traffic management and the openness of the Internet (blocking, throttling, special tariffs).

9.2. Quality of service

SPRK is responsible for quality of service implementation and monitoring. SPRK's web-based measurement tool may be used for monitoring both fixed and mobile broadband quality of service. The access to this measurement tool is opened for ISPs and their customers.

SPRK's General Authorisation Rules determine which quality of service requirements should be included in the consumer contracts and define the main measurement principles. More detailed definitions and measurement requirements for the quality of service parameters are described in SPRK's Regulation on the 'Quality Requirements of Electronic Communications Services, Submission and Publishing the Quality Reports'. The following parameters are monitored by SPRK: supply time for initial connection, fault repair time, upload and download speeds, latency, jitter, packet loss ratio, service availability.

Information on consumer satisfaction with quality of service is gathered through consumers' complaints, which SPRK annually reports on. SPRK also publishes the

results of its quality of service measurements in the annual Quality of Service Report, as well as in its Annual Activity Report.

The quality of service is very high in Latvia. The country has been among world leaders with its average and peak fixed access Internet download speeds for several years. There has been no complaint on fixed networks for the last two years. The quality of mobile voice telephony and SMS services is very good in locations where a stable coverage of the mobile network is ensured. Regarding mobile Internet access service, download and upload speeds vary across operators and territories, due to the still early stage of 4G deployment in the country. SPRK measured tenfold drops of download speed during peak load including in locations equipped with the latest technologies.

Results of SPRK's quality of service measurements are used by operators in their advertising campaigns. SPRK is of the view that its tight quality of service monitoring is an important incentive for operators to continue investing in their networks to maintain high levels of quality of service.

Lithuania

1. MARKET DEVELOPMENTS

Broadband indicators (December 2014)¹	LT 2013	LT 2014	EU 2013	EU 2014
Fixed broadband coverage ²	97%	98%	97%	97%
NGA coverage ²	97%	97%	62%	68%
Fixed broadband take-up ²	58%	58%	69%	70%
Share of >30Mbps subscriptions ³	47%	52%	21%	26%
Share of >100Mbps subscriptions ³	10%	11%	5%	9%
Share of DSL in fixed broadband ³	21%	19%	73%	70%
Incumbent market share fixed broadband ⁴	51%	51%	42%	41%
HSPA Mobile broadband coverage ²	95%	99%	97%	97%
LTE Mobile broadband coverage ²	29%	80%	59%	79%
Mobile broadband penetration ⁵	49%	60%	64%	72%
Market share of leading mobile network operator ⁴	40%	42%	35%	35%

The fixed telephony market is receding both in terms of subscribers and revenues. This market is strongly dominated by the incumbent operator TEO LT, AB (TEO) and its market share is increasing with 95.1% of market shares in revenues⁶. However, its VoIP market share in revenues is only 11.2%. Out of the remaining 46 fixed telephony providers, 32 of them do not have a direct interconnection with other networks and use wholesale call services of other operators. 33 fixed telephony providers provide VoIP services. In the fixed broadband market the revenues declined by 0.5%⁷. This can be

¹ Sources: coverage data — studies by IHS and VVA; penetration data — figures provided by Lithuania to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe (except fixed broadband take-up, provided by Eurostat).

² % of households.

³ % of fixed broadband subscriptions.

⁴ % of subscriptions.

⁵ Subscriptions per 100 inhabitants.

⁶ Source: RRT.

⁷ Source: RRT.

explained by a high degree of competition in this market and very low prices compared with the EU average. The fixed broadband market is still dominated by the incumbent operator TEO, with its 51 % market share. The second largest fixed broadband provider, a state-owned company follows with 9.4 % market share (slight decrease compared with last year). With 52 % of the fixed broadband users having speed of 30 Mbps or more (with 11 % over 100 Mbps), Lithuania is well above EU average.

The mobile telephony market is stagnating, with mobile telephony segment in decline. In the mobile broadband segment, on the other hand, the market is more dynamic, with growth in mobile broadband take-up. Although the share of the LTE usage subscribers is still relatively low in the overall number of mobile broadband subscribers, it showed a sharp growth (almost 401 % in Q3 2014 compared with Q1 2014)⁸. At the end of 2014 LTE mobile broadband coverage was 80 %.

Both revenues and investments in the sector declined. Investments have mostly been targeted at the deployment of fibre networks (FTTx), 4G networks and in upgrading of current infrastructure. The number of LTE base stations grew by 496.1 % in 2014 Q3, while the number of base stations using the UMTS technology grew by 44 %.⁹

2. MARKET REGULATION

2.1. Market analysis

The analysis of some relevant markets is delayed, in comparison with the three-year time limit provided in the European Framework for the periodical review of market analysis. For their completion there is no concrete timetable available. In RRT's opinion this is due to the fact that all pending market reviews are interrelated and therefore these market analyses would run in parallel. In any case, the RRT is trying to catch up and it has completed the following 4 market analyses.

In February 2014, RRT carried out a market analysis of wholesale broadcast transmission services, by applying the three criteria test. The RRT analysed two separate markets: broadcasting transmission services, to deliver content to end-users and market of the facilities to deliver broadcasting transmission services. In the former market, it designated two SMP operators and therefore imposed *ex ante* remedies on digital terrestrial television broadcasting services. In the latter market, it designated one SMP operator and regulated access to facilities used for the provision of both radio and TV broadcasting services. The Commission, in the light of the fact that this market is no longer listed as a relevant market since the 2007 Recommendation on Relevant Markets, invited RRT to closely monitor the developments in the markets in terms of infrastructure and services competition both at the retail and wholesale level including developments concerning the licensing regime and, at the same time, to collect retail market data on inter alia switching behaviour. The Commission agreed with the argumentation presented by the RRT that under the specific circumstances in Lithuania the replication of a broadcasting transmission network to cover the entire territory, together with the existing exclusive rights to offer broadcasting transmission services

⁸ Source: RRT.

⁹ Source: RRT.

granted to Lithuanian Radio and Television Centre (LRTC) and TEO appear to be a high barrier for entry.

In July 2014, RRT carried out a market analysis of wholesale voice call termination on individual mobile networks. It designated all MNOs and OTTs as having SMP and imposed respective regulatory remedies. When setting mobile termination rates (MTR), RRT applied a benchmark-based on the average of pure BU-LRIC rates (average MTR of Member States which had already implemented pure BU-LRIC) at a level of 1.04 €cents/min. as of 1 August 2014.

In August 2014, RRT carried out a market analysis of the transit services in the fixed public telephone network and found that it no longer satisfies the three criteria. Therefore, this market was deregulated.

In October 2014, RRT carried out the analysis of the market for call origination on the public telephone network provided at a fixed location market. It designated an SMP operator imposing a set of regulatory obligations. RRT set the call origination tariff symmetrical to current fixed termination rates at 0.61 €cents/min. While providing comments to the notified draft decision, the Commission called upon RRT to set the call origination charges in this or any forthcoming price decision at a level which reflects the costs of providing the relevant wholesale service. The Commission took the view that RRT's proposed approach with regard to the setting of call origination rates hinders regulatory predictability and legal certainty and makes it difficult for operators to develop long-term business plans and plan investment decisions. In this regard, the Commission would like RRT to closely cooperate with the Commission, BEREC and other NRAs to define the price control remedy best suited to address failures identified on the market for fixed voice call origination services, especially in view of RRT forthcoming notification of fixed termination markets at the end of March 2015 and resulting changes to the call origination rates.

2.2. Access and interconnection

Three types of internet interconnections are used at the moment: transit, peering and Internet Exchange Points (IXP). Transit is mainly used by small internet service providers (ISPs), while peering and IXP are used by larger ISPs. The RRT is currently investigating internet interconnection after receiving complaints from some of the market players regarding the incumbent operator TEO, which would be able to influence the applicable conditions. No schedule for the migration of fixed networks towards an IP interconnection architecture has been set yet.

3. BROADBAND PLANS AND FINANCING

Following the public consultations, the national broadband plan (NBP) was adopted on 30 October 2014, which is in line with the Digital Agenda targets. The NBP foresees that 100 % per cent of households should have the possibility to connect to internet speeds of at least 30 Mbps by 2020. The number of households having internet access using fixed connectivity services should increase to 79 %. Most of the fixed connections are expected to be fibre or high speed equivalent. White and rural areas which are not densely populated will have access via mobile technology.

In support of these objectives, public financing is foreseen through ESIF, more precisely through the third phase of the RAIN project ‘Development of Rural Area Information Technology Network’. The allocation for 2014-2020 is approximately EUR 46 million¹⁰ for rolling out fibre and for setting up masts. Additional EUR 3.7 million is foreseen in Rural Development Funds. Some market players expressed doubts on the usefulness of the current preliminary concept of the RAIN III project given the fact that the investment information on which it is based is rather outdated. However the project design still needs to be defined and the Ministry will subject it to consultation.

Using the Structural Funds 2007-2013, under project RAIN II, Lithuania has successfully rolled out fibre in rural and white areas. During the programming period it has financed the deployment of some 5900 km of fibre optic cables and the connection of some 950 rural settlements, in total making 3000 points of connection available to retail operators. RAIN II is in its final phase and it should be soon completed. The infrastructure built through the RAIN projects (phases I and II) is managed by a state-owned non-profit wholesale broadband network operator ‘Plačiajuostis Internetas’ which applies the open-access wholesale model (no last mile connectivity). Currently 46 operators are served.

4. INSTITUTIONAL ISSUES

4.1. The National Regulatory Authority

Lietuvos Respublikos ryšių reguliavimo tarnyba (RRT) (the Communications Regulatory Authority of the Republic of Lithuania) has been established by Lietuvos Respublikos elektroninių ryšių įstatymas (Law on Electronic Communications). RRT is responsible for all the main tasks assigned to national regulatory authorities under the regulatory framework for electronic communications in the EU.

	2014
Personnel ¹¹	163
Increase	0 %
Budget	€ 6.6 Million
Increase	-3 %
Administrative charges ¹²	€ 6.8 Million
Administrative costs ¹³	€ 5.6 Million

RRT has other tasks and activities besides the ones prescribed under the electronic communications regulatory framework, such as acting as the eSignature Surveillance Authority, implementing the Law on Protection of Minors against Detrimental Effect of Public Information, etc. No specific budget is allocated for performance of these tasks.

There is one ongoing dispute resolution case between undertakings concerning prices of facilities to deliver TV broadcast transmission services before the RRT.

¹⁰ Indicative amount.

¹¹ Number of staff in full time equivalents (fte).

¹² In the sense of Art. 12 of the Authorisation Directive (Directive 2002/20/EC as amended by Directive 2009/140/EC).

¹³ Idem.

4.2. Authorisation and licences

In 2014 spectrum in the 2.3-2.4 GHz band (2310-2390 MHz) was granted to the Lithuanian Radio and Television Centre (LRTC) upon its request. The licence is technologically neutral.

The frequency bands 1980 – 2010 / 2170 – 2200 MHz are allocated to Mobile Satellite Service (MSS). Inmarsat Venture Limited and Solaris Mobile Limited submitted their notifications to the RRT.

Electromagnetic field limits are stricter than the ones set at EU level (in the Council Recommendation 1999/519/EC). Stakeholders report that such levels affect the pace of the LTE deployment. A new draft proposal by the Ministry of Health with provisions increasing the EMF limits is under discussion. If adopted, the respective provisions are expected to enter into force in July 2016.

RRT has granted access to the OTT to ‘short numbers’, dedicated to providers of non-electronic communication services (i.e. delivery, transport, information services). The RRT prescribed that in order to be able to have access to ‘normal’ (long, e.g. +370 x xxxxxx) numbers, OTTs should have the right to engage in the provision of the networks and/or services (i.e. have to submit notification to RRT).

5. SPECTRUM MANAGEMENT

Following the auction for granting rights of use for 2.6 GHz band — 2560-2570 MHz/2680-2690 MHz and 2570-2620 MHz bands- held on 14 March 2014, this spectrum has been granted to LRTC on 11 July 2014. The licence is technologically neutral.

Consequently 800 MHz, 900 MHz, 1800 MHz, 1920-1980/2110-2170 MHz, 2310-2390 MHz, 2.5-2.69 GHz and 3.4-3.8 GHz are assigned to WBB and are technologically and service neutral frequency bands.

The 700 MHz band, currently used for broadcasting is under consideration for WBB deployment. However, Lithuania is faced with certain constraints arising from cross-border frequency coordination problems with non-EU neighbouring countries such as Russia and Belarus which do not envisage refarming of the band in the near future.

6. RIGHTS OF WAY AND ACCESS TO PASSIVE INFRASTRUCTURE

A website (<http://e-infrastruktura.lt/lt>) serves as the single information point for infrastructure mapping systems covering telecommunications infrastructure and utilities infrastructure. This has achieved the status of full implementation in the four municipalities: Vilnius, Kaunas, Klaipeda and Panevėžys. The maps are available online, but to registered users only.

The procedures for granting rights of way are mainly local. Electronic submission of applications for permit granting is available in some municipalities. No abusive conditions or discriminatory treatment was reported by operators, though faster procedures were deemed necessary. As for granting permits to build electronic infrastructure, electronic submission of applications for permit granting is available in all

municipalities via <http://www.planuojustatyti.lt>. In the case of fixed networks, receiving a permit to build electronic infrastructure may take up to one month depending whether it falls within or outside of the scope of construction laws. In the case of mobile networks, it takes up to one month for antennae, while it may take up to several months for towers.

Passive infrastructure sharing is mandated both on an asymmetric and a symmetric basis. Access to other utilities infrastructure is provided for, yet cooperation seldom occurs in practice. Coordination of civil infrastructure works is ensured by certain local authorities. It is mandatory to prepare new buildings for the NGA: each apartment block needs to have three mini-ducts able to host various NGA networks. This also applies to renovation of old buildings. Infrastructure sharing obligations have been imposed in relation to the existing in-house infrastructure.

In relation to plans on transposition and implementation of Directive 2014/61/EU, while Lithuania already has rather advanced provisions in this area, some acts are currently under revision by the Ministry of Transport, RRT and the Ministry of Environment with draft Laws to be prepared by the end of the 2Q 2015.

7. CONSUMER ISSUES

7.1. The European emergency number 112

Lithuania adopted specific criteria for the accuracy and reliability of caller location¹⁴. It stipulates providers of public mobile telecommunication networks shall provide the location data at the Cell ID accuracy and that 95 % of all the location data must be provided not later than within the time period of 20 seconds as of the moment of connection to the PSAP. At the moment, the mobile operators automatically supply caller location information to the PSAP using the push-method and the caller location information is processed automatically by the competent central authority. The caller location information is also provided in case of inbound roaming and when a call is made from a mobile device without a SIM card. Caller location in fixed networks is provided by using comprehensive public address book and it is based on the push-method. The 112 number is connected to fire brigade and police but not to medical services, for which a different number needs to be dialled. The Commission services are currently looking into the functioning of 112 number in Lithuania.

There are three operational 116 European harmonised numbers for services of social value; 116 111 — for child helplines (www.pagalbavaikams.lt); 116 123 –for emotional support helplines (www.klausau.lt); 116 000 — the European hotline number for missing children (www.116000.lt).

7.2. Number portability

Number portability ¹⁵	2013	2014
----------------------------------	------	------

¹⁴ Order No 1V-1087 of the Director of the Communications Regulatory Authority of the Republic of Lithuania of 7 November, 2011.

¹⁵ Source: figures provided by Lithuania to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe.

Fixed	Number of transactions	7,819	4,057
	% of total numbers	0.8%	0.6%
	Maximum wholesale price	0.0	0.0
	Maximum time under regulation (number of working days)	1	1
Mobile	Number of transactions	116,808	126,548
	% of total numbers	1.6%	1.9%
	Maximum wholesale price	0.0	0.0
	Maximum time under regulation (number of working days)	1	1

In October of 2014 RRT announced the winner of the tender for a new central data base (CDB) administrator. The new company will maintain the data base for a five-year period. All operators are obliged to connect to CDB. It provides functions 24 hours per day, 7 days per week; its annual accessibility must be not less than 99.7%. Donor cannot restrict user's right to port his number even if this action violates conditions of civil agreement. Operators are not entitled to take any fee related to subscriber's number porting while changing a provider of telephone services, the place or the method of the provision of the service.

7.3. Contractual obligations

Minimum commitment periods are of two years according to Lithuanian law, but all three major mobile operators also offer contracts with no commitment period.

7.4. Other consumer issues

In 2014 RRT received 245 consumer complaints. The main source of these complaints related to tariffs, followed by complaints regarding quality of service and bills.

Consumers have to be informed about all consequences arising from the termination of civil agreement (for instance, related to subsidised mobile phones). The tariff transparency is ensured by the BEEP tone method. The providers of public telephone communications services shall inform the user of public telephone communications services by a tone signal, prior to call setup on the fact that the subscriber is making a call to a network of another provider of public telephone communications services. In case of value added services, prior to being provided with the increased tariff service the users have to be informed on the tariffs which are charged for the increased tariff service.

8. UNIVERSAL SERVICE

Telephony services provided at a fixed location, directory enquiry services, public pay phones, and functional internet access, are included in the universal service obligation and catered for by the incumbent operator TEO. At least once a year RRT publishes proposals to providers to express their wish to provide universal services. RRT in 2014 did not receive a request from the TEO to compensate the losses of the universal services. RRT's review of the obligation related to access to public pay phone services is

ongoing, in view of a reduction in the density of public pay phones due to lack of demand.

9. NET NEUTRALITY

9.1. Legislative situation

There is no net neutrality law in place in Lithuania, nor a proposal for a net neutrality law. No specific self-regulatory initiatives are envisaged in the net neutrality field.

9.2. Quality of service

RRT is responsible for QoS implementation and monitoring. It has tools to evaluate the quality of fixed and mobile internet as well as mobile telephony services. The web-based tool matuok.lt measures the internet speed available for the end-user with current internet access connection and a database website with surveillance data compares the performance of all mobile internet access providers at various locations across the country (<http://epaslaugos.rrt.lt/matavimai>).

Luxembourg

1. MARKET DEVELOPMENTS

Broadband indicators (December 2014)¹	LU 2013	LU 2014	EU 2013	EU 2014
Fixed broadband coverage ²	100%	100%	97%	97%
NGA coverage ²	94%	94%	62%	68%
Fixed broadband take-up ^{2 3}	-	91%	69%	70%
Share of >30Mbps subscriptions ⁴	26%	36%	21%	26%
Share of >100Mbps subscriptions ⁴	1%	7%	5%	9%
Share of DSL in fixed broadband ⁴	82%	78%	73%	70%
Incumbent market share fixed broadband ⁵	71%	69%	42%	41%
HSPA Mobile broadband coverage ²	100%	100%	97%	97%
LTE Mobile broadband coverage ²	80%	96%	59%	79%
Mobile broadband penetration ^{6 3}	-	59%	64%	72%
Market share of leading mobile network operator ⁵	54%	55%	35%	35%

In 2014, the value of the Luxembourgish electronic communications market decreased by 5.2 % below the 2013 value of € 534.7 m. Negative revenue developments were felt most strongly in mobile telephony where revenues decreased by 13.2 % as a result primarily of steeply lowered termination rates, whereas the fixed segment grew by 4.7 % overall, due notably to strong growth of 14.2 % in the enterprise market. Only mobile data services and ultra-high speed fixed Internet access grew in 2014, while the consumption of voice and SMS services decreased across fixed and mobile segments. Operators nevertheless continued to invest at significant levels of 39.8 % of annual revenues, exceeding the level of 26.6 % in 2013.

¹ Sources: coverage data — studies by IHS and VVA; penetration data — figures provided by Luxembourg to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe (except fixed broadband take-up, provided by Eurostat).

² % of households.

³ These indicators cannot be compared with those of last year in Luxembourg.

⁴ % of fixed broadband subscriptions.

⁵ % of subscriptions.

⁶ Subscriptions per 100 inhabitants.

In fixed communications, subscription revenues decreased by 8.5 % to € 48.2 m despite an increase in the number of subscriptions of 1.2 % relative to 2013. At the same time, there was a strong increase in VOB uptake by 37.7 % to 68 000 connections during the year. In only four years, this segment has seen remarkable growth of 2025 %, now serving one third as many as PSTN connections and amounting to one fourth of the market in total. In Internet access products, fibre saw a significant two thirds increase in uptake compared with 2013. Cable access increased 8.7 % year-on-year, while copper access products stagnated. DSL technology represented 78 % of all broadband subscriptions in Luxembourg at the end of 2014, followed by cable and FTTB/FTTH accounting for 11 % of the market each. These developments are reflected at the top end of Internet capacity ranking, with 7.4 % of the population having access above 100 Mbps compared with 1.4 % in 2013. Competitive pressure between the incumbent and cable network operators has remained an important trigger. Nevertheless, more than four in ten residents still only have speeds between 2 and 10 Mbps.

In the mobile communications market, operators were generally affected by the application of a transitional benchmark-based termination rate. Moving towards a costing model in line with EU recommendations led to a decrease in the termination rate to one tenth of what was previously applicable. This put pressure on operators in relation to bordering jurisdictions where significantly higher rates applied. All mobile operators reported significant decreases in revenues as a result. Total retail market value decreased by 1.2 % relative to 2013, with revenues of € 233.7 m, the total aggregated revenues of retail and wholesale revenues decrease by a 13.2 % to € 270.8 m. In 2014, significantly greater importance attached to bundled offers, which were the only residential segment exhibiting growth next to data. But while data usage grew by almost 60 %, the corresponding revenues only increased by 4.9 %, hinting at the challenge for operators to ensure revenue growth. For both SMS and voice services, revenues decreased even more strongly than usage volumes. Overall, the proportion of revenues from inbound and outbound roaming and termination of national and international calls is high compared with other countries. The market did not see any changes in the number of MNOs, yet a new full MVNO with a pan-European strategy made its entry. The market structure remained stable, with the three MNOs capturing around 97.5 % of active SIM cards in the market. At the same time, there was a significant increase in the number of postpaid mobile subscriptions, while the number of prepaid active SIM cards continued to decrease. At the end of 2014, Luxembourgish operator Tango announced the deployment of LTE-Advanced.

The take-up of bundled offers in Luxembourg is strong, with around 70 % of households subscribing to multi-product offers. The most popular combinations are triple-play offers (Internet-Voice-Mobile and Internet-Voice-TV), while the significance of quadruple-play (Internet-Voice-Mobile-TV) is increasing on yearly basis. The increased relevance of multi-play is also reflected by providers of electronic communications increasingly looking to become full service operators. In 2014, service complementarity had not yet produced any vertical agreements with OTTs.

2. MARKET REGULATION

2.1. Market analysis

Between spring 2014 and spring 2015, the NRA has been active to make up for the delays in market analyses, as a result of which some of the incumbent's wholesale offers

had remained unregulated. The Commission decided on 16 October 2014 to refer Luxembourg to the Court for failure to ensure compliance with its obligations under the amended Framework Directive. Following notification of the markets for which a second round of analysis had still been missing, the Commission decided on 26 March 2015 to withdraw the case. The high number of consultations in 2014 led to a certain consultation fatigue in the sector. Throughout the process, the regulator continued publishing targeted reactions to operators' previous comments.

On 4 July 2014 the Commission registered notifications from the ILR, concerning the second-round review of the market for wholesale (physical) network infrastructure access (including shared or fully unbundled access) at a fixed location, wholesale broadband access and an economic replicability test relating to both markets. The notified analysis confirmed the incumbent's SMP status and proposed to confirm imposition of the full set of remedies. Finally, the authorities set out an economic replicability test to be carried out by EPT each year for its flagship products on the basis of all wholesale inputs. In respect of the VULA product, the Commission invited the ILR to ensure that the final measure would specify the features necessary to ensure access seekers' full control of the network. While welcoming the intention to support non-discrimination by introducing equivalence of input remedies, the Commission recalled the necessity of a concrete implementation roadmap and therefore urged the ILR to define key milestones for its achievement as well as consequences in cases of non-attainment. Furthermore, it voiced concerns about the potentially negative impact of the test design on the SMP operator's ability to further develop its business model, and invited the ILR to revisit it once stability in copper access prices had been obtained on the basis of an appropriate LLU cost model. In this context, it further urged the ILR to reassess the proposed price obligation for copper-based products in market 5 and to adopt a cost model in line with the Recommendation on consistent non-discrimination obligations and costing methodologies. Finding its overall approach to be stricter than the scenario set out in the Recommendation, the Commission called on the ILR to ensure continuous monitoring of market development and take action if the expected results did not materialise in the market within a reasonable time frame.

On 21 November 2014, the Commission registered a notification from the ILR, concerning the markets for (i) wholesale call termination on individual public telephone networks provided at a fixed location, and (ii) wholesale call origination on the public telephone network provided at a fixed location. With this notification, the ILR implemented the pure BU-LRIC model and defined the price caps to be imposed on all operators designated with SMP in its previous analyses of the markets concerned for the period 2014 to 2016. The Commission commented on the ILR's decision to replace the wholesale commercial costs estimate derived from the model with those based on operator data, noting, in particular, that the 75 % share of FTR was very high by EU comparison. It thus invited the ILR to amend its costing model on the occasion of the next revision. Moreover, it urged the regulator to consider an annual cost determination instead of the notified averaging approach.

On 21 January 2015, the Commission registered two notifications from the ILR concerning the retail market for the minimum set of leased lines and the wholesale market for leased lines in Luxembourg. Based on the retail market analysis for the minimum set of leased lines, the regulator considered the market sufficiently competitive and proposed to repeal the regulatory remedies previously imposed. The Commission did not issue any comments on this proposal. For the leased lines wholesale market, the ILR

included both trunk and terminating segments into the definition and found EPT to have significant power in that market. On this basis, it proposed continuation of the same remedies, but restricted their scope to terminating segments. The Commission, while disagreeing on the market definition, found that the regulatory outcome would have been identical as with a separate analysis of terminating and trunk segments since the ILR did not propose to regulate the latter. It thus considered that the ILR could adequately address the analytical issues identified in the next review of the wholesale market for leased lines by taking utmost account of its comments.

On 2 February 2015, the Commission registered a notification from the ILR concerning the market for access to the public telephone network at a fixed location for residential and non-residential customers, which is no longer contained in the Recommendation on Relevant Markets. Based on the three criteria test, the regulator deemed that the market could not be characterised as effectively competitive and thus proposed to impose regulatory remedies on EPT which it designated as SMP operator. These were to include, as previously, the full set of wholesale remedies — except for WLR on high capacity telephony lines, for which no wholesale offer had to be provided —, while all retail remedies were proposed to be withdrawn. The Commission recognised that the market share controlled by the SMP operator merited maintaining *ex ante* regulation for the duration of the review period, yet called on the ILR to ensure that developments impacting both retail and wholesale markets would be closely monitored to ensure continued proportionality of the remedies. Notably the increased use of VOIP/VOBB-based access, which could further pick up in strength due to a naked wholesale broadband access remedy having been imposed on EPT in August 2014, and the gradually increasing countervailing buying power of alternative operators were seen as factors potentially capable of moving the market towards effective competition. Accordingly, the Commission would request updates from the ILR at regular intervals in order to support efforts to maintain appropriate levels of regulatory pressure.

On 12 February 2015, the Commission registered a notification from the ILR concerning market for wholesale voice call termination on individual mobile networks. The notification described the pure BU-LRIC model that the ILR proposed for setting the termination price caps until the end of 2016. The Commission commented on the ILR's decision to choose a maximum value scenario for deriving the termination price cap and to exclude 4G technologies from network design considerations in the model. It further attached observations to the WACC estimation for mobile termination, the treatment of additional commercial costs and to averaging as a method for calculating the price cap for the entire reference period. On 23 March 2015, the Commission registered a letter from the ILR announcing adoption of the final measure in response to a judgment having annulled the transition benchmark adopted the previous year.

2.2. Access and interconnection

Between spring 2014 and spring 2015, concerned parties, including OTT operators, in Luxembourg did not identify any issues regarding access obligations or IP interconnection. There is no commonly agreed schedule for the migration of fixed networks towards an all-IP interconnection architecture, nor a specific monitoring obligation for the ILR towards interconnection agreements. The incumbent is already planning for IP migration and announced in February 2015 that consumer subscription requests for ISDN services would no longer be served.

Following public consultation, the regulator in August 2014 repealed its rules on the modalities and conditions for interconnection. The ILR publishes the specific access and interconnection obligations applied to SMP operators on its website subject to business confidentiality considerations.

3. BROADBAND PLANS AND FINANCING

With high cable penetration and a fully fibred backbone, Luxembourg is among the leading countries to fulfil the objectives of the Digital Agenda for Europe. At the end of 2013, Luxembourg was one of six countries in the EU that had achieved complete coverage of the national territory with high speed broadband access. This has been attained without operational changes to the national strategy. Developments are market-led, with the incumbent planning delivery of 1Gbps connectivity and there being developments in 2014 towards both consolidation and improved interconnection between cable networks. Deployment of FTTH is carried out solely by the incumbent without formal state aid at national or municipal level. Luxembourg has chosen not to use ESIF for ICT and broadband programming between 2014 and 2020.

In June 2014, the Government launched its *Digital Lëtzebuerg* initiative which links ongoing digitisation activities in order to make the country a ‘smart nation’. Connectivity through infrastructure development is a cornerstone of the initiative and the Government is well advanced in transposing the Cost Reduction Directive. An obligation to deploy active cabling in new buildings is being considered in this context, as is a change to the *Co-ownership Act* to facilitate agreement on the replacement of existing in-house wiring.

4. INSTITUTIONAL ISSUES

4.1. The National Regulatory Authority

The *Institut Luxembourgeois de Régulation* (Luxembourgish Institute of Regulation, ILR), a multi-sector regulator for the network industries, is the independent NRA vested with the main regulatory tasks. The *Ministère d’Etat (Service des médias et des communications)* intervenes in certain matters concerning broadcasting, spectrum and NGA deployment, including cost reduction measures. The ILR increased its staff by several persons in 2013 and 2014 to be able to respond to its recently acquired competence in the field of mediation as well as to the increasing complexity of regulatory tasks. Of its 57 employees, nine deal with electronic communications and nine with spectrum matters. The ILR is placed under the authority of the *Ministère d’Etat* for all matters relating to the nomination of its civil servants.

	2014
Personnel ⁷	57
Increase	2 %
Budget	€ 3.93 million
Increase	0 %
Administrative charges ⁸	€ 3.00 million

⁷ Number of staff in full time equivalents (fte).

Administrative costs ⁹	€ 3.00 million
-----------------------------------	----------------

The income of the ILR for all sectors in 2014 amounted to € 12.4 m, an increase by +10.7 % compared with € 11.2 m in 2013. As the operational result from frequency management is positive, the ILR transfers revenues from fees for the use of spectrum to the general State's budget after deduction of its charges for spectrum management. As the ILR's costs are integrally charged to the operators, its income corresponds to the related administrative costs. The ILR has an independent budget, over whose spending it exercises full control, and holds its financial accounts according to the rules of commercial accounting, subject to an independent external audit (*réviseur d'entreprises*).

The decisions of the ILR can be judicially reviewed by the Administrative Court. From the beginning of 2014 until the end of March 2015, the ILR adopted a total of 22 decisions, of which only one was challenged. The appeal, which concerned the setting of interim mobile termination rate price cap on the basis of a benchmark, was upheld by the Court that deemed the regulator not to have taken adequate account of the specificities of the domestic market.

The NCA, the *Conseil de la concurrence*, was reorganised in 2012. The ILR must obtain the NCA's prior agreement before adopting measures that would impact on the market. The NCA thus regularly provides comments on the draft measures proposed by the ILR. There is a mutual exchange of information before measures are adopted. In 2014, there were no cases in which the NCA opposed the adoption of the measures set forth by the ILR. The NCA did, however, finalise two procedures against the incumbent for abuse of its dominant position in electronic communications markets. While in June 2014, the authority decided to accept commitments by the incumbent to remove discriminatory tariffs for off-net relative to on-net termination from its mobile retail offers, it proceeded to fine the operator in November 2014 for bundled rebates that mobile competitors could not replicate (exclusionary bundling). This decision has been challenged by the incumbent operator before the Administrative Court.

4.2. Authorisation and licences

Information notified by operators registered under the general authorisation system is accessible via the regulator's website. In 2014, there were 148 notified operators compared with 142 in 2013.

Mobile operators express concerns about annually recurring fees for spectrum use, which they consider comparatively higher than in other Member States, and notably in bordering jurisdictions.

The EMF limits have been set for the entire national territory by the Ministry of Sustainable Development and Infrastructure (*Ministère du Développement durable et des Infrastructures*) at 3 V/m per radiating element, which is below the reference levels

⁸ In the sense of Art. 12 of the Authorisation Directive (Directive 2002/20/EC as amended by Directive 2009/140/EC).

⁹ Idem.

established by the 1999 Council Recommendation¹⁰. There were no cases in 2014 where municipalities exercised their power to apply stricter standards.

With regard to MSS services, both operators selected at EU level are authorised to provide services for the satellite component. So far, the country has not awarded any licences for complementary ground components, as no specific applications have been submitted. 2014 did not see any change in the state of affairs in this respect.

With regard to rights of use of numbers, the revised numbering plan of July 2014 allows only notified electronic communications providers to acquire numbering resources, including for VoIP services. In practice, no such notifications have been submitted from pure OTTs. Operators generally consider numbering fees appreciably higher than in surrounding jurisdictions.

4.3. Taxation

By regulation of December 2014, the ILR has fixed the administrative charges on operators to cover the regulator's administrative and regulatory costs as a combination of a fixed lump sum payment of € 2 500, a turnover-based contribution and a possible additional correction of 0.65 % of turnover. For each market in which an operator is active, it is required to pay an additional fixed lump sum of € 5 000. Excess charges are reimbursed to contributing operators.

In 2014, no other additional taxes have been imposed on electronic communications operators.

5. SPECTRUM MANAGEMENT

For rights to use spectrum, operators consider there generally to be sufficient amounts of spectrum available in the marketplace to facilitate deployment of advanced mobile communications services, including 4G. LTE services were first provided in the 1800 MHz band, but have now been extended to the 800 MHz band and parts of the 2.6 GHz band.

Rights of use assigned in the 800 MHz band have been brought into use within two years from the assignment in 2012, as prescribed, but operators are looking for more flexibility to fully deploy 2.6 GHz. The spectrum of the 800 MHz band is primarily designated to provide fast broadband access with national coverage.

In 2014, the Luxembourg authorities organised a public consultation to gauge interest in one lot of 2 x 15 MHz of unused spectrum in the 2.1 GHz band. In view of the levels of interest expressed and the forthcoming lapse of existing licences in the same band in 2017 and 2018, the Minister responsible concluded not to further pursue an award, but rather to assign the rights jointly at a later point in time.

In Luxembourg, terrestrial television broadcasting was already digitised in 2006. While the allocation of the 700 MHz band to broadcasting was confirmed in 2014, it is not currently in use. The band is likely to be assigned to International Mobile

¹⁰ OJ L 199, 30.7.1999, p. 59.

Telecommunications (IMT) services following WRC-15. As the band is still used for television broadcasting in that neighbouring country, Luxembourg entered into an agreement with Germany in 2014 to coordinate their uses of the 470-694 MHz and the 694-790 MHz bands. Similar work is ongoing with the other neighbouring countries.

6. RIGHTS OF WAY AND ACCESS TO PASSIVE INFRASTRUCTURE

The general authorisation regime provides notifying enterprises with rights of way on public land under the authority of the Government and municipalities. The majority of rights of way are granted at municipal level where the procedures can be lengthy and burdensome, even though national legislation limits the maximum period for receiving a permit to deploy a fixed network to 6 months. Municipalities ensure transparency regarding the procedures for granting rights of way through publication and occasional consultation with concerned residents. There is no bespoke body at the level of municipalities to coordinate local infrastructure works, but the Government since 2012 provides businesses with a national electronic register to facilitate joint exploitation where rights of way are being exercised.

Authorisation to deploy base stations for mobile networks is granted by different bodies depending on the location and the emitting power of the transmitter. There are no special procedures for small cell deployment. Due also to civic reservations about the potential health risks of mobile networks installations in town areas, procedures for antenna sites can become protracted, with reported durations of up to two years. The regulator maintains a publicly available electronic database of transmitter sites.

Access to passive infrastructure in Luxembourg is not mandatory, except for co-location in street cabinets. Access to publicly financed works is sometimes provided, while access to other utilities' infrastructure has to be sought at the stage of the planning permit procedure. The state-owned dark fibre operator deploys a fibre backbone using energy, railroad and highway infrastructure. The incumbent prefers to build its own ducts, which alternative operators have not been using so far.

Property owners control in-house infrastructure and there is no legal obligation to share it. The Government has since 2011 encouraged local authorities competent to issue building permits to make new construction projects contingent on the provision of multi-fibre wiring through a non-binding recommendation. Its 2013 Model Regulation for buildings further encourage municipalities to include in their regulations requirements for in-house wiring and use of the national register of works. Further legislative initiatives are being contemplated in the context of the transposition of the Cost Reduction Directive.

Concerning mapping, Luxembourg has not developed a complete passive infrastructure mapping covering telecommunication infrastructure. The regulator is tasked to create a database of infrastructures that can be used for fibre deployment. In 2014, the regulator published different coverage maps of NGA technologies.

The Government launched a mapping study on the broadband infrastructure in the economic activity areas and a more general study on very high speed broadband coverage and services mapping was finalised in January 2015.

7. CONSUMER ISSUES

7.1. The European emergency number 112

Luxembourgish residents are particularly aware of 112 and its availability not only at home (93 % compared with 58 % EU average), but across the EU (80 % compared with 41 %). In Luxembourg, the number provides access to all emergency services. Operations are coordinated centrally by one public safety answering point (PSAP) for the entire territory. End-users with hearing and speaking impediments can furthermore access emergency services in the Grand Duchy by both fax and SMS. The SMS service requires a mobile subscription with a Luxembourgish operator.

Operators originating fixed and mobile calls to emergency numbers, including the European emergency number, must automatically provide ('push') a set of information for identification of the caller and his location. In August 2014, the NRA adopted a decree which extended the range of emergency numbers exempted from the prohibition of third party surveillance and interception beyond 112 to also include several national emergency numbers, and made them subject to the same informational obligations. These obligations do not yet include specific criteria for caller location accuracy and reliability, nor has the NRA thus far acted to specify the format and the technical modalities for providing the required information.

7.2. Number portability

Porting of mobile numbers complies with the one day rule from the moment of the agreement between user and recipient operator thanks to a common platform, while fixed numbers require more time due to manual execution, including a technician's intervention at the MDF. The working groups established by the ILR to introduce necessary changes to the procedure for fixed number portability continued their work in 2014.

While the number of ported mobile numbers in 2014 remained largely stable, for fixed numbers the value was more than 10 per cent below that of 2013.

Number portability¹¹		2013	2014
Fixed	Number of transactions	3,157	2,821
	% of total numbers	1.2%	-
	Maximum wholesale price	0.0	0.0
	Maximum time under regulation (number of working days)	0	-
Mobile	Number of transactions	26,290	26,146
	% of total numbers	3.3%	3.1%
	Maximum wholesale price	7.0	7.0

¹¹ Source: Figures provided by Luxembourg to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe.

	Maximum time under regulation (number of working days)	1	1
--	--	---	---

7.3. Contractual obligations

Luxembourgish law appears not to transpose the maximum limitation on permissible commitment periods of 24 months. Providers of electronic communications must however inform users about the minimum periods required in order to benefit from promotions and the costs linked to contract termination, including the amortisation of terminal equipment. Offers by Luxembourgish operators do still rely on such contract models, notably when incentivising users to switch provider by bundling subscriptions with a device.

However, commitment periods do not seem to constitute a problem for subscribers whose major concerns are contractual terms, which are considered hard to understand, and a high number of competitive offers that make an informed choice more difficult. Action brought by a consumer association claiming unclear contractual terms of two of operators is pending before the court.

7.4. Other consumer issues

As a mechanism launched in 2012 to ensure tariff transparency and comparison, in 2013, 237 factsheets with information about retail offers were accessible via the ILR website. Providers who fail to provide updated information about existing, new or promotional offers are liable to be sanctioned. In April 2015, the regulator imposed a fine of € 10 000 for non-compliance.

58 requests pertaining to electronic communications were submitted to the regulator's mediation service in 2014, of which 39 were closed by year's end. The biggest number of these requests concerned mobile telephony, followed by fixed telephony and Internet access. Close to one fifth of requests concerned problems relating to several services. The majority of requests concerned special and premium rate calls and SMS, followed by requests concerning exceedance of mobile Internet allowance, excessive roaming charges, connection problems and malfunctioning of fixed Internet access.

8. UNIVERSAL SERVICE

Without formal designation and financing by the sector, the incumbent provides universal service on a voluntary basis. This practice has not been challenged by other electronic communications providers. Internet access, telephony services, directory enquiry services and directories and public pay telephones and other public voice telephony access points are provided in line with the law.

9. NET NEUTRALITY

9.1. Legislative situation

After parliamentary debates in 2012 and 2013 calling onto the Government to explicitly enshrine net neutrality into law, the new Government coalition in its governmental programme of 2013 expressed its support for finding a solution at EU level, while

retaining the possibility of a national legislative initiative, with implementing powers to be left to the ILR. In 2014, no such proposal has been tabled.

9.2. Quality of service

Under Luxembourgish law, there is no obligation for the NRA to define or monitor quality of service specifications for Internet access. However, service providers are held to specify minimum quality of service levels vis-à-vis subscribers and details on compensation schemes in cases of failure to deliver these. Furthermore, the NRA may require providers of publicly accessible electronic communications services, including Internet access services, to publish quality of service information for end-users. While the NRA has not thus far made use of this power, the incumbent publishes on a voluntary basis an annual report on the quality of its fixed telephony services. The ILR itself does not monitor quality of service, but operators publish KPIs. In 2014, there were no customer complaints indicating that operators block P2P or VoIP.

Malta

1. MARKET DEVELOPMENTS

Broadband indicators (December 2014)¹	MT 2013	MT 2014	EU 2013	EU 2014
Fixed broadband coverage ²	100%	100%	97%	97%
NGA coverage ²	100%	100%	62%	68%
Fixed broadband take-up ²	78%	79%	69%	70%
Share of >30Mbps subscriptions ³	14%	55%	21%	26%
Share of >100Mbps subscriptions ³	1%	1%	5%	9%
Share of DSL in fixed broadband ³	49%	49%	73%	70%
Incumbent market share fixed broadband ⁴	48%	49%	42%	41%
HSPA Mobile broadband coverage ²	100%	99%	97%	97%
LTE Mobile broadband coverage ²	0%	67%	59%	79%
Mobile broadband penetration ⁵	57%	57%	64%	72%
Market share of leading mobile network operator ⁴	49%	44%	35%	35%

The telecoms sector in Malta is dominated by three companies: GO (fixed telephony incumbent), Melita (cable TV incumbent) and Vodafone (mobile telephony incumbent). The Maltese market has unique characteristics, with two nationwide competing fixed access infrastructures, three mobile networks and an unregulated wholesale broadband access market due to the similar market positions of GO and Melita. Bundled offers are on the rise with GO and Melita increasingly competing with quad-play offers.

Given that broadband speeds of up to 100Mbps are provided on a nationwide scale, Malta has already achieved the first two of the Digital Agenda for Europe (DAE) targets related to broadband, i.e. 100% basic broadband coverage by 2013 and 30 Mbps broadband coverage by 2020.

¹ Sources: coverage data — studies by IHS and VVA; penetration data — figures provided by Malta to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe (except fixed broadband take-up, provided by Eurostat).

² % of households.

³ % of fixed broadband subscriptions.

⁴ % of subscriptions.

⁵ Subscriptions per 100 inhabitants.

Fixed broadband coverage is nationwide. The fixed broadband penetration continues to grow reaching over 148 000 lines in Malta by July 2014. Fixed broadband penetration (lines per 100 inhabitants) in Malta increased by 1.1 percentage points over the past twelve months and reached 34.9 % in July 2014 which was above the EU average of 30.9 %. More than half (55 %) of fixed broadband subscriptions are now above 30Mbps.

On the fixed broadband market GO and Melita slightly increased their collective market share by 1.5 percentage points owning 98.4 % whereby Melita (cable TV incumbent) has further grown its market share and is leading with 49.5 %, followed closely by GO (fixed incumbent) with 48.9 % by end Q2 2014. In the fixed broadband market, consumer choice is effectively limited to offers by those two operators. Vodafone stopped marketing its service in 2011 but still provides fixed wireless broadband, building its own infrastructure to larger companies if necessary over its 4G network.

GO operates a nationwide copper network which over the past years has been upgraded to FTTC in the majority of areas. Throughout 2015, and in subsequent years, GO plans to continue with the deployment of its FTTH network starting with the areas which are the most commercially attractive.

Melita provides broadband connections with download speeds from 30Mbps (upload 1.5 Mbps) to 250Mbps (upload 20Mbps) over its cable infrastructure. Melita is also offering a mobile data product based on wifi, utilising both its hot-spots in main public areas and home modems re-programmed to provide mobile data coverage to Melita mobile subscribers.

Independent ISPs also provide broadband using a number of different infrastructures. For instance, Ozone and Vanilla Telecoms use wireless technologies, while SIS Ltd provides services over its own hybrid fibre-coaxial network deployed exclusively in the Tigne area (private gated community). The Malta Information Technology Agency (MITA), which is the Government's own ISP, provides broadband connections to Government entities and has wholesale agreements with both Melita and GO.

In the mobile market, Vodafone remains the leading operator in terms of market shares. However, over the last year, Vodafone lost 4.6 percentage points holding 44.4 % market share of the mobile market in the third quarter of 2014, followed by GO with its increased market share of 39.4 %. Since Melita entered the market in 2009, its market share continues to grow reaching a market share of 14.4 % in the third quarter of 2014. Due to this market entry, the average per minute rate of a domestic call has considerably decreased. In October 2013, Vodafone launched the first — and currently only — 4G commercial service in certain areas of Malta with the intention to provide nationwide coverage later on. In January 2015, Vodafone's 4G coverage approached 70 % of the population⁶. In March GO announced that it will be launching its 4G product during 2015

In the fixed voice market, GO and Melita remain the largest operators in terms of subscribers collectively sharing 99.4 % of the market.

⁶ Source: <https://www.vodafone.com.mt/Vodafone-news-details/1926>.

Fixed access connections have been declining year-on-year albeit at a very slow pace. This indicates that Maltese customers still value having a fixed access connection at home. The incumbent (GO)'s market share for fixed direct access lines remains close to 70 %.

On the other hand fixed minutes and calls have been declining steadily and at a significant rate over the past few years. In Q3 2014, 57% of all voice calls were originated over mobile networks. Similarly mobile minutes have largely exceeded fixed originated minutes. As mobile prices continue to fall this trend is likely to continue with increased fixed-to-mobile substitution, at least in terms of usage compared with subscriptions.

While the take-up of social media and online streaming had a positive impact on the demand for higher broadband speeds, no major decline in the demand for traditional voice services or TV has been recorded. So far OTT services are being used as a complement to traditional electronic communications services.

2. MARKET REGULATION

2.1. Market analysis

Concerning ex-market 4 (of the 2007 Recommendation) on the wholesale unbundled infrastructure access, GO has been found to have SMP and has an obligation to provide access to the copper network via LLU and SLU. The relevant reference offer has been in place for a number of years.

With respect to the new FTTH network that is currently being deployed by GO, the MCA mandated access via a virtual solution given that unbundling is currently not feasible for a GPON fibre network. GO have appealed the decision of the MCA before the Administrative Review Tribunal. In March 2015, the Tribunal decided in favour of the MCA; following which GO appealed the decision of the Tribunal before the Court of Appeal. In the interim the original decision of the MCA remains effective in its entirety. The virtual solution remedy on FTTH is currently being developed and a public consultation on '*Virtual Unbundled Access to Fibre-To-The-Home: Implementing the VULA Remedy*' has been published on 15 April 2015⁷.

In its final decision on the third round of the retail access to the public telephone network at a fixed location (ex-market 1) published on 8 April 2015, MCA concluded that the market can be fully deregulated since no operator holds significant market power⁸.

The decision of the Administrative Review Tribunal concerning the second round of retail access to the public telephone network at a fixed location (ex-market 1) lodged by GO was decided in favour of the latter. However the MCA appealed the decision of the Tribunal and is currently *sub-judice* before the Court of Appeals.

⁷ <https://www.mca.org.mt/consultations/virtual-unbundled-access-fibre-home-implementing-vula-remedy>.

⁸ <https://www.mca.org.mt/service-providers/decisions/decision-retail-access-public-telephone-network-fixed-location>.

Vodafone's appeal against the MCA decision on ex-market 7 (Wholesale Termination on mobile networks) applying a Pure BU-LRIC-based approach is pending before the Administrative Review Tribunal.

In 2015, the MCA plans to review the wholesale fixed call origination market and the wholesale high-quality access market provided at a fixed location (market 4 under the 2014 Commission recommendation on relevant markets).

Between January 2014 and February 2015 the following regulatory decisions were taken by the MCA: Itemised billing in Q1/2014; Bottom-up cost model for mobile networks and mobile interconnection pricing (Q1 / 2014); Definition, assessment of competition and regulation of mobile voice call termination markets in Malta (Q1 / 2014); Definition, assessment of competition and regulation of fixed call termination on individual public telephone networks in Malta (Q2 / 2014); Fine to Melita following a case of non-compliance with its termination procedure (Q3 / 2014); Amendment to licences for the rights of use of radio frequencies in the 2.1 GHz band to introduce new technologies (Q3 / 2014); Assignment process for additional spectrum for wireless broadband (Q3 / 2014); Review of GO's application for funding of the USO net cost claimed to have been incurred during 2010 (Q4 / 2014); decision on complaint by Melita on alleged breach by GO of the MCA's regulatory decision entitled 'Pricing of Leased lines and Ethernet Connections' (Q4 / 2014); decision on fine to Melita for non-compliance with subscriber termination procedure requirements (Q4 / 2014) and decision on retail fixed access market.

2.2. Access and interconnection

As in Malta there are no separate reporting obligations for operators with regards to the IP voice interconnection market and the functioning of IP voice interconnection agreements, no IP interconnection agreements were notified.

In 2014, a new operator (Vanilla) requested interconnection with network operators. Since SS7 is the standard protocol, it chose to transit calls through a third party (SIS).

So far, there are no immediate plans for the mandatory migration of fixed networks towards voice IP interconnection architecture although operators may do so under commercial agreement.

3. BROADBAND PLANS AND FINANCING

The national ICT Strategy 'Digital Malta'⁹ launched in 2014 aims to transform Malta into a digitally-enabled nation. One of the objectives is also to facilitate the deployment of Next Generation Access networks in Malta which is considered to be critical for the attainment of the third DAE target.

Malta is considering the use of EU funds to deploy a submarine cable to mainland Europe / North Africa. The MCA is embarking on a detailed technical, economical, and financial feasibility study for a new submarine cable connecting Malta to other

⁹ www.digitalmalta.gov.mt

alternative locations with the objective of enhancing the resilience and quality of the current international electronic communications connectivity. The aim of the study is to identify the best strategies for deployment and compare the various models and recommendations for the optimal technical, commercial and financial solution. The study is being financed by Technical Assistance funds from the European Regional Development Cohesion Fund.

4. INSTITUTIONAL ISSUES

4.1. The National Regulatory Authority

The Malta Communications Authority (MCA) is the independent NRA in terms of the Electronic Communications Framework and is vested with the main regulatory tasks. Besides that, the MCA regulates eCommerce and the postal sector, and is also responsible for elements of the national ICT strategy such as eInclusion, Internet safety and Internet governance.

There were no changes with regard to the status of the MCA.

The MCA deals with consumer complaints related to provisions of contracts, provision of information before, upon, or after entering into a contract, measures to facilitate the switching of operators, quality of service and various other instances where operators have an obligation in accordance with the laws administered by the MCA to provide certain facilities or services to subscribers. When the MCA receives complaints which do not fall within its remit (e.g. misleading advertising, unfair contractual terms, unsolicited commercial communications and unfair commercial practices), these are referred to the Malta Competition and Consumer Affairs Authority (MCCAA) established in 2011. Before dealing with a particular complaint both authorities require the consumer to indicate whether he/she has contacted another body with respect to the same issue. In those few cases where a consumer does contact both MCA and MCCAA, before initiating the necessary investigations the authorities contact each other to determine which entity will be taking responsibility and inform the consumer accordingly. Consumers may also file a claim before the Consumer Claims Tribunal which is empowered to determine disputes between consumers and traders.

Due to a change of Maltese law in 2014, all pending thirteen cases before the former Telecommunications Appeals Board and the former Communications Appeals Board which were transferred for continuation before the Administrative Review Tribunal. In the first quarter of 2015, 8 of these cases were withdrawn by appellants, whereas 5 cases remain pending.

	2014
Personnel ¹⁰	74
Increase	+1.37 %
Budget	€ 5.22 Million
Increase	+3.9 %
Administrative charges ¹¹	€ 3.23 Million

¹⁰ Number of staff in full time equivalents (fte).

Administrative costs ¹²	€ 2.8 Million
------------------------------------	---------------

4.2. Authorisation and licences

In 2014, the validity of the licence for the rights of use of radio frequency spectrum for the establishment and operation of a terrestrial digital audio broadcasting (T-DAB) network was extended until 22 March 2022.

Each of the selected MSS operators was granted a licence for the use of radio frequency spectrum for the provision of mobile satellite services. Solaris Mobile's licence was granted in 2012, while Inmarsat Ventures licence in 2015.

In the context of other budget measures, the government increased excise tax on mobile telephony services from 3 to 4 % in 2014.

5. SPECTRUM MANAGEMENT

Concerning the 800MHz band, the Commission granted a derogation for the actual use of the spectrum due to cross-border frequency coordination problems. To free the replacement channel for the 800 MHz band from broadcasting activities, Malta conducted and concluded the international coordination process with two neighbouring countries in 2014, while the necessary coordination with two North African countries have still not been concluded. It should be noted that the replacement channel is still experiencing harmful interference caused by Italian transmissions.

In September 2014 MCA published its decision on the methodology for the assignment of additional spectrum for wireless broadband (800 MHz, 1800 MHz and 2.5 GHz bands)¹³. No appeals were filed. A request for spectrum from an interested party will trigger the assignment process.

The UHF Band is currently used by GO for its terrestrial television operations. The future usage of the 700 MHz band is not part of any political discussion at the moment.

In July 2014, MCA published its decision on licences for the rights of use of radio frequencies in the 2.1GHz band to introduce new technologies. As a result, licensees may now deploy new technologies, such as LTE, in this band.

In February 2015, MCA published a revised national frequency plan¹⁴. The main purpose of the revisions was to (i) align national allocations with the latest ITU Radio Regulations, (ii) implement the EU Commission Implementing Decisions 2013/654/EU (mobile communications services on aircraft), 2013/752/EU (radio spectrum for use by short-range devices), 2014/641/EU (usage of wireless audio programme making and special events equipment), 2014/702/EU (equipment using ultra-wideband technology), as well as (iii) allocate a new frequency range in the 70 MHz band to the radio amateur service on a secondary basis.

¹¹ In the sense of Art. 12 of the Authorisation Directive (Directive 2002/20/EC as amended by Directive 2009/140/EC).

¹² Idem.

¹³ <http://www.mca.org.mt/sites/default/files/attachments/decisions/2014/MCA-Decision-800-final.PDF>.

¹⁴ <http://www.mca.org.mt/national-frequency-plan>.

6. RIGHTS OF WAY AND ACCESS TO PASSIVE INFRASTRUCTURE

Permits for road works are being processed via an automated electronic system operated by Transport Malta. All decisions are explicit and made public.

The process states that should an interested party forward an objection following a justifiable reason, the consultation period will be extended from 10 days to a further 45 days. During this period, the permit is to remain on hold until an agreement for the way forward is reached between the project owner and the objecting entity. Should the objection period expire before an agreement is reached, the application will be invalidated.

Concerning rights of way over private property, MCA has not received any reports of discriminatory treatment or abusive conditions.

With regard to the Directive 2014/61/EU on measures to reduce the cost of high speed broadband deployment, MCA and Transport Malta are advising the Government on its transposition with the objective of bringing down costs and enhancing the efficiency of rolling out high speed broadband networks. A widespread consultation with various government entities is being carried out and a public consultation will take place later in 2015.

7. CONSUMER ISSUES

7.1. The European emergency number 112

112 is the only emergency number in Malta. The call centre is currently being hosted by the Malta Police who have embarked upon a total quality management approach, where the benchmarks are set for 0-10 seconds to take the call.

The 112 emergency number awareness raising campaigns continue as in previous years (e.g. posters placed in points of entry (airport/seaport) and public transport hubs and vehicles).

7.2. Number portability

Number portability ¹⁵		2013	2014
Fixed	Number of transactions	1,659	1,775
	% of total numbers	0.7%	0.8%
	Maximum wholesale price	3.5	3.5
	Maximum time under regulation (number of working days)	1	1
Mobile	Number of transactions	41,321	26,525
	% of total numbers	7.4%	4.7%

¹⁵ Source: figures provided by Malta to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe.

	Maximum wholesale price	2.3	2.3
	Maximum time under regulation (number of working days)	1	1

The number portability process set up by the MCA provides the subscriber with a transparent, one-stop-shop procedure and allows the porting process within 1 day, with no loss of service at any point in time during the switching process. A number of provisions are incorporated within this process which safeguards the donor and recipient operators as well as the subscriber. The number portability process requires, among others, that a porting request is rejected in the event that the subscriber making the request has not settled all his bills with the donor operator.

7.3. Contractual obligations

There were no changes to the legal framework on contractual obligations in 2014 in Malta. Subscribers have the right, at any time, to terminate their contract through simple means, subject to any prior notice not exceeding one month. Any unutilised advance payment or deposit on terminal equipment shall, at no extra charge, be promptly refunded to the subscriber upon termination. In addition, no termination charges shall apply with respect to contracts that have been renewed after an initial contract period has expired.

7.4. Other consumer issues

In Malta, consumer protection rules remained unchanged over the reporting period under the active supervision of the MCA¹⁶.

In 2014, the consumer complaints filed with MCA and MCCA concern billing (unclear and/or unjustified charges, fees imposed in relation to billing mediums and payment methods), contracts (predominantly related to the termination of services) and sales and quality of service issues. The latter related mostly to faults with fixed telephony, TV and internet services. In those cases investigated by the MCA where it was evident that the fault was not caused by force majeure, subscribers were provided with the applicable compensation/refunds.

The majority of consumer complaints concern one particular operator only. A number of the complaints to this operator were due to important changes in its billing system. In reaction to complaints on termination and disconnection of service procedure received between May and September 2014, MCA imposed administrative fines against Melita who appealed against the decision.

In May 2014, MCA published its Mobile Data Usage Survey¹⁷. The survey consisted of interviews carried out over the phone during February and March 2014 with the intent of obtaining information about the use of mobile data services by the general public. The interviews were proportionately representative of the actual Maltese population by age.

¹⁶ More details of past initiatives can be found in the country chapter from last year: <http://ec.europa.eu/digital-agenda/en/news/2014-report-implementation-eu-regulatory-framework-electronic-communications>.

¹⁷ <https://www.mca.org.mt/surveys/mobile-data-usage-survey-2014>.

In January 2015, MCA published the results of a survey carried out in 2014 in order to explore perceptions of the business community by gathering qualitative information on electronic communications services in Malta. To capture these perceptions a number of variables have been analysed, namely the level of satisfaction, price sensitivities, service levels and areas of concern among the business community¹⁸.

In February 2015, MCA published the results¹⁹ of another survey carried out last year. The results capture more qualitative information on medium to large sized businesses and investigate the use of high-quality data services within the business community.

In April 2015, MCA published its decision on the wholesale access to data and the provision of publicly available directory information services following a prior consultation in July 2014. It clarifies the consent requirements by subscribers to make their personal data available for directory information services and lists the prerequisites for authorised directory information service provider to request telephony providers to share this data for directory information services²⁰.

8. UNIVERSAL SERVICE

Since 2010, GO had been designated as the undertaking offering all universal services listed in the Universal Service Directive.

In November 2014, the MCA published a new public consultation on the review of universal service obligations and subsequent designation of responsible providers²¹. The consultation proposed that the provision of access at a fixed location, the electronic comprehensive directory, public payphones, the provision of specific measures for disabled users, reduced tariff options and measures enabling users to control expenditure, are maintained.

The consultation also proposed changes in the obligations related to directories and directory services. The MCA had carried out an extensive analysis to identify whether to retain or withdraw the printed directory as a universal service, taking into consideration the provision of an electronic comprehensive directory available to the general public free of charge, and the provision of directory enquiry services. This study included the commissioning of a public survey which clearly indicated that, due to alternative directory services and new technologies, the need for such a directory has decreased substantially. To this effect, the consultation proposed to withdraw the printed telephone directory as a universal service, while proposing the introduction of a smartphone app to enable end-users to search both fixed and mobile telephone numbers. This development would not exclude entities willing to publish such a printed directory on a voluntary commercial basis in the future.

¹⁸<https://www.mca.org.mt/service-providers/surveys/business-perception-survey-results-electronic-communications>.

¹⁹<https://www.mca.org.mt/surveys/medium-large-business-perception-survey-results-electronic-communications>.

²⁰<https://www.mca.org.mt/decisions/decision-wholesale-access-data-and-provision-publicly-available-directory-information>.

²¹<http://www.mca.org.mt/service-providers/consultations/consultation-universal-service-obligations-electronic-communication>.

In October 2014, MCA published a decision²² on the first USO financing claim made by GO for 2010, which included a summary of the auditor's findings. Following a consultation the MCA published on 2 April 2015 a decision on the source of funds determining that the net costs for the provision of the universal service elements for 2010 shall be financed by public means²³.

9. NET NEUTRALITY

9.1. Legislative situation

There is no legislation in place specifically relating to net neutrality, nor any self-regulatory initiatives in place. To date there have been no known net neutrality issues in the local market.

9.2. Quality of service

In January 2015, MCA published a consultation paper 'Broadband QoS Framework — Data Formatting' proposing to harmonise how ISPs are to communicate and publish quality of service (QoS) information to their subscribers.²⁴ The consultation paper proposes that ISPs publish the QoS results in a format which is easy to understand and follow by subscribers. The objective is to reduce the gap between the service offered in the contractual terms and the actual performance experienced by the user when connecting to the network and using the service.

The MCA decision²⁵ from 2013 on a quality of service framework for broadband internet services is actively and closely monitored by the MCA.

The MCA carries out a consumer perception survey every two years, which among other areas captures consumer satisfaction with broadband services. The latest survey was carried out during 2013. It is envisaged that this survey will be repeated during 2015.

²²<http://www.mca.org.mt/service-providers/decisions/decision-review-go-plcs-application-funding-uso-net-cost-claimed-have>.

²³<https://www.mca.org.mt/service-providers/decisions/decision-source-funding-net-cost-incurred-providing-universal-services>.

²⁴<https://www.mca.org.mt/consultations/broadband-qos-framework-data-formatting>.

²⁵<http://www.mca.org.mt/consumer/decisions/broadband-internet-quality-service-framework>.

Netherlands

1. MARKET DEVELOPMENTS

Broadband indicators (December 2014)¹	NL 2013	NL 2014	EU 2013	EU 2014
Fixed broadband coverage ²	100%	100%	97%	97%
NGA coverage ²	98%	98%	62%	68%
Fixed broadband take-up ²	-	-	69%	70%
Share of >30Mbps subscriptions ³	42%	46%	21%	26%
Share of >100Mbps subscriptions ³	9%	16%	5%	9%
Share of DSL in fixed broadband ³	47%	45%	73%	70%
Incumbent market share fixed broadband ⁴	42%	41%	42%	41%
HSPA Mobile broadband coverage ²	99%	100%	97%	97%
LTE Mobile broadband coverage ²	90%	100%	59%	79%
Mobile broadband penetration ⁵	64%	66%	64%	72%
Market share of leading mobile network operator ⁴	-	-	35%	35%

Further consolidation took place on the Dutch market throughout the reporting period. In October 2014, the acquisition of Ziggo, a cable company operator, by its competitor UPC (Liberty Global) received clearance and KPN (the incumbent operator) was allowed to acquire the remaining shares of Reggefiber, a dark fibre operator. This led to a situation where two comparable operators, with nationwide fixed infrastructure, compete on the Dutch triple-play market. As regards broadband, the market shares of KPN and Ziggo are stable and similar, with the combined market share of alternative operators between 5 and 10 % and slightly decreasing. On the television market, KPN has an increasing share (from 15-20 % in 2011 to 25-40 % in 2014) and Ziggo, while still market leader, a decreasing one (from 60-70 % in 2011 to 55-60 % in 2014). Inversely, KPN's position in the fixed telephony market is decreasing (from 55-60 % in 2011 to less than 50 % in

¹ Sources: coverage data — studies by IHS and VVA; penetration data — figures provided by the Netherlands to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe (except fixed broadband take-up, provided by Eurostat).

² % of households.

³ % of fixed broadband subscriptions.

⁴ % of subscriptions.

⁵ Subscriptions per 100 inhabitants.

2014), while Ziggo has increased its market share (from 30-35 % in 2011 to 40-45 % in 2014).

The popularity of bundled services increased the rate at which the market shares of the copper incumbent and the cable incumbents are converging towards each other. While currently competition is taking place between triple-play offers, in the future quadruple-play (including mobile) will become more important. According to a consumer survey undertaken at the beginning of 2014, only 7 % of the respondents had an internet only subscription, with the rest having packages which included television and/or voice as well. According to the same survey, internet is the most important component of a bundled offer (according to 56 % of consumers), followed by television (according to 31 % of consumers).

There is no evidence for fixed-to-mobile substitution. Most operators on the Dutch market consider that it is important to offer both services. Throughout the past year, Vodafone continued its expansion in the fixed market, by investing in unbundling of the fibre, further to the previous acquisition of the fibre provider Wiericke. KPN and Eurofiber are the main wholesale fibre providers in the Netherlands. Tele2, a fixed operator in the Netherlands who had started offering mobile services as one of the country's 71 MVNOs (which account for 19.4 % of the mobile market), announced that it would start rolling out its own network, based on a 4G site sharing agreement signed with T-Mobile in August 2013.

The incumbent operator KPN retained a share of 55-60 % on the retail market for business connectivity services at the end of Q3 2014, in spite of the slight decrease. The two largest competitors, Eurofiber and Tele2, had market shares of 10-15 %. In particular in the fixed telephony, in the market for 2-12 lines, competition is very limited, with KPN having a dominant position (80-85 %). The market for more than 12 lines is getting more competitive: KPN has a market share of 40-45 % and Tele2 of 25-30 %.

As regards the impact of VoD or OTT services, penetration rates/uptake of telephony and/or television services has not been influenced significantly by the introduction of VoD and OTT-telephony. Yet the number of minutes called (fixed and mobile) has declined slightly and the number of SMS has declined dramatically. Both VoD and OTT services are likely to have pushed forward internet speeds (e.g. Netflix communicates periodically on the speeds of operators). In particular, the mobile market faces capacity issues. Therefore operators have upgraded their network to 4G and are also deploying fibre for their backbone network. In addition, some operators are offering WIFI spots to unburden their mobile networks as much as possible. Moreover OTT video content providers put pressure on operators by offering services at cheaper rates than traditional premium content channels. Vertical agreements involving OTT players are noticed both from the side of network operators (e.g. KPN — Spotify, T-Mobile — Deezer, Vodafone — Napster) and from the side of broadcasters (e.g. RTL purchase of Videoland).

As far as the state of play of high speed broadband roll-out is concerned, FTTH passes currently about 30 % of the households, out of which about a third are active connections. KPN's target is to offer to more than 90 % of the Dutch households speeds above 100 Mbps in 2016, both by rolling out fibre and investing in upgrades of the copper network. Ziggo currently offers speeds of 200 Mbps with more than 90 % coverage in The Netherlands.

Furthermore, there are four operators rolling out (or having rolled out) LTE networks. KPN has reached full coverage (98 %) in April of 2014 and has started upgrading its LTE network to LTE-Advanced in the third quarter of 2014. Vodafone has reached full coverage (95 %) at the end of September of 2014. The roll-out of T-Mobile's network is slower because T-Mobile only has high-frequency spectrum and also because it decided to offer higher speeds than KPN and Vodafone from the start. Tele2 plans to achieve national coverage in March of 2015 and to start commercial offers in the spring of 2016, based on higher speeds than KPN and Vodafone.

2. MARKET REGULATION

2.1. Market analysis

The Dutch National Regulatory Authority, *Autoriteit Consument en Markt* (ACM), continued the new round of market reviews in 2014. So far, a decision addressing a previous annulment has been adopted concerning fixed telephony 2012-2015 and a draft decision concerning the market for local wholesale fixed access over copper and fibre-to-the-home (FTTH).

The decision for fixed telephony (NL/2015/1710) concerns the market for retail access to the public telephone network provided at a fixed location for residential and non-residential customers (corresponding to ex market 1 in the 2007 Recommendation) and the market for wholesale call origination on the public telephone network provided at a fixed location (corresponding to ex market 2 in the same Recommendation). These markets were previously already assessed by the Commission under case NL/2012/1306, where ACM identified three national retail and wholesale markets: (i) single calls market, (ii) dual calls market and (iii) multiple calls market. On the basis of the three criteria test, only the retail market for single calls was excluded from regulation. ACM therefore imposed a full set of remedies on KPN on the dual and multiple calls markets. The decision was however partially reversed by the Dutch Appeals Tribunal, the *College van Beroep voor het bedrijfsleven* (CBb), which ruled in September 2014 that ACM had not sufficiently motivated the market definition for the market for dual calls. CBb also required ACM to undertake an entire SMP analysis concerning KPN's position on the retail market for single calls. In the 2015 decision, ACM reaches the same conclusions, following further justification of the findings. All the obligations are left in place. The Commission had no comments to this decision.

The draft decision concerning the market for local wholesale fixed access over copper and FTTH — which in the Netherlands is defined separately from the fibre to the office (FTTO) market — corresponding to the local access market (3a) in the 2014 Recommendation on relevant markets, has been notified to the Commission on 31 March 2015. The draft measure had been released for national consultation on 31 October with the conclusion that there was a risk of SMP of KPN on the retail markets for fixed telephony and business connectivity services in absence of regulation. Furthermore, ACM identified a risk of joint dominance between the incumbent KPN and Liberty Global's Ziggo in the provision of broadband at retail level. ACM defined the relevant wholesale market as containing copper and FTTH, while excluding cable networks due to the impossibility of providing local access that is substitutable to KPN's copper and FTTH-offer. Therefore, ACM proposed a full set of access obligations on KPN including price control. As far as the FTTH access is concerned, ACM imposes equivalence of inputs and maintains price cap price regulation (fully distributed costs methodology) on

KPN. With respect to copper networks, ACM continues the price control measure (safety cap) for MDF-access. With respect to the new form of virtual access (VULA), ACM will only develop a new costing model if the current negotiations between KPN and the access seekers on access conditions for VULA fail.

In the ongoing national court proceedings regarding mobile and fixed termination rates, the CbB ruled that it did not have sufficient information to close the case and sent on 13 January 2015 a request for preliminary ruling to the Court of Justice of the European Union. These national proceedings follow the adoption by ACM on 5 August 2013 of a decision imposing pure BU-LRIC rates for mobile and fixed termination rates, in spite of a previous judgment of CbB dated August 2011 where CbB expressed doubts on the compatibility of the pure BU-LRIC methodology with Dutch law. In imposing pure BU-LRIC rates, ACM had followed the Commission's previous comments under Article 7a of the Framework Directive and the Termination Rates Recommendation. An interim decision on 27 August 2013 ruled that the old (BU-LRIC plus) rates would be reinstated until CbB's judgment.

The national court case regarding the 2012 decision on High Quality Wholesale Broadband Access and Leased Lines (HQWBA) is still pending. Meanwhile, a new round of draft decisions on the FTTO and HQWBA markets are being expected at the end of 2015.

Furthermore, ACM should start a new termination rates analysis in the second half of 2015 or else extend the regulation based on the 2013 decision. Later this year ACM should also review the downstream central access market (market 3b of the 2014 Recommendation).

2.2. Access & interconnection

Interconnection agreements are not notified in the Netherlands. During the past year, no issues were reported regarding access obligations or IP interconnection.

However the approval of the merger of UPC and Ziggo included a remedy affecting IP interconnection. Liberty Global committed to ensure that it maintains at least three uncongested routes into its network in the Netherlands, in order to provide sufficient interconnection capacity for its broadband customers to access OTT services via specific interconnect points. More precisely, the daily peak utilisation across its interconnection points with a group of at least three reputable interconnectivity providers over which traffic may flow to broadband customers will not exceed 80 %, thus that at least 20 % capacity will be available above the daily peak.

The migration of voice interconnection from PSTN to IP is a market-driven, relatively slow process that is still in its early stage. No calendar exists but ACM estimates that this process will continue for at least four years before the migration is complete.

3. BROADBAND PLANS AND FINANCING

The Dutch Digital Agenda runs over the period 2011 and 2015 and, while in line with the Digital Agenda for Europe, focuses on ICT in support for innovation and growth. Within this agenda the national policy on broadband is specified. There is no separate plan on broadband, but it is integrated in the national digital agenda. In this agenda it is noted that

90 % of the Dutch households already has access to minimum 100 Mbps. Thanks to the national coverage of satellite and/or a mobile network almost 100 % of the Dutch population has access to a broadband network.

The achievement of the targets of the Digital Agenda is mainly due to investments by telecom operators in a competitive environment. Nevertheless rolling out fixed next generation networks in rural areas is still considered a challenge, given the lack of commercial interest from operators as well as the limited funding available. The Minister of Economy announced in July 2014 that neither European nor national funding would be available in the upcoming period to offer direct subsidies supporting the roll-out of broadband networks. Indeed no European Structural and Investment Funds have been committed to broadband deployment over the 2014-2020 period. It appears however that certain regional and local bodies would be able to offer financing for broadband, once state aid issues are cleared.

Moreover, public (risk sharing) money to fill the funding gap is also scarce. In view of this, the Netherlands assesses positively the risk-baring capital within EFSI, considering that it will help investment in next generation networks roll-out in rural areas.

4. INSTITUTIONAL ISSUES

4.1. The National Regulatory Authority

ACM (*Autoriteit Consument en Markt*) is vested with the main regulatory tasks assigned by the regulatory framework, while the Ministry of Economic Affairs and the Radio communications Agency (*Agentschap Telecom*) are responsible for spectrum management. ACM was created as a result of a merger between the former Competition Authority, the former telecom regulator (OPTA), and the Consumer Authority. The new organisation has been operational since 1 April 2013.

	2014
Personnel ⁶	498
Increase	n/a ⁷
Budget	€ 68 Million
Increase	n/a ⁸
Administrative charges ⁹	€ 8.3 Million
Administrative costs ¹⁰	€ 7.3 Million

ACM is an independent administrative body under the supervision of the Minister of Economic Affairs. The Commission had raised concerns regarding the implementation of the independence requirements of the regulatory framework in the context of the merger, and in particular regarding an initially foreseen power of the Minister to annul certain

⁶ Number of staff in full time equivalents (fte).

⁷ Due to the establishment of ACM in the course of 2013, there are no annual totals for that year to which the data for 2014 could be compared.

⁸ Due to the establishment of ACM in the course of 2013, there are no annual totals for that year to which the data for 2014 could be compared.

⁹ In the sense of Art. 12 of the Authorisation Directive (Directive 2002/20/EC as amended by Directive 2009/140/EC).

¹⁰ Idem.

decisions by the ACM. An amendment of the ACM Establishment Law was adopted in August 2014, which excludes this power from being applied to the electronic communications sector. In November 2014, the Dutch legislature repealed previous amendments to the Telecommunications Law and the Media Law concerning obligations upon providers of programme services after the Commission had expressed concerns about the limiting effect of these provisions on the independence and discretion of the regulator in executing its responsibilities for market analysis.

Furthermore, the Minister of Economic Affairs decides on the global budget of the ACM, but does not have a say on its work programme. There is a separate budget line for ACM within the Ministry's budget, which can be clearly recognised as a separate item. Another part of ACM's budget is financed by market parties. ACM has full control over the spending of its budget. ACM sends an annual report to both the Minister of Economic Affairs and the Minister of Infrastructure and Environment, describing the execution of its tasks. The findings of the two Ministers are sent to the Parliament.

One market regulation and two dispute resolution decisions were adopted in 2014. The ACM's market analysis and dispute resolution decisions can be judicially reviewed by the CBb. Other decisions can be appealed to the District Court first, then to the CBb. There is a very high appeal rate, with many decisions being (partially) overturned. There were 12 telecom related appeal cases in 2014. The average duration of an appeal is 88 days.

4.2. Authorisation and licences

There is a relatively simple authorisation system in place: companies must notify ACM of their planned activities and registration is counted from the moment the provider commences to offer public electronic communications services. OTTs must also register as public telecommunication service or network providers in order to have access to numbering resources. In practice several OTT providers do have access to numbers.

With respect to license conditions, only very light coverage obligations were imposed following the latest (large-scale) auction that took place in the Netherlands in late 2012. Tougher obligations were considered a potential barrier to entry and furthermore unnecessary as consumer demand was expected to discipline the market. Furthermore, certain conditions (mainly related to compliance with existing agreements) applied for licence holders in border areas. Finally minimal restrictions were imposed to prevent interference with for example hospital equipment. In this way, the licenses were considered flexible enough to cope with future developments, including transfer, trading etc.

At present all the licenses dedicated to electronic communications have been made service neutral in the National Frequency Plan. Spectrum trading is allowed in all bands without restrictions. The original conditions of the licence must however remain unchanged and the administrator needs to be informed.

The Dutch Government is in the process of temporarily extending the 2100 MHz licences and a fee will probably be set in that context.

The Netherlands has authorised the Space to Earth transmission of the MSS-2GHz operators Inmarsat and Solaris in 2010. In 2013 two non-compliance letters were however sent to operators.

No issues concerning EMF limits were reported.

As regards taxation, an ongoing discussion concerns the possible levy of municipal taxes on empty telecommunication ducts and unused cables. According to the Telecommunications Law, spare capacity must be tolerated until 2018 (or for a period of 10 years for ducts laid after 2007). Upon expiration of this term, local authorities are entitled to require removal or tax unused ducts. Such taxes could have a negative impact on investment plans of telecommunication providers. At present, there are plans to abolish these terms at the same time with the bill transposing Directive 2014/61/EU on measures to reduce the cost of high speed broadband deployment, so that it becomes impossible for local authorities to tax spare capacity.

5. SPECTRUM MANAGEMENT

In 2014, ten TDD licences of 40 MHz each have been issued for the provision of local wireless broadband services in the 3.5 GHz band. The National Frequency Plan was also modified to allow for mobile communications in (a part) of the 3.6-3.8 GHz band.

The Dutch government intends to make the 700 MHz band available for wireless broadband as of 2020. Auctioning of the band will most probably take place in the time frame 2018-2019. However, making this band available for mobile communications is linked to a number of other items which have to be resolved before the auction can take place. First, the existing licences for the distribution of digital terrestrial television will expire in February 2017. A decision needs to be made about the future of digital television in the remaining UHF TV band. Second, making the 700 MHz band available for mobile communications will severely diminish the amount of spectrum available for PMSE (mainly wireless microphones). Third, the interference of mobile communications on cable television will have to be addressed.

6. RIGHTS OF WAY AND ACCESS TO PASSIVE INFRASTRUCTURE

The procedures for granting rights of way are mainly local. It is important to note that rights of way are granted for free, in accordance with the Dutch Telecommunications Law. The public electronic communications provider is obliged to notify the property owner of his intention to install cables and to strive to come to an agreement regarding the place, the time and the manner in which the work will be carried out. The NRA has dispute settlement powers in the area of rights of way but the number of disputes is rather small.

The Telecommunication Law provides however for a special procedure for public grounds, under which municipalities issue permits prescribing the location, the time and the manner in which the cables can be laid in the ground. There is legislation in preparation to shorten this procedure (the approval decision has to be made within 8 weeks). In some municipalities, electronic submission of applications is available. The fees charged by some municipalities are considered extremely high, and there is a pending Court case claiming that the fees should be cost-oriented.

As regards permits for antennae, only those larger than five metres need a permit which must be given within 8 weeks by the local authority. Small cells are exempted from authorisation. Base stations are also mostly exempted from authorisation, in function of their use (e.g. communication system for emergency services do not need a permit), height and capacity.

Dutch law foresees the possibility to mandate both asymmetric and symmetric facility sharing. No data are available on shared infrastructures. There is no mandatory access to other utilities' infrastructures, yet cooperation occurs on a commercial basis, involving energy, railways and sewerage companies. Similarly, there is no mandatory access to publicly financed works, but this also occurs on a commercial basis. Coordination of civil infrastructure works is ensured by certain local authorities and to a certain extent by regional bodies and KLIC. KLIC is an infrastructure database developed to cover telecommunications and utilities underground infrastructure. KLIC is managed by the Land Registry (Kadaster) and collects information with the main purpose of preventing excavation-related damage to infrastructure.

NGA wiring is not mandatory for new buildings and infrastructure sharing obligations have not been imposed in relation to in-house infrastructure. Yet according to Dutch law, the owner of a building is obliged to allow for in-house wiring and access points in so far as is necessary for the connection of users to a public electronic communications network.

Legislation transposing Directive 2014/61/EU of 15 May 2014 on measures to reduce the cost of deploying high speed electronic communications networks is being prepared and will be consulted during spring 2015.

7. CONSUMER ISSUES

7.1. The European emergency number 112

The necessary level of accuracy for caller location information for calls made to the 112 emergency number has been laid down in Dutch law: it is necessary that information differs in maximum 15 % of the cases with more than 5000 metres from the actual location of the calling network termination points.

Disabled end-users can make an emergency call to the emergency number 112 directly via smartphone, tablet or computer, by using Total Conversation software. Through a mediation service ('Teletalk') the disabled end-users can also contact 112 with real-time text 24 hours a day. In addition, a sign language interpreter is also available within certain hours. Disabled end-users that still use their analogue text phone can call the emergency number 0800-8112.

A recent 112 incident related to caller location information failure in a border area has led to an investigation concerning coverage in remote areas. The reports from the investigation were published in January and April 2015.

7.2. Number portability

While the Netherlands is among the EU Member States with high rates of fixed and mobile number portability, the total number of transactions decreased in both domains in

2014. In the fixed domain, this nevertheless still amounted to a four percentage point increase in the share of numbers ported.

Number portability ¹¹		2013	2014
Fixed	Number of transactions	1,467,990	1,422,790
	% of total numbers	15.5%	20.1%
	Maximum wholesale price	2.0	2.0
	Maximum time under regulation (number of working days)	3	3
Mobile	Number of transactions	921,869	900,849
	% of total numbers	3.9%	4.0%
	Maximum wholesale price	0.0	0.0
	Maximum time under regulation (number of working days)	5	5

Switching is considered increasingly important and sensitive in the context of bundled offers and most operators expect that switching will take place from bundle to bundle. A switching service has been operational for triple-play offers as of early 2014 as a result of a self-regulatory exercise that followed switching protocols for voice, internet and broadcasting services. A similar exercise is currently underway for business users, as it appears that in particular small business users experience switching barriers on the voice market.

7.3. Contractual obligations

Dutch law foresees an obligation to offer a contract of 12 months or less. The maximum commitment period is 24 months for consumers. The law also imposes a right for the consumer to terminate the contract at any time with a one-month notice period when the contract period has been extended tacitly. Legislation is being prepared to give also other end-users (specially small enterprises) such right.

Furthermore, when operators change unilaterally the conditions of a contract, they are required to announce the modification one month in advance and to offer the subscriber the possibility to terminate the contract without any penalty.

7.4. Other consumer issues

Transparency is considered to be ensured by providers and commercial tariff comparison websites are in operating. Three Codes of Conduct are in place aimed at ensuring transparency towards end-users concerning paid mobile internet services, internet speeds, and mobile data usage. There are also several mechanisms provided by operators by which end-users can control their consumption. ACM, being both a telecoms and a consumer protection agency, is looking into the transparency issues from a consumer

¹¹ Source: figures provided by the Netherlands to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe.

protection law perspective too, especially where transparency in the ‘invitation to purchase’ is concerned.

Legislation is being prepared with the aim to oblige providers to compensate end-users in case of interruption of service.

Issues have been reported concerning the access to premium rate services for cross-border communications, including for inbound roamers. In these cases, NRA considers that enforcing accessibility is difficult.

8. UNIVERSAL SERVICE

The incumbent operator has withdrawn from the designation to provide a printed and electronic directory and a directory enquiry service. Steps have been taken towards legislative changes regarding the mandatory availability of the printed directory, taking into account the withdrawal of the incumbent operator, the diminishing demand for the printed directory and the availability of electronic directories as an alternative. The availability of the printed directory is guaranteed up to and including 2017. Broadband is not included in the scope of the universal service. Currently there seems to be no need for a new designation for the provision of these universal services.

As regards funding, only one financing mechanism is active for the ‘Teletalk’ service for disabled end-users. Its net cost is shared between providers via the NRA.

9. NET NEUTRALITY

9.1. Legislative situation

Net neutrality legislation has entered into force on 1 January 2013. It prohibits throttling, blocking of access to services and applications, and differentiated pricing for internet access in function of applications and services used. Price differentiation is however possible in function of the traffic volume and speeds offered. An exception for ‘standalone services’ (also called ‘granny services’) is included in the law.

The Ministry of Economic Affairs is expected to publish shortly policy guidelines on net neutrality. They are aimed at clarifying what type of zero-rating offers are allowed under Dutch law, in a context where several operators had used the exemption for granny services to introduce zero rating for certain music or video apps.

9.2. Quality of service

ACM does not monitor quality of service, apart from BEREC initiatives. In January 2015 ACM fined two operators in relation to net neutrality violations. One incident concerned the blocking of voice over IP in a free WiFi hotspot. The other one concerned a zero-rating offer.

Poland

1. MARKET DEVELOPMENTS

Broadband indicators (December 2014)¹	PL 2013	PL 2014	EU 2013	EU 2014
Fixed broadband coverage ²	88%	85%	97%	97%
NGA coverage ²	52%	53%	62%	68%
Fixed broadband take-up ²	61%	60%	69%	70%
Share of >30Mbps subscriptions ³	20%	28%	21%	26%
Share of >100Mbps subscriptions ³	2%	5%	5%	9%
Share of DSL in fixed broadband ³	46%	40%	73%	70%
Incumbent market share fixed broadband ⁴	33%	32%	42%	41%
HSPA Mobile broadband coverage ²	98%	100%	97%	97%
LTE Mobile broadband coverage ²	55%	67%	59%	79%
Mobile broadband penetration ⁵	79%	86%	64%	72%
Market share of leading mobile network operator ⁴	30%	30%	35%	35%

In 2014 the value of the Polish telecoms market further decreased, below the 2013 value of PLN 40.15 billion. The decrease in revenues (-3.7% in 2013)⁶ mostly affected the fixed segment but was also visible in mobile telephony.

With regard to mobile, the decrease in revenues was mostly attributed to the decrease in MTRs as of 1 July 2013. The increase in data traffic in mobile networks has not translated yet into financial profits. The efforts of operators to extend the range of services (to energy, content and financial ones), are still in the early stage. The market is dominated by four mobile operators holding comparable shares. The leader continued to

¹ Sources: coverage data — studies by IHS and VVA; penetration data — figures provided by Poland to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe (except fixed broadband take-up, provided by Eurostat).

² % of households.

³ % of fixed broadband subscriptions.

⁴ % of subscriptions.

⁵ Subscriptions per 100 inhabitants.

⁶ Source: Report on the telecommunications market in Poland in 2013, UKE, Warsaw, June 2014, https://en.uke.gov.pl/files/?id_plik=16941.

keep its position in the mobile market. The popularity of ‘no limit’ offers triggered more mobile traffic (75.7 billion minutes in 2013, i.e. 9.6 % increase). As a result, the mobile segment resisted pressure from OTTs, keeping also the SMS traffic at high level (c. 52 billion/year). The number of mobile broadband users is steadily growing (4.3 million in 2013, which means an increase by 19.1 % compared with the previous year).

With regard to the fixed sector, the merger of T-Mobile Polska and GTS Poland is expected to improve the position of T-Mobile in the business segment, so far dominated by Orange, at least for the range below 30 Mbps and 30-100 Mbps. When it comes to speeds exceeding 100Mbps Orange was challenged by cable operators and other, specialised, ISPs. The consolidation trend among cable operators slowed down. Cable operators continued to invest in new roll-out, mostly in bigger cities though. The Orange pilot project in Warsaw demonstrated moderate interest in fibre but was followed up with a commercial offer. The partial deregulation of market 5 which took place in October 2014 has not yet triggered additional investments by the incumbent. The imminent result of this decision was a decrease of the prices for fibre and xDSL and development of a bitstream access (BSA) offer for alternative operators (AOs).

In 2014 operators planned⁷ to roll-out or upgrade 7500 km of the infrastructure (both fibre, including fibre backhaul of BTS, and mobile access in LTE but also in 2G/3G,) for the value of PLN 765 million (approx. 58 % of which will be financed from the public funds). Despite the delay of the auction for 800MHz, all main operators continued investments in LTE, mostly on 1800Mhz band, extending significantly the LTE coverage (Polkomtel, the leader covers nearly 70 % of population and is followed by the others). To this end Orange and T-Mobile cooperate on the basis of a network sharing agreement. The two operators expanded and modernised their network reaching significant economies of scale and increasing their coverage to almost the entire area of Poland. As of end of October 2014, P4 and T-Mobile in practice fulfilled their investment obligations under the 1800 MHz tender in 2013 to build or upgrade at least 3200 base stations *per operator* within 24 months. The take-up of LTE services varies from one operator to another and thanks to better availability of LTE-ready devices, is expected to have better dynamic than was the case for 3G. The share of the MVNO and MNO remains very small (2.5 %), despite the increase of users, attracted mostly however by cheap international calls. Orange and T-Mobile continued cooperation within a network sharing venture, jointly upgrading base stations from the common pool. Further decline of fixed voice (with 11.5 billion minutes in 2013) was accompanied by the incumbent’s loss of subscribers (-7.6 % in 2013), followed by decrease in revenues (-4.8 % in 2013, amounting to PLN 4.3 billion). Fixed broadband access up to 30Mbps remains the most popular (38 % of users in 2013 used 2-10Mbps, 19 % used 10-30Mbps and 35 % 30-100 Mbps; 7.6 million users in total).

The VoIP market is steadily growing (with 2.3 billion minutes in 2013) but its value remains small (PLN 0.3 billion in 2013). The substitution of mobile to fixed in voice services does not necessarily apply to broadband services, where, especially in urban areas, they are considered to be complementary.

⁷ See Report of UKE http://uke.gov.pl/files/?id_plik=16757 page 57.

The broadband access market is the only one that marked an increase in value (+3.7 % in 2013), with xDSL generating 30 % of the revenue, mobile broadband 27 % and TV cable 22 %.

The take-up of bundled offers in Poland remains relatively small, with 2.4 million subscribers in 2012 and in 2013. The most popular remained a double play combining internet and TV (approx. 46 % in 2013). No vertical agreements with OTT were reported.

2. MARKET REGULATION

2.1. Market analysis

The alternative operators still use the infrastructure of the incumbent on the basis of LLU and BSA offers, but the interest in BSA is decreasing (-3.4 p.p. in 2013). The decision of 7 October 2014 partially deregulating market 3b led to the definition of two separate markets: one consisting of the territory of 76 communal areas, which represents around 24 % of the population (deregulated), and the other market consisting of the remaining territory of Poland. The decision reflects the fact that while in the first market the most popular technology for accessing broadband is cable TV (55 % share of the retail market), conversely, in the remaining territory of Poland, the most popular broadband access technology is xDSL, with a share of 67 % (versus 31 % in the 76 communes). The impact of this decision is to be seen in 2015 onwards. The Commission in its comments to UKE's Decision of 7 October 2014 confirmed that the deregulation of a part of market 5 (current 3b) is possible, provided that effective access will be ensured on the market 4 (current 3a). The application of relevant Recommendations is not an issue in Poland. In 2015 the regulator intends to carry out the analysis of wholesale market 3a (the previous analysis dating back to 2010), taking duly into account the latest Recommendation on relevant markets. The discussions with the Commission regarding the analysis of market 3a are ongoing. The retail markets ex 3-6 have been notified to the Commission under cases PL/2015/1701-1704. The defined markets included all telephone calls made from fixed networks. With regard to all the defined markets UKE conducted the assessment of the three criteria, as well as the full assessment of SMP. UKE proposed to withdraw all obligations previously placed on OPL. The Commission had no comments on the notified measure.

The MTRs in Poland have effectively decreased to 0.01 EUR /minute (PLN 0.0429/minute) in 2013, triggering a decrease in wholesale payments between operators of 65-85 %. In 2014 UKE did not notify any changes in the MTRs. UKE does not perform any annual updates of the model for calculation of the MTRs. The MTRs are calculated according to the pure BU-LRIC model. Despite the EU average at the level 0.013 EUR/minute, the higher costs in some neighbouring countries (Germany) generate negative balance.

The last market analysis of the current market 1 (FTRs) was conducted in 2009. It concerned the termination in TP's network. At the time in respect of the price control obligation, UKE obliged TP to set charges based on costs incurred and this is the methodology currently in place in Poland. UKE does not foresee to carry out a new market analysis before the end of 2015 and it is unclear when the regulator will comply with the Termination Rates Recommendation setting the fixed termination charges (FTRs) based on a recommended pure BU-LRIC methodology. The FTRs in Poland are still asymmetrical and significantly higher than the recommended level.

2.2. Access and interconnection

In 2012 and 2013, there were no issues reported regarding the access obligations or IP interconnection. Although operators claim that they are technically ready to migrate towards IP interconnection architecture, no calendar is set. For some this reflects the lack of demand for more advanced services, especially among older users, and constant demand for GSM services as well as national roaming agreements. There was only one IP interconnection agreement between a local OTT player and network operator (Orange).

3. BROADBAND PLANS AND FINANCING

The National Broadband Plan, as adopted by the government in January 2014, will be subject to evaluation as regards its implementation by the end of 2015. The Ministry of Administration and Digitisation, which takes main responsibility for the plan, intends to focus on updating it with the results of ongoing work on the OP Digital Poland, as well as on reflecting the opportunities of supporting investments from the national funds (e.g. disconnecting it from PIR — Polish Development Investments). The plan also identifies the investment obstacles e.g. electromagnetic field limits. Given the fact that the plan was adopted by the Council of Ministers, the expectation is that the objectives it sets, which correspond to the DAE targets, will be high on the political agenda.

While Poland will receive over EUR 1 billion from EU funds for broadband investment up until 2020, the funding gap for covering all white spots in Poland is assessed to be PLN 17 billion (EUR 4 billion). However, this relates to both white areas that will be covered by market forces and those that need additional support from public funding. As of February 2015, the intended intervention under the OP Digital Poland will focus on white areas where the public support is necessary for the sustainability of the networks, taking into account the take-up potential. The programme will apply the NGA definition in the NGA Recommendation and will build on the premise of technological neutrality, with the proposed requirement of ‘guaranteed’ 30 Mbps speed allowing also for grants to advanced mobile solutions. The implementation arrangements should allow for the application of General Block Exemption Regulation to all projects, thus eliminating the need for individual State aid notifications. It is expected that most of the grants will be absorbed by operators. In cases where the operators do not show interest, the communes will be able to apply. The Ministry will also continue trainings for local authorities (which are the main beneficiaries under the current setup for EU funds) on the investment process (to help further streamlining the process) and management of the networks infrastructure. As a number of projects financed in 2007-2013 are still ongoing, the overall picture of the use of this fund will be known at the end of 2015.⁸

⁸ Another important activity of the Ministry of Administration and Digitisation is the publication in April 2015 of a Code of Good Practice to support broadband investment by local authorities, describing the benefits of broadband and best practices used by some local authorities to promote telecommunications investments. Along with the Code, a Letter of Intent drawing attention to the issue of high fees for occupation of roadway in order to construct broadband networks was sent to local authorities.

4. INSTITUTIONAL ISSUES

4.1. The National Regulatory Authority

The Urząd Komunikacji Elektronicznej (UKE, The Office of Electronic Communication) has been established by the Law of 29 December 2005 *o przekształceniach i zmianach w podziale zadań i kompetencji organów państwowych właściwych w sprawach łączności, radiofonii i telewizji* (Law on transformation and modification of tasks and competences of the bodies responsible for communication, radio and TV) and is responsible for all tasks assigned to national regulatory authorities under the regulatory framework for electronic communications in the EU. The Minister of Administration and Digitisation (as the Minister responsible for communication) has general competences regarding telecommunications policy, but cannot give instructions to the President of UKE.

	2014
Personnel ⁹	637.48
Increase	0.63 %; As of 31 December 2013 the FTE amounted 633.48
Budget	103 million PLN
Increase	11 %
Administrative charges ¹⁰	17 million PLN
Administrative costs ¹¹	28 million PLN

The President of UKE, in addition to the function of a national regulator in the area of electronic communication and authority responsible for spectrum management, also performs tasks of postal regulator and the body assuring electromagnetic compliance.

The regulatory activity of the President of UKE is communicated in advance to stakeholders on ad hoc basis. Occasionally, the President of UKE publishes also multiannual regulatory strategy.

In 2014, 122 decisions of the President of UKE were challenged before the courts. 34 of them have been quashed and 86 upheld. The substantial part of all appeals still concerns decisions imposing financial penalties.

In the reporting period the Polish Supreme Court referred two requests for preliminary rulings to the Court of Justice of the EU (C-3/14 and C-397/14). In both cases the questions related to the intervention of the regulator to define access conditions to non-geographic numbers.

4.2. Authorisation and licences

As of 15 January 2015 there were 36 foreign operators active on the Polish market (among others) and 8 of them entered it in 2014. The conditions attached to wireless

⁹ Number of staff in full time equivalents (fte).

¹⁰ In the sense of Art. 12 of the Authorisation Directive (Directive 2002/20/EC as amended by Directive 2009/140/EC).

¹¹ Idem.

mobile broadband rights of use do not raise concerns of the operators. All the licences assume technological neutrality. On the other hand the EMF limits, which remain among the strictest in the EU, well below the Council Recommendation of 12 July 1999, are widely considered by mobile operators to significantly increase the costs of deployment of LTE, due to cumulative measurement method. The costs related to fulfilment of coverage obligations under the future licences for 800 MHz, once the auction for this band will be carried out, may demonstrate the scale of the problem. The Ministry is to prepare an analysis assessing the factual situation and, among others, the financial impact of current limits.

In 2014 the President of UKE, in line with the national law, extended three licences for another 15 years, two with regard to 1800 MHz band and one with regard to 900MHz band. The licence fees were calculated on the basis of the prices paid for similar frequencies in the last tender in Poland. The President of UKE extends a licence at the request of the rights holder, provided that the latter has not significantly violated the legal provisions specifying the conditions attached to the rights of use of the band during the relevant period. These decisions were not submitted to public consultation.

5. SPECTRUM MANAGEMENT

Although the derogation decision of 23 July 2013 granting Poland additional time to comply with Art.6(4) of the RSPD expired at the end of 2013, the 800 MHz band has not been assigned yet. After cancellation in February 2014 due to technical problems of the auction launched on 30 December 2013, a second auction for the assignment of 5 blocks in the 800 MHz band and 11 blocks in the 2.5-2.6 GHz band was finally launched on 10 October 2014. Before launching the auction, the President of UKE decided to wait for the results of the analysis requested by the Ministry of Administration and Digitalisation regarding the options of use of the 800/2600 MHz bands and carried out by the Instytut Łączności — Państwowy Instytut Badawczy (the National Institute of Telecommunications, a scientific & research institution operating in the area of telecommunications and information technology).

The Ministry anticipated the termination of the auction by the end of Q1 2015, expected that the bidding phase would not take too long, given the reserve prices¹². The bidding phase started on 10 February 2015 — and is still ongoing — with the participation of six Polish operators: Polkomtel, Orange, T-Mobile, P4, Hubb Investments and NetNet all intended to acquire the maximum package, which is 2 blocks of 800MHz band and 4 blocks of 2.5-2.6 GHz band. The Commission is closely monitoring the process.

As a result of the action, entities to be granted licences in the 800 MHz band will launch high speed Internet access within:

- 24 months from the date of service of the reservation: for 83 % to 89 % of municipalities, indicated separately for each frequency block, with a population below 30 000 (several municipalities above 30 000), where current coverage of mobile networks offering transmission services is below 80 % of the municipality's area. There are 1242 such municipalities in total (on average 248 municipalities per each block).

¹² The starting price for a 100 MHz block was EUR 60 million.

- 36 months from the date of service of the reservation: for 90 % of the indicated 1053 municipalities with a population up to 30000.
- 48 months from the date of service of the reservation: for 90 % of the indicated 91 municipalities with a population from 30 000 to 50000.

In 2014 the Supreme Administrative Court decided that the 2007 tender for the 1800 MHz band must be repeated. A damages suit against the State Treasury filed by the operator which had won the tender may follow.

As regards 700 MHz band, the Ministry of Administration and Digitisation has actively encouraged national actors to take part in the public consultation launched by the Commission. This was done through a national public consultation as well as a public meeting in March 2015 with representatives of the telecom sector, broadcasting sector and other interested stakeholders. The Ministry also coordinated Poland's official position with regards to the future use of the 700 MHz band, which reflects a compromise between opposing views of telecom companies and broadcasters. The position was based upon the input received during the national public consultation and the proposals of the report of the High Level Group chaired by Pascal Lamy. For the moment the 700MHz is used for broadcasting under licences valid until 2020-2025. No reframing initiatives were reported.

A 'round-table' gathering representatives of authorities and stakeholders contributed to lifting the buffers of 200 kHz between the bands, with a view to ensure more efficient use of spectrum.

Some operators started signalling interferences problems with neighbouring non-EU countries again.

6. RIGHTS OF WAY AND ACCESS TO PASSIVE INFRASTRUCTURE

The infrastructure mapping system SIIS includes information on telecommunication infrastructure, public telecommunication networks and buildings apt for collocation, as well as infrastructure build entirely or partially from the public money (with information about the status: planned/in progress/completed). The system can collect information on fibre lines and access networks (deployed and planned for the current year). The map is available in GIS format exclusively to authorised representatives of providers (electronic communication providers, local entities and utilities) and requires login and password. The data can be provided as XML or CSV files.

On the basis of SIIS and demand map, UKE and Instytut Łączności are expected to develop a tool for the identification of white spots, to be used in the assessment of projects submitted under the OP Digital Poland.

Operators complain about the increasing number of court decisions negatively affecting the length of permit granting procedures, despite partial liberalisation of permits rules by the Act of 7 May 2010 on supporting the development of telecommunications networks and services (Megaustawa) (exempting small installations), adopted at that time to facilitate the investment conditions. As reported, despite *lex specialis*, the courts seem to favour interpretation based on the Construction Law, thus requiring permits e.g. for base stations.

The discrepancy and discretionary powers of local authorities in setting the fees for rights of way and infrastructure taxes is another issue raised by many operators, including the cable ones. Such fiscal approach to broadband infrastructure, especially in cases where financial support from the public funds was needed in the first place, questions the sustainability of such investments.

Another issue highlighted mostly by cable operators concerns the application of Art.30 of Megaustawa granting free of charge access to buildings. On the one hand many building cooperatives register in the registry for electronic communications undertakings to avoid the application of Art.30 to them, thus exposing themselves to the symmetric regulation regime. On the other hand, there is a big number of disputes concerning application of Art.30 pending before the President of UKE. While this number has not radically increased over the years and the backlog results from the complexity of cases, the operators tend to agree to pay for the access, so not to incur costs of further delay. The symmetric access rules applicable to the electronic communication undertakings are not very popular and in 2014 the President of UKE applied its powers to impose such access only once with regard to a local cable operator. Access to other utilities infrastructure is possible but difficulties related to lack of willingness to cooperate from the energy sector and a small number of good practice examples different standards (e.g. energy) is negatively affecting the interest. In case of coordination of civil works UKE is already offering a centralised source of information on planned works in public roads. Such investments have to be communicated by the authorities managing the roads 6 months in advance. There is no registry of permits for civil works, but such local registries will become compulsory after 28 June 2015 following the entry into force the Law of 20 February 2015 amending the Construction Law and other laws ¹³.

Symmetric infrastructure sharing is mandatory for in-house infrastructure. NGA wiring is required for new buildings and renovations of old buildings since 2013.

The work on transposition and implementation of Directive 2014/61/EU (Costs Reduction Directive) is progressing well. The proposal of the assumptions of law [internal consultations completed] should be submitted to the Parliament by the autumn.

7. CONSUMER ISSUES

7.1. The European emergency number 112

Poland has legislation in place which lays down caller location accuracy and reliability criteria, including calls made via roaming. The equivalent access to emergency services for disabled end-users is to be guaranteed via SMSs. On 1 January 2015 the modified law on alarm information systems entered into force. Emergency SMS will become available once the Minister of Administration declares that information centres are fully operational. 112 has good recognition in Poland. The Ministry is focusing now on information campaigns to reduce the number of false calls.

¹³ Ustawa z dnia 20 lutego 2015 r. o zmianie ustawy — Prawo budowlane oraz niektórych innych ustaw (Dz. U. z 2015 r. poz. 443).

7.2. Number portability

Number portability ¹⁴		2013	2014
Fixed	Number of transactions	385,274	384,227
	% of total numbers	5.4%	5.8%
	Maximum wholesale price	6.0	3.9
	Maximum time under regulation (number of working days)	1	1
Mobile	Number of transactions	1,121,405	1,555,931
	% of total numbers	2.6%	3.0%
	Maximum wholesale price	0.0	0.0
	Maximum time under regulation (number of working days)	1	1

Although transactions related to number portability peaked in 2012, Polish users are still taking full advantage of this right. Despite a decrease in absolute numbers, P4 remains the leader among the mobile operators with 58 % (2013) of all numbers ported to its network. The procedure related to number portability does not raise any major concerns of consumers.

7.3. Contractual obligations

There were no issues reported related to minimum commitment periods. Modifications in contractual conditions must be made public and communicated in writing to end-users at least one month before entry into force, together with information on the right to withdraw from the contract. The burden of proof that the end-user received the relevant information is on the operator. As a consequence of the transposition of the Consumers Rights Directive to Polish law by the *Act on Consumer Rights*, adopted on 30 May 2014 and which come into force in December 2014, the right to receive specific information on price changes was reinforced. Accordingly, end-users must explicitly agree on proposed changes and a simple update of price lists will not be sufficient.

7.4. Other consumer issues

Transparency of tariffs and conditions is ensured by commercial platforms. UKE published in March 2014 an analysis of tariffs for fixed broadband which revealed that the cost of access to lower speeds is relatively high. Since June 2013, end-users are entitled to receive information about reaching data transfer limits and information on such rights must be included in the contract. On top of that, the by-laws and agreements may also provide for specific facilities allowing for the monitoring of consumption.

In view of the entry into force of provisions transposing the Consumers' Right Directive, and the number of queries from stakeholders concerning the relation between these provisions and the Telecoms Law, the President of UKE and President of the NCA issued an interpretative opinion in December 2014, in view of which, in case of conflict,

¹⁴ Source: figures provided by Poland to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe.

the more ‘consumer friendly’ provisions will be favoured. According to the Ministry, the Telecoms Law rules, as *lex specialis*, should prevail.

There is a decreasing trend of telecommunication services related consumer complaints, which amount to 25 % of all service-related complaints. This, in turn, is a third of all consumer complaints brought to attention of consumer associations. In 2014 UKE, as the out-of court dispute resolution body, dealt with 5474 complaints and in nearly 70 % of cases contributed to an operator’s decision in favour of the consumer. Moreover, in 2014 more than 47 % of 2878 mediation cases with the President of UKE as a mediator were considered positively to consumers. The most popular grounds of complaint are unfair commercial practices by a few smaller operators in particular with regard to older users, problems with coverage despite the information available in operators’ marketing materials, and activation of premium rate SMS.

8. UNIVERSAL SERVICE

The following services, provided in any technology, together with arrangements for disabled persons, are included in the scope of universal service (US) in Poland: connection of a network termination point at a fixed location capable of supporting voice, facsimile and data communications, including functional Internet access at rates supporting the use of common applications to handle current daily life matters, in particular using electronic mail or applications supporting payments; maintenance of subscriber lines; national and international telephony services; directory enquiry services and subscribers directories; public pay telephones and other public voice telephony access points.

Since 9 May 2011, there is no operator designated to provide universal service in Poland. According to UKE’s report of 30 April 2014, assessing the state of play, availability, quality and affordability of services subject to universal service obligation, there is no need to designate any of the operators to provide universal service in Poland. The report was subject to public consultation and relies on various data (yearly survey, data on the number of subscriptions, data on the percentage of households with access to fixed voice/internet, and, as an auxiliary source, map of demand). Factually there are proceedings still pending associated with financing the cost of universal service obligation.

It should be noted that with the amendment of the Telecommunications Law the obligation to provide facilities for people with disabilities was transferred from the undertaking designated to provide universal service — in accordance with Article 79c Telecommunications Law — to all providers of publicly available telecommunications services.

9. NET NEUTRALITY

9.1. Legislative situation

Net neutrality has been one of the main fields of interest of the Ministry of Administration and Digitisation, mainly due to the Council of the EU work on the TSM proposal. The Ministry organised dedicated workshops (open for all interested stakeholders) in November. Many operators apply zero rating as a marketing method and

this is not perceived as a problem by consumers in the context of net neutrality discussions.

9.2. Quality of service

The work within the Memorandum on quality of services led to the identification of 8 quality indicators (2 administrative and 6 technical) which however are applied on a voluntarily basis and no audits have been carried out so far.

Portugal

1. MARKET DEVELOPMENTS

Broadband indicators (December 2014)¹	PT 2013	PT 2014	EU 2013	EU 2014
Fixed broadband coverage ²	100%	100%	97%	97%
NGA coverage ²	84%	89%	62%	68%
Fixed broadband take-up ²	53%	53%	69%	70%
Share of >30Mbps subscriptions ³	41%	54%	21%	26%
Share of >100Mbps subscriptions ³	19%	22%	5%	9%
Share of DSL in fixed broadband ³	43%	39%	73%	70%
Incumbent market share fixed broadband ⁴	50%	48%	42%	41%
HSPA Mobile broadband coverage ²	95%	97%	97%	97%
LTE Mobile broadband coverage ²	91%	94%	59%	79%
Mobile broadband penetration ⁵	37%	46%	64%	72%
Market share of leading mobile network operator ⁴	46%	47%	35%	35%

The Portuguese electronic communications market has experienced a trend towards consolidation over the past years. In May 2014, the merger between ZON and Optimus was completed, which led to the establishment of NOS. In December 2014, Portugal Telecom Group implemented a reorganisation integrating its fixed and mobile operations under the same business and brand (MEO). Also in December 2014, Altice, controlling already two telecommunications operators: a cable operator ('Cabovisão') and a business segment operator Onitelecom ('ONI') announced that it had signed a definitive agreement with Oi (a Brazilian operator) to purchase PT Portugal by way of purchase of shares. In February 2015, the Commission received notification of the proposed concentration pursuant to the Merger Regulation. In April 2015, the Commission

¹ Sources: coverage data — studies by IHS and VVA; penetration data — figures provided by Portugal to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe (except fixed broadband take-up, provided by Eurostat).

² % of households.

³ % of fixed broadband subscriptions.

⁴ % of subscriptions.

⁵ Subscriptions per 100 inhabitants.

authorised the proposed acquisition conditional upon the divestment of Altice's Portuguese businesses ONI and Cabovisão (Case M. 7499⁶).

Investment in NGA by Portuguese providers continued over the past year leading to a fast development of NGA in the country. Currently there are 4 main fixed telecom operators in Portugal, all with major NGA coverage. The two cable operators (NOS and Cabovisão) upgraded their network with DOCSIS 3.0. Cable operators, together with the introduction of DOCSIS 3.0 are also important drivers of competition in the Portuguese market. The two FTTH operators (MEO and Vodafone) plan to cover each, in the short term, approximately 2 million households, i.e. 33 % of all households in Portugal. In July 2014, MEO and Vodafone concluded a network sharing agreement to deploy FTTH complementing the individual plans of the companies. The terms of the agreement gave each party an effective control over PON network infrastructures belonging to the other party. The agreement covers the sharing of fibre optic network in 900.000 homes (approximately 450 000 homes for each party).

With regard to market developments and market shares in the Portuguese market⁷, competition in the fixed broadband market continued to increase and the market share of the incumbent operator MEO decreased over the last year, from 50.5 % 48.5 % in December 2014. NOS had a market share of 35.0 % and Vodafone reached 10.6 % increasing from 6.5 % in December 2013. In the fixed voice market, MEO had a market share of 54.1 % in December 2014 (decreasing from 56.4 %) in December 2013, followed by NOS (30.6 %) and Vodafone (9.6 %). In the mobile market, MEO was also the leading provider in December 2014 with 47.3 % market share, followed by Vodafone (32.2 %) and NOS (18.4 %).

Another relevant development that continued during 2014 is the growing number of subscribers to bundled commercial offers by providers as the most competitive model in the market. Bundled services are increasingly used by consumers and operators have continuously launched new offers on the market, combining voice services, internet access and television. In the 4th quarter of 2014⁸ there were 2.9 million subscribers of bundled offers in Portugal. Triple-play continued to be the most popular bundle (46.5 %) although with high increase of quintuple play over the past year (reaching 33.2 %). The bundled-offer penetration has increased and in the 3rd quarter 2014 71 out of 100 private households had a multiple-play bundle in Portugal. Approximately 94 % of fixed broadband subscribers, 84 % of pay TV subscribers, 77 % of fixed voice subscribers and 19 % of mobile subscribers use these services as a part of a (fixed) bundle. TV is an important driver in this process of growing importance of bundles in the Portuguese market. At the end of 2014, more than 85 % of broadband access lines were associated with the TV subscription service and fixed telephone service, with more than 80 % of all available bundled offers include pay TV services. In terms of subscribers, more than 90 % of all subscribed bundles include TV services.

⁶ Altice/PT Portugal: http://ec.europa.eu/competition/elojade/isef/case_details.cfm?proc_code=2_M_7499.

⁷ Source: ANACOM Statistics and reports: <http://www.anacom.pt/render.jsp?categoryId=3476>.

⁸ Source: ANACOM Statistics and reports: <http://www.anacom.pt/render.jsp?categoryId=3476>.

2. MARKET REGULATION

2.1. Market analysis

The *Autoridade Nacional de Comunicações* (ANACOM, see section 4 below) is planning to complete the programme of market reviews in the coming year including relevant decisions in the regulation of broadband markets. ANACOM expects to approve and notify market analysis concerning markets 1, 2, 3a 3b, and 4 to the Commission in 2015. The review process has suffered delays in certain markets *vis-à-vis* the three-year review cycle under Article 16(6) of Directive 2002/21/EC in view of the recent and successive events concerning mergers and acquisitions in the Portuguese market which have delayed a number of market analysis including the broadband markets. The review of market regulation takes place also in the above described context of investment in NGA, important co-deployment agreement between MEO and Vodafone Portugal for FTTH deployment and upgrade of HFC networks' coverage of the territory with Euro DOCSIS 3.0.

The revision of market 1 for wholesale fixed call termination is currently ongoing. On 10 July 2014, ANACOM approved a draft decision on the definition of the wholesale market for call termination on the public telephone network at a fixed location, the assessment of significant market power (SMP) in this market and on the imposition, maintenance, amendment or withdrawal of regulatory obligations. Simultaneously, ANACOM approved the draft decision on the fixed termination costing model based on pure-LRIC.

With regard to market 2, ANACOM is currently working on the new market analysis revision as well as on the revision of a cost model that was developed in 2012. Mobile termination rates currently applicable were set through a decision approved in 30 April 2012, and are based on a pure-LRIC model, in full accordance with the EC Recommendation, since December, the 31st, 2012.

With regard to markets 3a and 3b, ANACOM started market analysis and approved a draft decision on broadband market in June 2012. However, following this draft decision in 2012, ANACOM decided to postpone the analysis of these markets in view of the developments in the Portuguese market towards consolidation. Furthermore, in view of the implications of a fibre-sharing agreement between PT and Vodafone and the projected merger acquisition of Portugal Telecom by Altice, ANACOM indicated that it will wait for the outcome of these processes before the adoption of a new draft Decision, which should be notified to the Commission. In this regard, ANACOM indicated its intention to review the way market segmentation was previously defined. Nevertheless, regarding remedies ANACOM approved in December 2014, a decision on the publication of quality of service performance levels of the Reference Poles Access Offer. MEO is obliged to provide a reference offer for access to his ducts and a reference offer for access to his poles.

Regarding market 4, in December 2014, ANACOM approved a draft decision on the wholesale market for high-quality access at a fixed location (wholesale leased lines). According to this draft decision, the following relevant wholesale leased line (WLL) markets were identified: (i) terminating segments with capacity less than or equal to 2

Mbps (with national scope) and above 2 Mbps (in non-competitive areas — NC areas); (ii) trunk segments, comprising NC routes (with the exception of CAM⁹ and backhaul circuits); (iii) trunk segments, comprising CAM and backhaul circuits. In this draft decision ANACOM also concluded that MEO holds SMP in the above identified markets and therefore should be imposed ex ante obligations. This draft decision also foresees other obligations to be imposed on MEO, such as the regulation of *backhaul* from submarine cable stations and CAM circuits (between the Mainland and the Atlantic islands) pricing and the conditions governing access to undersea cable stations.

On 4 July 2014, the Commission received the notification of draft measures from ANACOM concerning the markets for access to the public telephone network at a fixed location for residential and non-residential customers, for retail fixed voice telephone services, for non-geographic numbers¹⁰ and the market for fixed wholesale call origination¹¹ in Portugal. On 4 August 2014, the Commission adopted its Decision on comments on these cases pursuant to Article 7(3) of Directive 2002/21/EC. By Determination of 14 August 2014, ANACOM approved the final decisions regarding the retail markets of access to the public telephone network at a fixed location and of telephone services provided at a fixed location and the decision regarding the wholesale market of call origination at a fixed location. As a result of the analysis, it was concluded that the retail markets of access to the public telephone network at a fixed location, the retail market of publicly available telephone services at a fixed location and the retail market of calls to non-geographic numbers are not relevant for the purposes of ex ante regulation. It should be noted that the companies of MEO will still be subject to several obligations (carrier pre-selection and wholesale line rental) imposed in the framework of the wholesale origination market, which are important to ensure the market conditions that allowed for the conclusion that the retail markets referred to before were not relevant for the purpose of ex ante regulation. With regard to the wholesale market of call origination at a fixed location, given the constraints to effective competition between companies, ANACOM concluded that the companies of MEO active in this market have SMP and were made subject to a set of regulatory obligations.

In the mobile market, ANACOM initiated in 2014 a review of the wholesale markets of voice call termination on individual mobile networks and a review of the cost model to determine the new MTR. The revision of the market as well as the definition of the new MTR are expected to be concluded in 2015. Concerning the Commission Recommendation on Termination Rates, currently, and following the adoption of provisional and urgent measures in 2013, the Fixed Termination Rates (FTR) are set on the basis of a benchmark of pure-LRIC rates of countries at a date determined by ANACOM. Furthermore, as mentioned above, ANACOM developed the fixed termination costing model and approved in 2014 the draft decision regarding it.

With regard to markets that are no longer included in the 2014 Recommendation on relevant markets¹², ANACOM plans to review ex-market 18 on wholesale broadcasting transmission services.

⁹ Leased lines from the Continent to Azores and Madeira Islands.

¹⁰ Case PT/2014/1638.

¹¹ Case PT/2014/1639.

¹² Commission Recommendation 2014/710/EU of 9 October 2014 on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with

2.2. Access and interconnection

In 2014 no issues regarding IP interconnection were reported in Portugal. IP interconnection will be addressed in the context of a forthcoming decision regarding the fixed wholesale termination market. In 2014 ANACOM conducted a consultation on the transition to IP interconnection and the draft decision on the former market 3 adopted in July 2014 foresees a calendar for the migration to IP interconnection to be established based on a proposal from MEO. Besides the calendar for the complete migration, this proposal will also define the technical details for the interconnection, and must rely on the active contribution of the other operators present in the market and will then be analysed by the regulator. This decision follows the opinions expressed in the consultation process that there are technical aspects that need to be addressed and the need for an implementation period that allows for the planning, equipment acquisition and testing of this new type of interconnection.

3. BROADBAND PLANS AND FINANCING

In 2012 the Portuguese Government adopted a comprehensive digital strategy for the country, the *Agenda Portugal Digital*¹³ — Digital Agenda for Portugal (DAP), which is aligned with the Digital Agenda for Europe (DAE) as the national policy strategy for the achievement of the DAE objectives in Portugal. In relation to DAE broadband targets, the DAP set three general targets regarding broadband development: (i) Access to standard broadband for all in 2013; (ii) Access to fast broadband (30 Mbps or more) for all by 2020; and (iii) Access to ultra-fast broadband (100 Mbps or more) for at least 50 % of Portuguese households by 2020. Furthermore the DAP set also two specific measures for the roll-out and access to broadband for at least half of the population in rural municipalities and the extension of national mobile broadband coverage. In 2015, the Portuguese Government updated the DAP Strategy via a new Resolution of the Council of Ministers¹⁴ which aims at bringing the DAP closer to the priorities and timeframe of the DAE, the Europe 2020 Strategy and the Partnership Agreement, Portugal 2020 and *inter alia* revises the timing for the implementation of the specific measures within the DAP and introduces new targets.

The targets concerning broadband development set in the DAP are linked to certain projects developed by the Portuguese authorities in the past years: in 2009, the Portuguese Government carried out five tenders (one for each region of the country: 3 in the continent North, Centre and South, and 2 for the autonomous regions of Madeira and Azores) as part of a national broadband plan for the deployment of NGA networks in rural areas providing a minimum guaranteed download speed of 40 Mbps. Four of the five projects have already been implemented. The remaining regional project, concerning the Region of Madeira, faced some delay in its implementation at national level. This delay had an impact on access to funds for the project and Portuguese authorities and the selected operator are now evaluating whether this project may benefit from new funds.

Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services, OJ L 295, 11.10.2014, p. 79.

¹³ <http://www.portugaldigital.pt/index/>.

¹⁴ Resolution 22/2015, of April 16th.

In 2011, the Portuguese authorities carried out a multiband auction following which a significant amount of spectrum to provide electronic communication services including for mobile broadband (notably with LTE) was provided to 3 mobile operators. The current DAP (as updated in 2015) foresees additional targets in what concerns broadband deployment including the future use of the 694-790 MHz band for mobile broadband systems in line with the EU decisions.

With regard to EFSI funds, Portuguese authorities are analysing whether/how to use available funds.

4. INSTITUTIONAL ISSUES

4.1. The National Regulatory Authority

	2014
Personnel ¹⁵	392
Increase	4.3 %
Budget	€ 44.7 Million
Increase	8.7 %
Administrative charges ¹⁶	€ 27.9 ¹⁷ Million
Administrative costs ¹⁸	€ 42.7 Million

The *Autoridade Nacional de Comunicações* (ANACOM), former ‘ICP-ANACOM’ under the act and Statutes approved by Decree-Law no. 309/2001 of December 7th is the national regulatory authority for postal communications and electronic communications in Portugal. ANACOM’s competences in the field of electronic communications include market regulation (including market analyses, spectrum management, frequency coordination, numbering management, etc.), market supervision, and international and national representation. Furthermore ANACOM assists the Portuguese Government in defining strategic guidelines and general policies in the field of electronic communications.

By Decree-Law 39/2015, of 16 March, the Government approved the new Statutes of ANACOM adapting them to the rules established under Law 67/2013 on the Legal Framework on Regulators adopted in August 2013. The new Statutes of the NRA formally entered into force on the 1st of April 2015.

Law 67/2013 and the new by-laws introduce some modifications in ANACOM’s institutional framework. The term of the mandate of the members of the board has increased from five to six years (non-renewable as before), the audit committee gave way to a single auditor and the advisory council disappeared). The Board of ANACOM is composed of five members. With regard to dismissal of Board members, according to ANACOM’s current statutes (approved in 2015) the Members of the Board may be dismissed by Resolution of the Council of Ministers based on justified grounds, namely

¹⁵ Number of staff in full time equivalents (fte).

¹⁶ In the sense of Art. 12 of the Authorisation Directive (Directive 2002/20/EC as amended by Directive 2009/140/EC).

¹⁷ Corresponds to the average value in the last 3 financial years of the costs (expenses) component, disregarding provisions, plus the average value of provisions in the last.

¹⁸ Idem.

in the event that serious fault is demonstrated in the pursuit of duties, as before. However, pursuant to the new by-laws, the finding of a serious fault is subject to an investigation undertaken by a body independent of the Government, preceding the hearing of the competent parliamentary commission. In the new by-laws some of the powers that ANACOM already had as established in sectoral legislation are now explicitly listed

The new Statutes maintain the provision that ANACOM is an independent administrative body. It is organic, functional and technically independent in the performance of its duties and is not subject to government oversight or authority in connection with this exercise, and members of the Government shall not address any recommendations or directives to its bodies or any employees as regards the Authority's regulatory action, or priorities to be adopted in the respective pursuit. This does not prevent ANACOM from supporting the Government in the communications field, under the statutes and the law, and shall be without prejudice to the definition by the Government of guidelines where ANACOM acts on behalf of the State and to the need for prior approval of acts provided for in these statutes (the activity plan, annual budget and accounts reports). It is also expressly provided that ANACOM is the National Regulatory Authority for communications, for the purposes of EU law and national law. Under applicable law, ANACOM, as the regulatory authority is entrusted to take an active part in the action and decisions of bodies of regulatory authorities, namely the Body of European Regulators for Electronic Communications and the European Regulators Group for Postal Service.

A relevant change, under the new statutes is that ANACOM is now fully submitted to the jurisdiction regime and financial control of the Court of Auditors. While the presentation of the annual accounts to the Court of Auditors was already compulsory under the previous regime the acts and contracts of ICP-ANACOM were not subject to the prior control by the this Court, as they now after the entry into force of the new by-laws.

47 NRA decisions were taken in 2014 in the area of Electronic Communications, related to the following issues: market regulation (4); universal service (6); contracts and user information (2); costing models and systems (4); dispute resolution (1); access (2); spectrum (10); authorisation (6); numbering (6); ITED/ITUR (2); Fees (4); other (3). Four decisions have been challenged although not decided in the reporting period.

Administrative fees charged for ANACOM's activities are laid down in Administrative Rule no. 1473-B/2008, as amended by the Administrative Rule no. 296-A/2013 and Administrative Rule no.378 — D/2013. ANACOM is entitled to charge fees for issuing declarations supporting rights, for the provision of electronic communications networks and services, for the allocation of rights of use of frequencies and numbering, as well as for the use of frequencies and numbering. The amounts of the so called administrative fees are determined according to the administrative costs incurred by ANACOM in the management, oversight and enforcement of the general authorisation scheme, as well as in the assignment of rights of use of frequencies and numbering — and their reservation. Furthermore Regulation no. 300/2009 as amended by Regulation no. 355/2012 sets out the procedure for the collection of the fees due to ANACOM. In relation to regulatory charges, operators have expressed concerns about the costs of judicial provisions to cover potential negative decisions in the proceedings against the NRA, which are currently financed with the administrative charges.

4.2. Authorisation and licences

Under the Electronic Communications Law undertakings which intend to provide electronic communications networks and services must previously submit to ANACOM a short description of the network or service they wish to initiate and give notice of the date upon which the activity is estimated to start. Following said notification, undertakings may immediately initiate activity, subject to the limitations resulting from the allocation of rights to use frequencies and numbers.

Undertakings that wish to provide electronic communications and do not have their actual registered office in Portugal, but exercise their activity there under the freedom to provide services, as set forth in Decree-Law 92/2010, of 26 July, which transposes Directive 2006/123/EC, are not obliged to establish a permanent representation in Portugal. A number of aspects relating to charges and fees imposed on providers of electronic communications are reported by stakeholders such as the inclusion in the administrative charges of the costs relating to provisions in judicial proceedings and issues concerning the municipal fees for access to infrastructure. Stakeholders have expressed their concern about these issues.

In 2014, law 55/2012, of 6 September (the Cinema and Audiovisual Law) which imposed a fee on operators for the provision of Pay TV services was amended. According to this regime, pay TV service providers are required to pay an annual fee of €2 for each subscription access to television services. Until 2019 a transitional period will apply, during which the applicable fee will amount to € 1.75 per pay TV subscriber. The income resulting from this fee will be allocated to cinema and audiovisual production.

5. SPECTRUM MANAGEMENT

Portugal had already carried out in 2011 a spectrum allocation process (multiband auction) for a period of 15 years renewable. The assigned spectrum is used to provide electronic communication services including mobile broadband and operators which acquired spectrum in the 800 MHz band have to fulfil certain coverage obligations. A part of the auctioned spectrum (around 25 % of the frequency bands) remained unsold. Further spectrum awards (including the remaining spectrum from the multiband auction) is under scrutiny.

Regarding measures for the liberalisation of spectrum use Portugal has implemented principles of service neutrality, spectrum trading and spectrum sharing in line with the RSPF although no significant trading/lease cases have taken place during the reporting period. With regard to bands assigned to MSS, the selected operators have not been authorised yet and no enforcement action has been taken. However, Solaris Mobile, Limited and Inmarsat Ventures, Limited have already submitted their notice to ANACOM under the general authorisation regime to provide MSS services. The authorisation procedure is ongoing, according to ANACOM's decision of 2011 which established that the provision in the national territory of MSS systems is subject to the allocation of a right of use of frequencies.

6. RIGHTS OF WAY AND ACCESS TO PASSIVE INFRASTRUCTURE

There is a long experience in access to passive infrastructure in Portugal, as it was one of the first countries to introduce this type of measure as part of the conditions for the concession contract with the incumbent operator. Since 2009 the rules and procedures governing the rights of way are regulated by national legislation, in particular Decree-Law 123/2009¹⁹ of 21 May (DL123), aiming at promoting the deployment of networks, including next generation networks and stipulating the information to be included in regulations which lay down the procedures for the allocation of rights of way in the public domain. These rules are binding upon public bodies, such as the State, Autonomous Regions and local authorities and upon bodies under their authority or supervision, performing administrative tasks, regardless of their public or private nature, and also public companies, concessionaries and other bodies holding infrastructures that integrate the public domain, besides being applicable to electronic communications companies and entities in possession of infrastructure which is suitable for accommodating electronic communications networks for use by said companies in the exercise of their activities.

Specifically concerning access permissions the DL123 establishes a maximum time limit of 20 days to respond to requests. Should this time elapse without an answer, the request is deemed to have been tacitly approved.

The DL123 makes access mandatory for undertakings owning or managing infrastructure suitable to accommodate electronic communications networks in a symmetric way. Notwithstanding, it determines that the provisions on this legal framework shall be without prejudice to the regime that applies to electronic communications networks and services provided for in the ECL. In this context, MEO (as SMP operator on ex-markets 4 and 5) is subject to more specific obligations under *ex ante* market regulation obligation by ANACOM. The DL123 establishes a set of obligations aiming to guarantee facility sharing, i.e. it imposes upon a group of entities the obligation to guarantee electronic communications service providers access to infrastructures suitable for the accommodation of electronic communications networks they own or manage. Regarding in-house infrastructure, the telecommunications infrastructures in buildings (ITED) manual establishes that NGA (optical fibre) wiring is mandatory for new buildings and symmetric infrastructure sharing obligation has been imposed.

In 2014, following a new tender launched in February, ANACOM signed in December a contract for the design, implementation and operation of the Centralised Information System (CIS), a geographical information system defined in DL123 and in line with the Broadband Cost Reduction Directive 2014/61/EU. In accordance with the terms of the contract, the CIS should be operational during the first quarter of 2016. CIS will be a repository of information about all infrastructures able to accommodate electronic communications networks (pipes, masts, ducts, inspection chambers, manholes, cabinets, buildings and other equipment). The CIS aims to ensure open, effective and non-discriminatory access to infrastructures able to accommodate electronic communications networks, on the principle of information sharing and reduce or eliminate barriers to the settlement of electronic communications networks. This regime will be particularly

¹⁹ Decree-Law 123/2009, of May 21st, amended and republished by Decree Law n° 258/2009 of September 25th and by the Law n. 47/2013 of July 10th subsequently amended by Law nr.° 82-B/2014, published on the 31th December and by the Portuguese Budget Law for 2015.

important and relevant for the development of next generation networks in accordance with the Directive 2014/61/EU.

The Portuguese Budget Law for 2015 modified the ECL²⁰ and DL123 in relation to infrastructure related fees charged by the municipalities. Under the new regime municipalities may continue to charge the fees for rights of way (the so called TMDP) and, besides that, may charge a remuneration for the use of infrastructures that pertain to the municipal public or private domain. Such remuneration must be cost-oriented (i.e. must attend to the costs of building, maintenance, repair and improvement of the infrastructure in question). Operators have expressed concerns in relation to the potential impact of these measures in particular in view of the extensive network deployment carried out in Portugal.

Concerning rights of way, the ECL states that undertakings shall be ensured: (i) the right to request, pursuant to general law, the expropriation and the constitution of public easements indispensable to the installation, protection and maintenance of the respective systems, equipment and further resources; (ii) the right to use the public domain, in conditions of equality, for the installation, crossing or passing over necessary for the installation of systems, equipment and further resources. According to the legal framework all authorities with jurisdiction over public domain shall develop and publish procedures for granting these rights which shall be efficient, simple, transparent and duly disclosed, non-discriminatory and quick, and a decision shall be provided within six months of the application, except in cases of expropriation. The conditions that apply to the exercise of rights shall also comply with the principles of transparency and non-discrimination.

7. CONSUMER ISSUES

7.1. The European emergency number 112

112 is the emergency number in Portugal and it is managed by the Ministry of Home Affairs. 115 still exists and calls to this number are subject to the same treatment as calls to the 112. According to the latest implementation report of the European emergency number 112 (results of the eighth data gathering round) published in February 2015, the total number of calls to 112 was over 10 million (10 600 000). False calls represented a 66.3 % of the total. Caller location information is provided via a push system, using a centralised database which is updated on a daily basis. Emergency service centres can handle calls in English. National emergency services can be accessed by disabled end-users through a video-call translation service. A specific very low cost tariff is applied to this video-conference service (1 eurocent/minute). SMS is also available as an alternative means of accessing emergency services. In 2014, Portugal has been working on the implementation of a new reorganisation of the PSAPs structure which includes two seats in Lisbon and Porto, measures to ensure integrity of the networks and efficient interconnections, and new process on how to handled and process the calls and information.

²⁰ Article 24, Law nr 5/2004, of 10 February: <http://www.anacom.pt/render.jsp?contentId=1099877>.

7.2. Number portability

Number portability ²¹		2013	2014
Fixed	Number of transactions	266,301	258,807
	% of total numbers	3.2%	3.1%
	Maximum wholesale price	4.6	4.6
	Maximum time under regulation (number of working days)	1	1
Mobile	Number of transactions	299,141	709,816
	% of total numbers	1.3%	3.1%
	Maximum wholesale price	4.6	4.6
	Maximum time under regulation (number of working days)	1	1

EU rules on number portability are transposed in the Electronic Communications Law. Undertakings responsible for the portability process must ensure that the transfer and activation is carried out within the shortest possible time and that where the subscriber has concluded an agreement to port a number, the effective porting of the number to the new undertaking shall occur within one working day at the most, and the loss of service shall not exceed the period of 3 hours. In 2012 ANACOM already adopted the Regulation²² on the implementation of the one working day rule except in some listed cases as when a physical intervention on the network is needed (3 working days following the presentation of the request) and the services for which portability is required are sold using distance contracts or ‘door-to-door’ sales (in the shortest possible time). Both fixed and mobile portability have experienced increases over the reporting period although substantially more pronounced in mobile portability (from 299 141 in 2013 to 709 816 in 2014).

7.3. Contractual obligations

Under the ECL, contracts with end-users may have a maximum duration period of 24 months. The Law also provides for the right to 12-month contracts, although consumer associations complained that information on such contracts is sometimes difficult to find on the operators’ websites. They also complained about the loyalty periods which in some cases are restarted with minimum changes in the contracts, although the possibility of withdrawing the contract in case of modifications is offered to both consumers and end-users within the time limit set out in the contract, in case they do not accept the new conditions proposed by the service providers. In this regard, ANACOM has been working on the implementation of new measures regarding transparency and comparability, in particular simplified information for end-users on contracts and services, with the aim of facilitating the understanding of the offers and contractual condition in use. In early 2015 a public consultation was launched on the proposals on common terminology to be used in the offers and contracts and a draft regulation on pre-

²¹ Source: figures provided by Portugal to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe.

²² Regulation n.º 114/2012 — Portability Regulation:
<http://www.anacom.pt/render.jsp?contentId=1120796&languageId=1>.

contractual and contractual information for electronic communications services which will implement, among other measures, a standard and simplified form with relevant information to enhance transparency, comparability and therefore end-users protection.

7.4. Other consumer issues

During 2014, ANACOM implemented a set of improvements in its tariff comparison and simulation tool (COM.escolha²³). The new version of COM.escolha was launched in February 2015 and includes several relevant new features with the objectives of: (i) reflect the evolution of the market (e.g. the introduction of information on the tariffs of Internet access via mobile phone and also on the costs of installing/activating and on the costs of acquisition/rental of equipment); (ii) add to the information included in the already existing comparison tools (information on the tariffs applied when subscribing a tariff plan) some comparative information on the costs applied when terminating a contract; and (iii) facilitate the updating, by the operators, of the tariff information made available at COM.escolha. The first version of COM.escolha had been launched in 2011. COM.escolha is promoted by ANACOM with the voluntary involvement of the operators, who are responsible for the introduction and updating of its tariff information.

8. UNIVERSAL SERVICE

The following services are included within the scope of universal service in Portugal: connection to a public communications network at a fixed location and provision of a publicly available telephone service over that connection; provision of a comprehensive directory and of a comprehensive telephone directory enquiry service; and, provision of public pay telephones. Currently the inclusion of broadband within the scope is not envisaged.

Portugal has been subject to two infringement proceedings and judgments by the CJEU over the past years regarding the implementation of the designation of universal service requirements under the Universal Service Directive (universal service was provided by the former incumbent under a concession contract awarded in 1995). In June 2014, the CJEU ruled (C-76/13) that Portugal has not taken all the measures to comply with its 2010 judgment (C-154/09) and ordered Portugal to pay a lump sum of € 3 million and a penalty payment of € 10.000 for every day of delay in complying with the Court judgment of 2010. Meanwhile, the selection procedure was fully concluded in 2014 and the designated providers started providing the universal service under the awarded contracts.

The new operators designated as universal service providers following the tender procedure were Optimus and ZON (now NOS) for the provision of the connection to a public communications network at a fixed location and the provision of publicly accessible telephony services and PT Comunicações (currently MEO) for the provision of public pay telephone services. NOS started to provide the service in June 2014, and MEO started in April 2014. For telephone directories and a directory enquiry service, the provider was not designated in the tender process due to the lack of bids by providers. Consequently, MEO was selected via direct award procedure for the provision of the

²³ <http://www.anacom.pt/tarifarios>.

service during a transitional period (for a period of 12 months, extendable for a further period of 6 months, ending in August 2015), and designated by Resolution of Council of Ministers in November 2013. The contracts with the designated providers were celebrated in February 2014.

Over the past year, given the lack of bids in the tender concerning telephone directories and a directory enquiry service, ANACOM has reassessed the model for the provision of this component of the universal service. Following a public consultation, a new tender procedure was launched in early 2015 for the provision of this element in the next three years. In order to increase efficiency and proportionality in cost and in view of the fact that there will be an obligation to provide an online directory, printed directories will be provided upon request while still free of charge for all citizens (until now printed directories were to be provided to all users, regardless of an expression of interest to receive them). In relation to the financing of this element of the universal service obligations, it is planned to be financed via the compensation fund of the universal service. Financing rules contain a fixed and variable component, with a maximum fixed cost of €2.1 million for the three years period and a variable cost of €1.5 per each printed and delivered directory. A maximum cap in terms of directories to be funded was established at €3.6 million directories for the whole period. The €3.6 million refers to the maximum number of directories that can be financed for the 3 years and not to the value of the financing which is based on the real number of directories printed and delivered multiplied by the cost of each directory plus the fixed cost. The maximum cap in terms of remuneration for the provision of telephone directories and a directory enquiry service is €7.5 million for the whole period (corresponding to €2.1 million plus €5.4 million (this corresponds to €1.5 euros x €3.6 million directories)). This model allows for the adjustment of the compensation to be paid to the universal service provider to the number of directories actually printed and delivered, thus minimising the impact of the financing obligations within the compensation fund.

As regards the financing mechanism, the Parliament approved in August 2012 a national law setting up a compensation fund to finance the net costs of universal service obligations, establishing that the cost will be exclusively financed by the providers of electronic communication networks and services, on the basis of their overall eligible turnover. The fund is managed by ANACOM. The compensation fund aims to compensate the costs incurred by the new universal service providers designated as a result of the tender procedure, as well as to compensate the net cost incurred by the incumbent operator from 2007 onwards which are approved by ANACOM, further to an audit. The Commission services have raised concerns regarding the compatibility of this fund and its implementation with the relevant requirements under Directive 2002/22/EC.

In January 2015, ANACOM adopted the final decision on the sharing of costs of €66.8 million for the 2007-2009 period and the providers to contribute to these costs: Grupo Cabovisão/Onitelecom/Knewon (€2.8 million); Grupo PT (€31.7 million); Grupo NOS (€18.6 million); Vodafone (€13.6 million). First payments are due in the Q1 2015, but alternative operators have expressed concerns about these payments which would most probably appeal the relevant decisions at national level. In relation to the costs for 2010-2011, the costs have been approved (approx. €23 million for each year) in November 2014.

9. NET NEUTRALITY

9.1. Legislative situation

In Portugal there is no specific legislation on net neutrality. The Portuguese Electronic Communications Law transposed the relevant requirements under the Universal Service Directive. No specific concerns in relation to net neutrality are reported in Portugal.

ANACOM has adopted a number of regulatory determinations addressing net neutrality aspects including (i) Decision on the use of the term ‘unlimited’ to describe offers of electronic communications services²⁴ particularly important in the case of internet access offers announced as *unlimited traffic offers and imposing a set of obligations* to electronic communications service providers to in this field; (ii) guidelines for minimum content to be included in contracts²⁵ including information on potential restrictions to access other services/features, the levels of quality of service to which the customer is entitled and for which the non-compliance determines the payment of compensation or reimbursement; and (iii) Determination on the object and form of public disclosure of conditions of provision and use of services²⁶. The two latter Determinations are under revision. On 30 December 2014, ANACOM approved the report of the public consultation held on the draft decision, approved in March 2014, on options for reviewing the determination on the guidelines on minimum content to be included in contracts.

9.2. Quality of service

In December 2013, ANACOM launched a new online tool NET.mede²⁷ which allows consumers to compare the actual speed obtained over user connections with the maximum speed contracted from their service provider. The test gives information about download and upload speeds and about the delay in the user’s connections. NET.mede also makes it possible to test traffic shaping — a mechanism used by operators to manage Internet traffic by applying restrictions to traffic and to contracted speeds. During its first year of implementation throughout 2014, NET.mede registered around 247 000 users, the majority for evaluating internet connection speed and the rest to check for traffic shaping management by operators of application speeds.

²⁴ <http://www.anacom.pt/render.jsp?contentId=1258832&languageId=1#.VNOYtiw4Jek>.

²⁵ <http://www.anacom.pt/render.jsp?contentId=419155&languageId=1> and <http://www.anacom.pt/render.jsp?contentId=808758&languageId=1#.VNOgDiw4Jek>.

²⁶ <http://www.anacom.pt/render.jsp?contentId=1101389>.

²⁷ <http://www.netmede.pt/>.

Romania

1. MARKET DEVELOPMENTS

Broadband indicators (December 2014)¹	RO 2013	RO 2014	EU 2013	EU 2014
Fixed broadband coverage ²	90%	89%	97%	97%
NGA coverage ²	66%	69%	62%	68%
Fixed broadband take-up ²	55%	54%	69%	70%
Share of >30Mbps subscriptions ³	55%	60%	21%	26%
Share of >100Mbps subscriptions ³	25%	49%	5%	9%
Share of DSL in fixed broadband ³	27%	26%	73%	70%
Incumbent market share fixed broadband ⁴	28%	27%	42%	41%
HSPA Mobile broadband coverage ²	100%	100%	97%	97%
LTE Mobile broadband coverage ²	25%	56%	59%	79%
Mobile broadband penetration ⁵	41%	54%	64%	72%
Market share of leading mobile network operator ⁴	43%	44%	35%	35%

Romania continued to make progress towards the achievement of the DAE objectives in 2014. Fixed broadband coverage is 89 % in Romania. Fixed broadband take-up in Romania is 54 % which is still among the lowest in the EU and below the EU average of 70 %. The number of fixed broadband lines reached over 4 million in January 2015 out of which 97 % is FTTx (3.89 million active lines)⁶. However, fast broadband (at least 30Mbps) subscriptions reached 60 % which is well above the EU average of 26 %. Ultra-fast broadband (at least 100Mbps) subscriptions reached 49 % also well above the EU average of 9 %. HSPA mobile broadband coverage is 100 % while mobile broadband penetration (3G and higher) reached 53.6%⁶. Mobile broadband users (3G and higher)

¹ Sources: coverage data — studies by IHS and VVA; penetration data — figures provided by Romania to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe (except fixed broadband take-up, provided by Eurostat).

² % of households.

³ % of fixed broadband subscriptions.

⁴ % of subscriptions.

⁵ Subscriptions per 100 inhabitants.

⁶ Source: Autoritatea Națională pentru Administrare și Reglementare în Comunicații (ANCOM).

reached over 10.7 million in January 2015⁶. LTE coverage stood at 56 % as of January 2015 below the EU average of 79 %. 3 operators were offering LTE services in October 2014 with a focus on urban areas.

The Romanian broadband market is characterised by platform based competition. Although the market share of the incumbent's (Telekom) DSL lines is 99.98 %⁶, in January 2014 the market share of the incumbent in fixed broadband slid to 27 %. In the fixed market, an alternative operator is the leading operator with a market share of 46.5 % as of December 2014⁶. The broadband market structure comprised 773 operators providing fixed broadband internet access (down from 781 in mid-2014), of which 34 by cable network, 171 by fibre, 164 by radio, 10 by xDSL, 635 by UTP/FTP cable.⁶ 37 new entrants were registered in the second half of 2014, using optical fibre, radio or UTP/FTP access technologies — according to the statistics reported by the operators.

NGA penetration as a percentage of total lines increased from 67 % in January 2014 to 75 % in January 2015 (second in the EU) and 15 % of NGA lines as percentage of population. However the coverage of rural areas with standard fixed broadband is only 80.2 %⁶.

As of September 2014 Telecom operators Romtelecom and Cosmote were rebranded as Telekom Romania. Romtelecom and Cosmote are part of Greek Group OTE owned by Deutsche Telekom.

Telekom Romania Communications S.A. (the former Romtelecom) remains the leading operator in the fixed market although its market share for all types of calls by traffic volume has decreased over the past year to 59.74 % from 60.8 % as of December 2014, In 2014 the voice traffic on fixed networks represented only 6 % compared with 94 % on the mobile networks.⁶

There are 5 mobile operators offering voice services in the Romanian market. One MNO concluded a national roaming agreement with another MNO. As a result of spectrum tenders carried out by ANCOM in September 2012, two operators undertook MVNO access obligations. By the end of 2014, there was one active MVNO on the market, while another 2 MVNO agreements were submitted to ANCOM.

In the mobile market, as of December 2014, the market share of the leading MNO (based on issued SIM cards) reached 44 %, followed by 29 % and, respectively, 22 % market share of the following two competitors.⁶

Orange entered in 2014 in a network sharing agreement with Vodafone. The agreement will be implemented by/in a new company.

As of December 2014, there were 36 suppliers of telephony services through VoIP in Romania, while 20 offered managed VoIP services. As of December 2014 the number of managed VoIP lines surpassed 1.9 million, out of which approximately 10 % corresponded to business users. The total managed VoIP originated traffic was 30 % of the total voice traffic through fixed networks in 2014, compared with 29 % in 2013.⁶

With regard to revenues, the average revenue per minute in mobile communications was 1.6 euro cent in 2013. For the same period, the average revenue per user in mobile communications was € 51.⁶

2. MARKET REGULATION

At the end of 2013, ANCOM concluded the analyses of the retail market for fixed access services, the wholesale market for fixed call origination and the wholesale market for national transit services in the public telephone network⁷. ANCOM has identified the market for national transit services in the public telephone network as susceptible to *ex ante* regulation (D1154/18.12.2013). Romtelecom S.A. (currently Telekom Romania Communications S.A.) has been designated as having significant market power on the defined market (D1/06.01.2014).

In February 2014 following the favourable opinion of the European Commission, ANCOM adopted the decisions setting the new maximum tariffs for the interconnection services for the purpose of call termination based on pure-LRIC⁸ and the new maximum tariffs for fixed transit services based on a LRAIC+ model⁹. From 1 April 2014, the maximum termination rates in Romania decreased from 0.67 eurocents/minute to 0.14 eurocents/minute for fixed call termination and, respectively, from 3.07 eurocents/minute to 0.96 eurocents/minute for mobile call termination. All SMPs have to charge the regulated tariffs for all calls terminated irrespective of their origin. Most obvious short-term impacts were the apparition of very low cost mobile offers on the market: 3.20 €/month for unlimited national / international calls + 5 GB of internet and 1.60 €/month for 100 national minutes + unlimited on-net + 3 GB internet; increased availability of no-frills offers for international calls to EU mobile numbers; mobile plans included in bundles (e.g. with fixed internet, with multichannel TV), convergent retail plans (fixed/mobile).

Throughout 2014, ANCOM has worked on the reviews of the market for wholesale network infrastructure access at a fixed location and the market for wholesale broadband access, which is forecast to be finalised in the first semester of 2015.

Fixed mobile substitution has been analysed in the context of the market reviews for retail markets (fixed access and internet broadband access) and for wholesale markets (fixed call origination and call termination at fixed location) with the conclusion that mobile services do not fully substitute fixed services. However, there are indirect competitive pressures exercised at the level of the retail market for fixed access by access to mobile telephony services that will be further monitored by ANCOM.

IP interconnection agreements are used by small operators between themselves. Big operators still require SS7 telephony signalling interconnection for voice termination.

With regards the migration of fixed networks towards IP interconnection infrastructure the incumbent has an IP migration Programme 2014-2017 under which IMS technology (VoIP) will fully replace PSTN.

⁷ Cases RO/2013/1533-1535.

⁸ Cases RO/2014/1547-1550.

⁹ Case RO/2014/1551.

3. BROADBAND PLANS AND FINANCING

The NGN national plan, coordinated by the Ministry for the Information Society aim to estimate the necessary infrastructure investments for attaining the 2020 Digital Agenda objectives and incentivising these investments through various means.

RoNET project was approved in October 2014 by the European Commission¹⁰ to support the deployment of backhaul networks in 'white areas' of Romania where broadband is currently not available and where there are no plans for broadband roll-out by market players over the next three years. The public support takes the form of grants. The overall amount of the measure is approximately EUR 84 million. A significant part (approximately 82 %) of the budget will be funded from the European Regional Development Fund (ERDF) (EUR 69 million) and the remainder from the State budget (EUR 15.5 million). The project has to be implemented by 31 December 2015.

One of the objectives of the recently adopted Romanian Operational Programme Competitiveness (2014-2020) financed from the ERDF is to support high speed broadband network deployment to a level of 100 Million Euro. In addition, the Operational Programme for Rural Development (2014-2020), funded by EAFRD is expected to programme an estimated 35 Million Euro for broadband infrastructure in rural areas.

Romanian Government adopted the Decision concerning the National Strategy for Romanian Digital Agenda 2020 on 7 April 2015.

4. INSTITUTIONAL ISSUES

4.1. The National Regulatory Authority

The *Autoritatea Națională pentru Administrare și Reglementare în Comunicații* (ANCOM) has been established by Emergency Ordinance 22/2009 concerning the setting up of the National Authority for Management and Regulation in Communications. ANCOM is responsible for all of the tasks assigned to national regulatory authorities under the regulatory framework for electronic communications in the EU.

	2014
Personnel ¹¹	617
Increase	-1.91 %
Budget	€ 72 Million
Increase	13 %
Administrative charges ¹²	Not perceived
Administrative costs ¹³	€ 42 Million

¹⁰ C(2014) 7622 final.

¹¹ Number of staff in full time equivalents (fte).

¹² In the sense of Art. 12 of the Authorisation Directive (Directive 2002/20/EC as amended by Directive 2009/140/EC).

¹³ Idem.

The president and two vice-presidents are appointed for six year mandates (which can be renewed once) by the President of Romania acting upon the proposal made by the Government.

The mandate of the president of ANCOM may be terminated only for well determined reasons: incapacity to fulfil the duties for more than 120 consecutive days within 140 days; criminal conviction established by final judgment without rehabilitation; failure to observe the three months deadline to end the incompatibility situation defined by the law; resignation; decease; end of the six year tenure of the mandate.

The decisions of ANCOM can be judicially reviewed as first instance court by the Bucharest Court of Appeal, Contentious-Administrative Chamber and as second instance court by the High Court of Cassation and Justice, Contentious-Administrative Chamber. In 2014 one decision of ANCOM was challenged regarding a dispute settlement on the obligation to negotiate an interconnection agreement. The decision is pending.

4.2. Authorisation and licences

No establishment requirements are imposed for EU undertakings willing to provide electronic communications services and/or networks on a temporary basis, under to the freedom to provide services.

On 14 November 2013, the Fiscal Code was amended through the Government Emergency Ordinance (GEO) No 102/2013, in order to include, among others, the tax on the value of special constructions. As ‘special constructions’ will be considered, *inter alia*, telecommunications lines and overhead cables (poles, circuits, cables, rails, brackets, etc.), communications networks and underground ducts, urban and interurban (except subsea and subfluvial telecommunications transmission medium of fibre optic cable systems) platforms, metal antenna towers and masts for radio, mobile phone, radio and TV as well as telephone booths. The tax was applicable from 1 January 2014, calculated by applying 1.5 % to the (gross) book value of constructions in the previous year. Industry stakeholders consider that during a critical period for the development of the sector (i.e. roll-out of 4G mobile and NGA networks) the tax on special constructions will lead to a decrease of investments in infrastructure by firstly reducing the funds available to operators and secondly by the increase of the direct costs associated for the new investments. The incumbent claims to be most affected because its ‘legacy’ network has the most sites deemed as ‘special constructions’.

5. SPECTRUM MANAGEMENT

At the beginning of 2014, ANCOM launched a public consultation with the aim to investigate the interest and the intentions of the market players to participate in a new selection procedure, for granting rights of use for the spectrum not yet awarded in the 800 MHz and 2600 MHz bands. All operators were extremely firm in expressing their lack of interest for that available spectrum in the next period (2014-2015). The operators might be interested in participating in a selection procedure for obtaining new spectrum usage rights only after 2015, when additional spectrum will become available below 1 GHz (in the 700 MHz band).

All licences in the 800 MHz, 900 MHz, 1800 MHz and 2600 MHz bands have been awarded on a technology and service neutrality basis. All licences in the 3410–3600

MHz band and the 3600–3800 MHz band were issued bearing in mind the technology and service neutrality; only the type of application has been stated in the licences.

The rights of use of radio frequencies may be transferred in accordance with art. 35 of the GEO no. 111/2011 to a third party, in total or in part, however, only after prior approval of ANCOM. The transfer of the rights of use shall not result in constraining, hindering or distorting competition. In cases where the use of radio frequencies is harmonised at European level, the transfer of the rights must not lead to changing the usage destination of the frequencies subject to the licence. In case of a partial transfer of the rights in the 800 MHz, 900 MHz, 1800 MHz and 2600 MHz bands, the licence holder may only transfer 5 MHz blocks, with all the obligations associated with or, for the TDD operation mode in the 2600 MHz band, only compact unpaired blocks of 15 MHz.

ANCOM organised in the second quarter of 2014 the auction for 5 DTT national multiplex licences, 4 multiplexes in UHF and 1 in VHF, in the DVB-T2 standard. One multiplex is dedicated to free-to-air (FTA) public services and is required to reach 90 % of the population and cover 80 % of the country by the end of 2016. Four other multiplexes are each required to employ at least 36 transmitters in their coverage area by 1 May 2017. The national public broadcaster Radiocom won 3 licences: the multiplex under the FTA obligation and two other multiplexes in the UHF band. The auction for regional and local multiplexes and for the remaining two national multiplexes concluded with 5 companies winning 9 regional multiplexes for the period 17 June 2015-17 June 2025.

6. RIGHTS OF WAY AND ACCESS TO PASSIVE INFRASTRUCTURE

The procedure for granting the rights of way is based on a request which must be answered in maximum 30 days. A written, objective and sound justification is required for denying access. If the request has not been answered within the term, it shall be deemed approved. In case of such tacit approval, the requestor will notify the start date of the works required for the access on public property, a date which cannot be sooner than 10 days from the date of sending the notification. The holders can exercise their right of access only upon the conclusion of a contract. The terms established by the contract must be non-discriminatory to all the providers of electronic communications networks.

Within 15 days from the date of concluding the contract, the administrator of the public property has the obligation to publish it on its website and to send a copy to ANCOM (where it will be available to any interested persons). Articles 11 and 12 Framework Directive had been transposed in national law by chapter III of the new Infrastructure law. Under the same law the obligation to allow the use of passive infrastructure may be imposed, on a case by case basis, to any owner of such infrastructure, provided the access is technically and economically feasible. As per art. 30 of the Infrastructure law mandatory NGA wiring is provided for those new buildings for which a construction authorisation is requested after January 1st 2013. ANCOM may impose on a provider of electronic communications networks or on the infrastructure owner the obligation to allow other providers of electronic communications networks to share in-building wiring. ANCOM has not yet mandated such obligation.

ANCOM is working on the draft of the legislation implementing the Directive 2014/61/EU on measures to reduce the cost of high speed broadband deployment. It is foreseen that Romania will respect the transposition deadline.

7. CONSUMER ISSUES

7.1. The European emergency number 112

Caller location information is implemented under current legislation while the requirements are detailed in ANCOM Decision 1023/2008 with subsequent amendments. ANCOM actively participated in the work of ECC/WG NaN/PT ES which yielded the ECC report 225 outlining steps towards improving accuracy and reliability of 112 caller location.

While 112 SMS is not available yet, it was tested by the PSAP operator with a view to implement an alternative access to 112 for disabled end-users. 112 is the sole emergency number used in Romania. Therefore the awareness on the European emergency number 112 in 2014 was one of the highest in Europe: 95 % would call 112 in case of an emergency, while 71 % know that 112 is available EU-wide.

7.2. Number portability

Number portability (October 2014) ¹⁴		2013	2014
Fixed	Number of transactions	56 088	58 874
	% of total numbers	1 %	1 %
	Maximum wholesale price	8	8
	Maximum time under regulation (number of working days)	1	1
Mobile	Number of transactions	136 581	298 406
	% of total numbers	1 %	1 %
	Maximum wholesale price	6	6
	Maximum time under regulation (number of working days)	1	1

Article 75 of the GEO no. 111/2011 transposes Article 30 of the Universal Service Directive. ANCOM President's Decision 351/2012 on the modification of the number portability regulations provides for the reduction of timeframes in which providers are required to perform specific activities associated with different phases of the porting process and ensures protection of subscribers throughout the switching process

¹⁴ Source: figures provided by Romania to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe.

7.3. Contractual obligations

The rules governing the minimum commitment period in Romania are enshrined in Article 50 para. 1 and 2 of the GEO no. 111/2011, which transposes the provisions of Art. 30 of the Universal Service Directive related to the minimum contractual period. Contracts concluded with consumers can only have an initial contractual period of no more than 24 months. Also, providers have to offer consumers contracts with a minimum commitment period of 12 months. These rules have not changed since the entering into force of the GEO no. 111/2011 in December 2011. In practice providers propose a minimum contractual period of both 24 and 12 months.

7.4. Other consumer issues

ISPs have the obligation to publish on their websites the values of certain administrative quality indicators set by ANCOM (the time necessary to provide Internet access, the fault repair time, the frequency of customer complaints, the frequency of the complaints related to billing) and the procedure of measuring these quality indicators. The providers of publicly available telephony services are obliged to provide information to the consumer regarding tariffs and conditions for obtaining and using services.

ANCOM's Interactive Tariff Guide — www.veritel.ro — has been available to end-users since 2013. This is an online 'price calculator' which performs, based on the user's options, comparative analyses of the standard tariff plans available on the market with regard to fixed telephony, mobile telephony, internet access and bundles. The project was largely financed by EU Funds (83 %). 548 operators are included in a database representing 99 % market share for voice services (fixed & mobile), 99 % market share for internet access services (fixed & mobile). The site had 47.000 unique visitors in 2014.

8. UNIVERSAL SERVICE

The following services are included in the scope of universal service in Romania: telephone services at household level, directory enquiry services and directories, and public pay phones. According to ANCOM president's decision 7/2011 a connection must ensure telephony services at a fixed location, including fax, and functional internet access which allows a best-effort download speed of at least 144 kbps (best effort). However, the functional internet access is offered upon request, on a commercial basis, and not as part of the universal service.

Currently no universal service provider is designated.

In February 2015 ANCOM imposed operators to create service packages for the disabled end-users. Users with hearing/speech disabilities will be able to choose mobile service packages including at least unlimited SMS on-net and 150 national SMS minutes at a tariff recommended by ANCOM, of maximum EUR 4/month, as well as monthly mobile internet traffic of minimum 300 MB, at a maximum download speed of 2 Mbps, at a recommended tariff of EUR 2/month. These users will also be able to buy fixed service packages including unlimited monthly internet traffic at a maximum download speed of 30 Mbps or, where this is not technically feasible, the maximum speed available in the commercial offers for residential users, at a maximum recommended tariff of EUR 7/month. Mobile service providers will offer sight-impaired end-users packages containing 300 national minutes at a maximum recommended tariff of EUR 2/month and,

upon the user's request, monthly national mobile internet traffic of minimum 300 MB, at a maximum download speed of at least 2 Mbps, at a recommended maximum tariff of EUR 2/month. Fixed internet and telephony providers will launch packages containing at least 350 national minutes per month at a maximum recommended tariff of EUR 3/month, VAT included, and, upon the user's request, unlimited monthly fixed internet traffic at a maximum recommended tariff of EUR 7/month.

9. NET NEUTRALITY

9.1. Legislative situation

The obligations currently imposed on providers of electronic communication services as regards net neutrality are the transparency obligations laid down by the Citizens Rights Directive and transposed by art. 51, 60 and 61 of GEO no. 111/2011. ANCOM has finished the public consultation for a project decision that establishes transparency obligations, including NN related transparency obligations. The decision will come into force at end of June 2015.

9.2. Quality of service

ANCOM has published in 2014 a Report regarding quality of internet access service for 2013 (available on ANCOM's website), which illustrates the evolution of administrative quality parameters.

ANCOM created a web-based application Netograf.ro aimed at testing the quality of the connection (download/upload speed, delay, jitter and packet loss) between the end-user's terminal equipment and a test server situated in an internet interexchange hub. The application is available for the public as of January 2015.

Slovakia

1. MARKET DEVELOPMENTS

Broadband indicators (December 2014)¹	SK 2013	SK 2014	EU 2013	EU 2014
Fixed broadband coverage ²	87%	87%	97%	97%
NGA coverage ²	54%	63%	62%	68%
Fixed broadband take-up ²	63%	70%	69%	70%
Share of >30Mbps subscriptions ³	26%	28%	21%	26%
Share of >100Mbps subscriptions ³	8%	9%	5%	9%
Share of DSL in fixed broadband ³	39%	38%	73%	70%
Incumbent market share fixed broadband ⁴	36%	34%	42%	41%
HSPA Mobile broadband coverage ²	86%	91%	97%	97%
LTE Mobile broadband coverage ²	24%	52%	59%	79%
Mobile broadband penetration ⁵	50%	62%	64%	72%
Market share of leading mobile network operator ⁴	42%	42%	35%	35%

The Slovak electronic communications market performed relatively well in 2014, with intensifying competition at retail level.

After a period of wider-scale investments into roll-out of FTTx technologies noted in recent years, the biggest broadband players such as Slovak Telekom and Orange have now limited their fixed NGA deployment to smaller local areas. The main way of deploying fibre optics has been via FTTH and FTTB. The fixed broadband penetration continues to grow at a steady pace, reaching the EU average of 70% of households in 2014. The competition in the fixed broadband market drove the market share of new entrants to 66% in January 2015. The penetration of NGA is relatively high at 33%

¹ Sources: coverage data — studies by IHS and VVA; penetration data — figures provided by Slovakia to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe (except fixed broadband take-up, provided by Eurostat).

² % of households.

³ % of fixed broadband subscriptions.

⁴ % of subscriptions.

⁵ Subscriptions per 100 inhabitants.

(January 2015), above the EU average. Nevertheless, the prevailing technology in the retail market remains xDSL where the incumbent holds 78 % (July 2014⁶), followed by WIFI (including FWA), FTTx and cable.

There is an evident trend towards increasing the fixed broadband speeds in retail offers, which is reflected also in a growing take-up of high speed and very high speed broadband. However, due to the Slovak market structure (relatively high market share of xDSL and WiFi) and resulting constraints presented by some technologies, as well as other factors, the majority of subscriptions remained within the category from 2 to 10 Mbps.

Mobile broadband services are gaining significant importance with 62 % of subscribers of Orange, Slovak Telekom and O2 now using broadband services over mobile handsets or other devices. Major investments have been made into roll-out of LTE networks by the two largest mobile network operators. In the second half of 2014, more than 170 000 subscribers used LTE technology for mobile access to internet. The third biggest mobile player is actively increasing its 3G coverage. The expected entry of the fourth mobile network operator has been delayed due to difficulties to reach a national roaming agreement. A request for dispute resolution had been submitted to the NRA in this regard. There are four brand resellers operating in the Slovak mobile market. The third mobile entrant has been closing up the gap in market shares. Mobile operators have responded to competition from OTT providers by offering their own messaging applications but these have not led to a significant uptake.

The total voice traffic over fixed networks has continued to decrease in volume. Most fixed operators consider voice products ancillary to other services offered, but maintain fixed voice service mainly in order to offer bundled products in view of increased competitiveness. One operator (Orange) offers fixed connections via mobile networks at customer premises. The share of subscribers using an alternative operator for direct access, and for national calls, has increased to 27.4 %. Similarly, there has been a steady increase in the market share of managed VoIP fixed calls⁷.

All major operators are striving to offer a wide range of services, combining all major platforms — fixed and mobile (both for voice and data), and TV. Yet only the two bigger mobile operators are able to compete on a broader scale in this respect, using their own infrastructure.

2. MARKET REGULATION

2.1. Market analysis

The main regulatory decisions taken by the NRA throughout the reporting period focused on the broadband markets.

The prices for collocation services in the former markets 4, 5, and 6 of the 2007 Recommendation were updated in August 2014. At the same time the NRA updated the access prices in the former market 6 of the 2007 Recommendation. In November 2014

⁶ Source: COCOM, July 2014.

⁷ Source: COCOM, July 2014.

the NRA notified the price control methodology for access in the former market 4 of the 2007 Recommendation (using bottom-up LRIC plus)⁸. In March 2015 the NRA published the draft prices based on this methodology for national consultations. The Commission reminded the NRA of the requirement to notify all draft measures on final prices to the Commission, or otherwise the lack such of notification could be seen as non-compliance with the requirements of the EU legal framework.

The NRA finalised the draft methodology for price calculation of the wholesale broadband access services in the former market 5 of the 2007 Recommendation (bottom-up LRIC plus model). However, following the appeal of the SMP undertaking against the market review decision, the Supreme Court cancelled this decision in September 2014 and returned the matter back to the NRA. The regulation in this market thus now reflects the situation from the first round of market reviews which was notified back in 2006.

Considering timing requirements, the NRA has struggled to catch up with the three-year timeframe for the periodic review of the broadband markets. In fact, in January 2015 it had requested an extension of the time period for submitting the market reviews for the markets 3b and 4 of the 2014 Recommendation by 31 March 2016 at the latest.

Overall, the impact of the regulatory decisions on the broadband markets has been somewhat limited. The LLU offer has still only been taken up by one competitor and is used for business customers only. 99% of DSL access by new entrants is through bitstream⁹, and is mainly used to achieve national presence in addition to their own infrastructure. Several smaller new entrants have repeatedly noted that further LLU deployment or wider use of DSL wholesale access products is unlikely considering the underlying cost and the level of current retail prices. Access to ducts is purchased by several undertakings.

The NRA has started data gathering for the three criteria test related to those markets no longer listed in the current recommendation on relevant markets.

The request for the dispute resolution submitted by the prospective fourth mobile entrant (Swan) in relation to national roaming (including pricing) has been pending with the NRA since November 2014. In October 2014, the Commission fined the incumbent Slovak Telekom and its parent company for abusive conduct in the Slovak broadband market¹⁰.

2.2. Access and interconnection

The incumbent Slovak Telekom moved its entire customer base to the internet protocol based network in December 2014. There were no issues reported regarding access obligations or IP interconnection.

⁸ Case SK/2014/1671.

⁹ Source: COCOM, July 2014.

¹⁰ Commission's decision of 16 October 2014 (AT.39523 — Slovak Telekom) pursuant to Article 102 TFEU and Article 54 of the EEA Agreement.

3. BROADBAND PLANS AND FINANCING

After significant delays and serious underspending of the public funds allocated to broadband development in the last financial programming period, Slovakia revamped the project for the current programming period 2014-2020. The Strategic Document for Digital Growth and Next generation Access Infrastructure (2014-2020) adopted in January 2014 outlines the project scenario and sets out a long-term objective to provide broadband coverage at the speed above 30 Mbps for the entire population by 2020, while accepting that in exceptional cases in remote areas the speeds delivered may not reach this level. The strategy also foresees a number of measures stimulating broadband uptake.

Building on the previous broadband development project, it is envisaged to deploy regional backhaul fibre networks to white zones primarily by the National Agency for Network and Electronic Services (NASES), which will also operate the networks once they are built. ERDF EUR 97.75 million is earmarked for this purpose, covering 91 % of white areas. The last mile connections are expected to be rolled out by the market. An additional EAFRD EUR 27.4 million is available for demand-driven projects to build open-access networks in areas where deployment of backhaul networks does not attract private investment into the last mile. As the project does not include a clear picture of the intentions of private undertakings to engage in covering the last mile, it remains to be seen whether the expectations will be met in this respect. The project, run under the Operational Programme Integrated Infrastructure, is in preparation phase for project documentation while the construction phase should start later this year. The managing authority is the Ministry of Finance.

It should be noted that given past experience, a close cooperation between the relevant state institutions, including the Ministry of Transport, Construction and Regional Development and the NRA, and a concerted effort to avoid further time delays, is paramount to successful execution of the project.

4. INSTITUTIONAL ISSUES

4.1. The National Regulatory Authority

Úrad pre reguláciu elektronických komunikácií a poštových služieb (Regulatory Authority for Electronic Communications and Postal Services, RU) has been established by the Act No 402/2013 on the Regulatory Authority for Electronic Communications and Postal Services and on the Transport Authority and on the amendment of other acts, merging the electronic communications and postal regulatory authorities into one entity as of 1 January 2014.

The merger has not affected the regulatory competences and responsibilities of the NRA related to the electronic communications sector. The budget of the NRA remained connected to the state budget through a budgetary subchapter of the Ministry of Transport, Construction and Regional Development. RU sets out the amount of administrative charges levied from the sector. These are transferred to the state budget. It should be noted that RU's number of personnel is gradually decreasing and is now even lower than before the merger of the two regulatory authorities. Similarly, RU's budget

has decreased by approximately 5 % compared with the NRA’s budgetary resources before the merger.

	2014
Personnel ¹¹	152
Increase/Decrease	-11.6 %
Budget	€ 4488 million
Increase/Decrease	-5.38 %
Administrative charges ¹²	€ 2024 million
Administrative costs ¹³	€ [...] million

During 2014, RU handled six dispute resolution requests. Four of them are still ongoing. The matters of the disputes related to interconnection, facilities sharing and national roaming. 36 appeals were filed against the first instance decisions taken by the NRA. The regulator upheld 17, annulled 6, and modified 13 of its decisions by the second instance administrative procedure. Four of RU’s final decisions have been challenged at the Supreme Court of Slovakia. While the court upheld three of the NRA’s decisions, the decision on the market review in the key broadband market of bitstream access has been annulled.

4.2. Authorisation and licences

Following an investigation by the Commission on the general authorisation regime with regard to duplication of conditions applicable to undertakings wishing to provide services in the electronic communications sector in Slovakia, RU revised the general authorisation rules and the concerns raised now appear to be settled.

The licences for mobile broadband are technology and service neutral. The following coverage criteria are included in the rights of use in the 800 MHz, 1800 MHz, and 2600 MHz frequency bands (assigned after auction in 2013): 25 % of population by the end of 2015, 50 % by 2017 and 70 % by 2018 for 800 MHz; 25 % by 2015, 50 % by 2018 for 1800 MHz; 20 % by 2015 and 25 % by 2018 for 2600 MHz frequency band. However, no specific requirements aimed at tackling the digital divide by imposing specific coverage conditions in rural areas have been set. A national roaming obligation is effective provided that the new entrant first covers at least 20 % of the population by its own network, which is a condition that the NRA confirmed fulfilled in March 2015. A minimum guaranteed transmission speed in all three bands is set at 2 Mbps downlink and 256 Kbps uplink (except for GSM in 1800 MHz).

Both selected MSS operators (Inmarsat and Solaris) may provide services in Slovakia after fulfilling all conditions set in the licenses. No enforcement action has been taken to ensure compliance with the conditions related to MSS services.

Access to numbering resources is not granted to over-the-top players. No requests have been submitted in this regard. Special entrepreneurial levies are imposed in certain

¹¹ Number of staff in full time equivalents (fte).

¹² In the sense of Art. 12 of the Authorisation Directive (Directive 2002/20/EC as amended by Directive 2009/140/EC).

¹³ Idem.

regulated sectors, including the telecommunications sector, as a temporary measure until 2016.

5. SPECTRUM MANAGEMENT

At the beginning of 2014, four licences were assigned for wireless broadband in the 800 MHz, 1800 MHz, and 2.6 GHz frequency bands following the spectrum auction in December 2013¹⁴.

As regards the 3.6 GHz frequencies, the NRA decided to split this band into two levels: nationwide and local, as the public consultation and workshop held to this effect showed interest in both nationwide and local licences. The nationwide licences were assigned in February 2015 to three players (O2, Swan, Benestra) following the auction carried out in 2014. The auction for the spectrum to be assigned at local level (71 localities) is expected to commence by the end of 2015.

The NRA was also preparing for the auctioning of 3.5 GHz spectrum band, as the current nationwide licences expire in August 2015. The new spectrum assignments, as well as the current ones, should allow for transfer of rights. However, following a call for interest in February, the auction was cancelled in March 2015 due to the fact that only one participant proceeded to the auction phase.

RU is also planning to assign the remaining frequencies in the 1800 MHz band by the end of 2015, but the preparation work is still at early stages. One of the open questions related to this band is the need to reshuffle the assigned frequencies mainly for two operators (but in general also with regard to all four operators) in order to create contiguous blocks to enable more efficient spectrum usage.

Plans for the future use of 700 MHz frequency band are not clear at present. There are currently more than 1.5 out of 4 DVB-T multiplexes in operation in this band. The relevant licences expire in 2029 so making them available prior to this date appears challenging.

6. RIGHTS OF WAY AND ACCESS TO PASSIVE INFRASTRUCTURE

A passive infrastructure mapping tool is currently not available. However, a new Atlas of Passive Infrastructure is envisaged to be developed under Operational Programme Integrated Infrastructure. Besides the electronic communications infrastructure, it is expected to include information on transport networks, water management systems and facilities, electricity and gas facilities and others, and should be linked with the national land registry portal.

Access to telecom passive infrastructure in Slovakia is mandated for the SMP player by way of access to ducts and infrastructure for deployment of metallic cables and blowing of optical cables where there is sufficient capacity. The NRA has competence to make decisions on infrastructure sharing (including cost allocation rules).

¹⁴ The fourth license (limited to 1800 MHz frequency band) was issued to a new mobile operator Swan.

Access to other utilities' infrastructure is not provided. Coordination of civil works infrastructure is not ensured by a specific central authority. There is no registry of permits for civil works. Planned network investments do not need to be communicated in advance. Infrastructure sharing is not mandatory for in-house infrastructure. NGA wiring is not mandatory for new buildings and renovations of old buildings.

The Ministry of Transport, Construction and Regional Development Report is preparing a draft amendment to the Electronic Communications Act in view of transposing the Directive 2014/61/EU on measures to reduce the cost of high speed broadband deployment.

7. CONSUMER ISSUES

7.1. The European emergency number 112

The Ministry of Interior organises continuous awareness campaigns on 112, targeting different audiences such as children, youth or the elderly population, for example. Drawing contests on issues related to 112 emergency systems are organised at schools in all regions of Slovakia on an annual basis. Open days are organised at all PSAP premises on European 112 day. Topics and events related to the 112 emergency number are covered regularly in national media. The awareness raising efforts are reflected in the high level of 112 awareness by citizens, which is consistently among the highest in the EU.

Alternative means of access to 112 for disabled end-users are not yet available.

7.2. Number portability

Number portability ¹⁵		2013	2014
Fixed	Number of transactions	65,131	93,705
	% of total numbers	2.2%	3.8%
	Maximum wholesale price	10.0	10.0
	Maximum time under regulation (number of working days)	4	4
Mobile	Number of transactions	137,507	116,720
	% of total numbers	2.4%	1.9%
	Maximum wholesale price	2.2	2.2
	Maximum time under regulation (number of working days)	4	4

The NRA carried out a public consultation in 2014 with a view to abolish or minimise retail charges for mobile number portability. Following regulatory pressure exerted by the RU, all major network operators offer number portability free of charge as of January

¹⁵ Source: figures provided by Slovakia to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe.

2015. Wholesale prices are not regulated. Some operators have noted lengthy and burdensome procedures when switching DSL customers.

7.3. Contractual obligations

The maximum commitment period for contracts, set for 24 months in the legislation, has not been changed in 2014. Consumer contracts and thus disputes regarding commitment periods may be subject to a judicial review. The judgments in this regard tend to evolve towards decreasing the sanctions for resigning from a contract during the commitment period. The communication of a substantial change of contractual conditions may take the form of a letter, electronic mail, SMS or a telephone message.

7.4. Other consumer issues

In 2014, the RU revised the general authorisation measure in order to facilitate strengthening of consumer protection in the telecoms sector. The originating operators are now required to include a voice message on pricing for calls to premium rate services prior to the call being connected. All providers are now required to provide itemised billing free of charge. The customers may choose whether this is done on paper or in an electronic format. Disabled end-users have to be informed of any measures taken to ensure equivalent access and of quality of service provided to them. The NRA has also launched a public test of a price comparison website for fixed broadband access to Internet.

The main sources of consumer complaints in the past year have been pricing and billing, contractual sanction for early termination of a contract, availability and quality of service, contractual conditions, retention strategies for number portability, and unsolicited communication. The results of the out-of-court dispute resolution mechanism provided by the NRA are binding for both parties.

8. UNIVERSAL SERVICE

The incumbent Slovak Telekom has been designated with universal service obligations since 2005. The scope of universal service obligations was reduced to provision of special measures for disabled end-users only in 2012. There has been no change in the requirements in 2014.

Requests for compensation for the provision of universal service have been received for the years 2005-2012. The conclusion from assessment of all request for compensation was that the provision of universal service did not constitute an unfair burden to the designated undertaking. The decisions on the compensation have not yet been finalised, due to court decisions and appeals of the universal service provider during the internal decision-making process of the NRA.

9. NET NEUTRALITY

9.1. Legislative situation

There is no specific legislation concerning net neutrality in place in Slovakia.

9.2. Quality of service

The quality of service requirements concern mainly the provision of transparent information on services offered. The amended general authorisation measure requires network providers and internet service providers to publish information on connection parameters (maximum download and upload speed), fair user policy (amount of monthly data limits, transfer speeds after exceeding the monthly data limit), information on blocking, slowing or prioritising selected ports or services, and information on the procedures applied to avoid filling or exceeding the capacity of the network connection, and on how those procedures may impact the quality of service.

The website for price comparison which is now in the testing phase also includes prices of fixed broadband access to internet. Users may find information on available offers according to the following selection criteria: place of residence, price, type of connection, transmission speed, data transfer limit, and type of bundle.

Slovenia

1. MARKET DEVELOPMENTS

Broadband indicators (December 2014)¹	SI 2013	SI 2014	EU 2013	EU 2014
Fixed broadband coverage ²	95%	95%	97%	97%
NGA coverage ²	76%	78%	62%	68%
Fixed broadband take-up ²	72%	71%	69%	70%
Share of >30Mbps subscriptions ³	6%	8%	21%	26%
Share of >100Mbps subscriptions ³	4%	5%	5%	9%
Share of DSL in fixed broadband ³	47%	45%	73%	70%
Incumbent market share fixed broadband ⁴	36%	35%	42%	41%
HSPA Mobile broadband coverage ²	99%	99%	97%	97%
LTE Mobile broadband coverage ²	63%	90%	59%	79%
Mobile broadband penetration ⁵	42%	47%	64%	72%
Market share of leading mobile network operator ⁴	49%	48%	35%	35%

The Slovenian electronic communication market registered some consolidation in the cable market with Telemach group taking over other cable operators (e.g. Kabel TV in Q4/2013 and Elektro Turnšek in Q2/2014) and reaching, according to NRA October 2014 data, 68.7% market share of the cable TV market and the biggest market share (28%) of pay TV connections, followed by the incumbent Telekom Slovenije (25%), with number of pay TV connections still growing for all operators. Telemach is also becoming the second operator after the incumbent for the number of connections, with Telekom Slovenije losing its market share of fixed broadband access connections compared with all alternative operators that increased their market share from 62% to 65% (from July 2013 to July 2014), significantly above the EU average of 58%. Cable

¹ Sources: coverage data — studies by IHS and VVA; penetration data — figures provided by Slovenia to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe (except fixed broadband take-up, provided by Eurostat).

² % of households.

³ % of fixed broadband subscriptions.

⁴ % of subscriptions.

⁵ Subscriptions per 100 inhabitants.

companies, also on behalf of enhancing their networks with hybrid coax and fibre network, are important players in the Slovenian market. ADSL/VDSL is still the leading technology with 46 % of all subscriptions, followed by cable, confirming the increasing trend from previous years and reaching 30 % of the broadband subscriptions. Fibre-based subscriptions (FTTH/B) represent 22 % of all subscriptions, significantly above the EU average of 7 %. Overall FTTH, cable (DOCSIS 3.0) and VDSL connections are growing and NGA broadband connections reached 39 % of all broadband subscriptions, well above the EU average of 27 %.

Six new operators entered the Slovenian market in 2014 with one new entrant in fixed telephony (FVNO), one in broadband (FTTH) and two in the TV market (cable and IPTV). The Slovenian market showed some attractiveness for foreign private investors with the acquisition of Telemach, a major cable operator by the American Investment Fund KKR (Kohlberg Kravis Roberts) shareholder in Telenor group. Further consolidation was announced by Telemach with the intention to acquire Tušmobil, the third mobile operator holding, according to NRA October 2014 data, the 12.6 % market share and strategic spectrum in the 800 MHz recently assigned in the big bang spectrum auction. The Competition Authority authorised the acquisition/merger in December 2014 Telekom Slovenije has also announced the acquisition of the service provider Debitel which was traditionally already offering services on the incumbents' network.

The incumbent Telekom Slovenije is ongoing a privatisation process. After the expiry of the bidding deadline in March 2015 the sellers received only one binding bid from a financial investor.

Operators invested much more in fixed networks than in mobile networks, in particular in upgrading copper and building fibre networks, while mobile operators continued to build, upgrade and maintain 4G networks also following the spectrum auction assignments. Mobile operators share passive infrastructure (i.e. towers, base stations locations, masts) based on commercial agreements and one-to-one principle (one passive infrastructure element for another comparable passive infrastructure element). While standard speed between 2 to 10 Mbps is the most requested, a slow increase is reported for speeds over 30 Mbps, yet not considered enough to justify some investments by operators, such as implementation of vectoring. Slovenia is still very low as regards penetration of fast broadband above 30 Mbps that reached 1.8 % of subscriptions as % of population, well below the EU average of 6.9 %.

In the mobile market the incumbent is still the leading mobile operator even though it continued to lose market share at the advantage of the three competitors (Simobil, Tušmobil, T2). Telekom Slovenije registered a mobile market share of 48.8 %, which is the 3rd highest market share of a leading mobile operator in the EU countries. Mobile market share of the main competitor Si.mobil is 29.4 %, followed by Tušmobil with 12.6 % and T-2 with 2.8 % market share. Mobile broadband penetration is quite low in Slovenia, with 47 % compared with the EU average of 72 %. However following the assignment of digital dividend LTE mobile communication should increasingly play a role in providing basic internet access to Slovenians, and supplementing the development of fixed broadband infrastructure, especially in rural areas, in view of the special coverage obligations imposed on the awarded licences. T2 was undergoing a bankruptcy procedure and therefore is the only mobile operator that did not acquire additional spectrum in the auction.

At the end of 2014 the two major operators Si.mobil and Telekom Slovenije offered LTE services based on 1800 MHz and 800 MHz, with around 31 % of Telekom Slovenije's and 29 % of Si.mobil's base stations being upgraded to the LTE (as from the end of the 2014) and an estimated coverage of 89.7 % of the population.

In the fixed voice market the concentration is high if compared with other EU countries with Telekom Slovenije having a 58.4 % market share of the incumbent but progressively losing market share. VoIP market segment continues to grow and has already reached 64.6 % market share on the fixed telephony market. The number of business VoIP connections is growing among all the operators.

Penetration of fixed telephony in terms of population is only slightly decreasing (from 38 % in October 2012 to 35.8 % in October 2014). The NRA research from October 2014 confirms that 62 % of households are not yet considering cancellation of a fixed telephony connection due to the use of mobile telephony.

Slovenia has bundled-offer penetration of 72 % which is the highest in the EU (EU average 41 %). In this context, 55 % of subscription is based on double play bundles.

Based on available data, AKOS didn't notice any drop in usage of operator services due to availability of OTT services, instead usage of services in international roaming increased, also due to attractive offers in recent time (e.g. 2.9 EUR/day unlimited voice/SMS and 1 GB data roaming incl. fair use above 1 GB limited to 64 kbps). Operators offer some additional services over the mobile network (e.g. mobile POS payment instrument called Moneta provided by Telekom Slovenije, Si.mobil and Debitel).

2. MARKET ANALYSIS

2.1. Market regulation

During 2014, the NRA finalised both fixed and mobile call termination market analyses and published its final regulatory decision imposing related remedies on operators.

For the wholesale market for voice call termination on individual mobile networks (market ex 7 of the 2007 Recommendation), the NRA finalised in April 2014 the new price cost model with the calculation of the pure BU-LRIC price. The Commission required the NRA to clarify that for defining the mobile termination markets there is no differentiation with regard to the origin of the call. Therefore, the market definition should also include the termination of calls originated directly or indirectly from non-EU/EEA operators, in line with the EU Regulatory Framework. However, this applies only to the directly interconnected operators within internal EU market and does not apply for those interconnections outside of it.

In the final measures issued in July 2014 access and interconnection, non-discrimination, transparency, price control and cost accounting obligations were imposed to the four MNOs (Telekom Slovenije, Simobil, Tušmobil and T-2), with a regulated mobile termination rate of 0.0114 EUR/min. calculated based on the LRIC model, that took effect from 1 September 2014. AKOS took into account the comments of the Commission in defining the relevant market, but allowed MNOs to apply different rates

to directly interconnected non-EU/EEA operators, in view of the competitive situation on the international transit market and the bargaining power of the non-EU/EEA operators.

On the fixed call termination market the NRA calculated a pure BU-LRIC (Long Run Incremental Costs) fixed termination rate (FTR) based on the recently acquired price cost model. AKOS considered the requirements of Commission Recommendation on termination rates⁶. The NRA adopted its decisions in September 2014 and imposed a fixed termination rate (FTR) of 0 000876 EUR/min. price on 12 undertakings having significant market power (SMP) on their respective networks taking effect from 1 November 2014. AKOS proposed to impose on each operator designated with SMP the following obligations: (i) access to, and use of, specific network facilities (including IP interconnection); (ii) non-discrimination; (iii) transparency; and (iv) price control and cost accounting.

Overall according to the NRA data of October 2014 the most used wholesale access product on incumbent fixed network is local loop unbundling (LLU) on both xDSL wholesale market, with 69.8 % of unbundled access (LLU) and 30.2 % of bitstream, and also on FTTH wholesale market, with 90.0 % of LLU and 10 % of bitstream. Currently, over 19 % (end of 2013 14 %) of all Telekom Slovenije's FTTH connections are unbundled. As regards the incumbent's copper network acceding operators registered a considerable increase of faults and of prolongation of the response time for removing malfunctions.

In view of the delay with the three-year cycle provided in the Regulatory Framework, new market analyses are expected, in line with the new Recommendation on relevant markets, concerning the newly defined broadband markets of wholesale local access provided at a fixed location (new market 3a), of wholesale central access provided at a fixed location for mass-market products (new market 3b) and of the wholesale high-quality access provided at a fixed location (new market 4, including leased lines for which the latest remedies date back to June 2008). The NRA is planning to conduct those analyses in 2015 benefiting from the newly available data gathered from operators in application of the improved transparency obligations in ZEKom-1 that resulted in an enhanced infrastructure mapping system provided by the Ministerial project.

Telekom Slovenije has reached a settlement in December 2014 with the MNO Si.mobil on the pending Džabest case related to predatory pricing and margin squeeze, for which the Slovenian Competition Authority already defined that the incumbent had violated competition rules, but Slovenian Supreme Court overturned that decision in November 2013 for procedural irregularities and incomplete finding of facts. The new decision of the Slovenian Competition Protection Agency is expected during 2015.

2.2. Access and interconnection

The NRA mandated the transition to the IP interconnection with its 2014 regulatory decision on the market for call termination on individual public fixed telephone networks. Telekom Slovenije has an obligation to provide existing TDM

⁶ Commission Recommendation C(2009) 3359 of 7.5.2009 on the regulatory treatment of fixed and mobile termination rates in the EU.

interconnections for at least one year after adoption of the decision and to notify operators half a year prior to closure of TDM interconnection points.

The NRA needs to monitor correct application of obligations related to the IP interconnection market. The NRA doesn't require notification of interconnection agreements. Alternative operators are registering some delays in the passage to IP. There have not been any registered IP interconnection disputes in the country.

3. BROADBAND PLANS AND FINANCING

The responsible Ministry for Education, Science and Sport has consulted key stakeholders in August 2014 on elements regarding a national broadband plan including a 100 Mbps target, only for investments from structural and other public funds. This target should also commit Slovenia to reaching the high speed broadband targets of the Digital Agenda for Europe by 2020. The draft plan was contested by operators due to the need for clarification about the applicability of the ambitious target (only white areas or the whole national territory) and to its credibility if related to the limited public resources available. They further requested to reinforce the economic assessment, to take into account past experiences and to better integrate the role of mobile broadband into the overall strategy. The Ministry launched a ministerial consultation of a revised broadband plan in March 2015. The plan would require according to the Ministry an estimated EUR 766 million of investments (of which EUR 273 million of public resources) to reach the 100 Mbps for all target.

In the financing period 2007-2013 Public Private Partnership (PPP) projects in 'white spot' areas led by municipalities with open-access fibre networks reaching the consumers (FTTH) were supported by a total amount of approximately € 84 million public resources (GOŠO1 and GOŠO2).

Conditions for access to those networks are defined on a contractual basis and can be supervised but there is no extra regulation imposed by the NRA. However, some operators active on those networks are lacking an ensured quality of service also linked to the limited resources of some network operators (owners) to operate the open communications networks.

Plans for the use of ESIF⁷ (European Structural and Investment Funds) in the financing period (2014-2020) foresee an overall allocation of EUR 57.52 million of EU resources for broadband deployment above 100 Mbps with EUR 50.02 million from the European Regional Development Fund (ERDF Operational Programme), 12.5 millions of national co-financing and EUR 7.5 million from the European Agricultural Fund for Rural Development (EAFRD Programme), with further EUR 2.5 million of national co-financing. The Ministry is striving to get missing financial resources needed for broadband deployment in rural white spots.

Slovenian project promoters demonstrated significant interest in the use of the Connected Communities Initiative (CCI) with two proposals belonging to the category of mature projects (business case).

⁷ Indicative amounts.

4. INSTITUTIONAL ISSUES

4.1. The National Regulatory Authority

Since 2013 the *Agencija za komunikacijska omrežja in storitve Republike Slovenije* (AKOS), Agency for Communication Networks and Services of the Republic of Slovenia, is the renamed successor of the Post and Electronic Communications Agency of the Republic of Slovenia (APEK)⁸. The Government approved the new Statute of the Agency in April 2014.

AKOS⁹ is responsible for all of the main tasks assigned to national regulatory authorities under the regulatory framework, and is competent also for dispute resolution and the management and control of the radio frequency spectrum. In addition, the NRA has different tasks as the supervision of audiovisual media services, and the regulation and control of the market for postal and railway services in Slovenia. The Information Commissioner fulfils certain tasks related to the e-privacy Directive.

	2014 (planned)
Personnel	79 full time equivalents
Electronic communication resources (including proportional part of general services)	58
Increase	0 %
Budget NRA	(6.614.170 €)
E-communication resources	4 918 million €
Auction	1 013 million €
Increase NRA	+9.48 %
Administrative charges NRA	(6.608.670 €)
E-communication resources	4 918 million €
Auction	1 013 million €
Administrative cost NRA	(6.644.809 €)
E-communication resources	3 607 million €
Auction	0 522 million €

The approval by the Government of the 2014 Work Programme and Financial Plan has been delayed due to the required prior consent by the NRA Council which has not been obtained in time. Due to late approval of the 2014 Work Programme and Financial Plan in December 2014, tariffs for 2014 were not adopted and AKOS was financed based on tariffs from 2012. The tariffs and the Work Programme and Financial Plan for 2015 have been instead approved without delays in December 2014. The 2015 budget should allow

⁸ Decision on the establishment of the Post and Electronic Communications Agency of the Republic of Slovenia (Official Gazette of the Republic of Slovenia, no. 60/01, 52/02, 80/04 and 35/11).

⁹ *Agencija za komunikacijska omrežja in storitve Republike Slovenije* (Agency for Communication Networks and Services of the Republic of Slovenia).

for an increase in the NRA's human resources already planned for several years to improve the efficiency in the regulation of the telecommunication markets and spectrum management and to accomplish new tasks assigned to the Agency.

In 2014 AKOS faced some accusations of lack of transparency after refusing a request for disclosure of information regarding the LTE auction (study analysis, bid amounts and base prices) due to the confidentiality of the auction process and business secrets of operators. Applicants appealed to the Information Commissioner, who ordered AKOS to disclose the information regarding the bid amounts and the studies. AKOS challenged this decision at the Administrative Court. However, in March 2015 the Administrative Court has ordered to AKOS to disclose the requested information. In 2014 AKOS received 79 requests for access to information, which is less than in 2013 (90 requests). In 75 cases request has been granted, in 3 cases request has been denied

The NRA cooperates with the Competition Authority and asks for non-binding opinions on certain cases (e.g. market reviews, certain agreements between telco operators). In December 2014 the General Court ruled that the Commission was entitled to reject Si.mobil complaint related to predatory pricing and margin squeeze, because the national competition authority was already dealing with the case¹⁰.

During 2014 the total number of decisions issued by the Agency in the field of Electronic Communications was 5009 dealing with market regulation (16), dispute resolution between operators (1), dispute resolution between operators and end-users (729), spectrum allocation (1142), authorisation (368 notices), numbering (29), equipment conformity (711), universal service (4) and supervision procedures (2009). The high number of supervision procedures is related to the establishment of easement (contractual rights of way), but they also relate to electronic communications networks and services, security, radio spectrum, users' rights and unsolicited communications.

During 2014, 13 decisions of the regulator were challenged in front of the Administrative Court. In 2014 the Administrative Court adopted 20 decisions in the field of Electronic Communications (judgments, procedural decisions) and upheld 17 AKOS decisions, stopped 2 administrative disputes and quashed 1 decision. Two disputes between undertakings were initiated in 2014. One dispute concerned the refusal by a municipality for joint construction of electronic communication networks.

4.2. Authorisation and licences

Any natural person or legal entity who wishes to provide electronic communications networks and/or carry out electronic communications services needs to notify its intention in writing to the NRA its intention and follow general conditions as described in the Electronic Communications Act (ZEKom -1). There are no fees for the registration process, but once the company is registered (notified) as an operator, it is obliged to pay a yearly fee that depends on the income derived from electronic communications networks and services in Slovenia.

¹⁰ Judgment of the general Court in Case T-201/11 of 17 December 2014.

In the year 2014 there were 152 operators in the Slovenian market, with 6 new operators and 3 operators that stopped with their activities. There were 6 cross-border providers with headquarters abroad and a branch in Slovenia.

Electromagnetic field limits are stricter in Slovenia than the ones set at EU level in Council Recommendation of 12 July 1999, however no particular concerns have been raised by the operators in relation to the deployment of LTE.

During 2014 the incumbent RTV Slovenija acquired new rights in FM spectrum in applications of Art 5(2) Authorisation Directive allowing exceptions to open procedures for the granting of individual rights to use spectrum and in accordance with Slovenian national law¹¹ following the Broadcasting Council decision to use the frequency 92.9 and 95.3 MHz in JESENICE 2.

Licences are issued to both of the MSS operators (Inmarsat and Solaris). There is no enforcement action taking place in Slovenia.

5. SPECTRUM MANAGEMENT

Significant progress has been noted in 2014 with awards of vital spectrum that gave the market better chances to fulfil the increasing demand for wireless services, bridge the digital divide and avoid distortions of competition. AKOS completed in April 2014 a multiband public electronic auction for 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, and 2600 MHz spectrum based on the second price rule combinatorial clock auction model (CCA) and assigned radio frequencies to successful bidders in May 2014. No complaints have been filed against the spectrum assignment decisions.

The winning bidders were Telekom Slovenije, Si.mobil and Tušmobil with licences awarded for a period of 15 years, with the exception of the 2100 MHz licence issued to Si.mobil which will expire on 21 September 2021. Allocated frequencies in the 800MHz, 2100MHz and 2600MHz bands were made immediately available for use while the new licences for the 900MHz and 1800MHz spectrum will be valid from 04 January 2016, once existing licences for the frequencies have expired.

LTE is expected to play an important complementary role in ensuring internet access, especially in rural areas. In addition to general coverage obligations imposed to all bidders, a special coverage obligations have been imposed to Si mobil the winner of a specific lot of 800 MHz band with the aim of ensuring 95 % coverage of Slovenian population in 3 years with an outdoor speed of 10 Mbps. On top of this, 225 out of 300 listed settlements need to be covered with wireless broadband after three years and the operator needs to provide the service substituting fixed wireless broadband access (FWBA) with a minimum 10 Mbps downlink speed or a minimum data transfer rate of 2 Mbps to consumers who do not have the option of receiving a suitable alternative broadband connection in the area of the base stations used to cover those 225 settlements. Operators may use any of the assigned frequency bands to fulfil these obligations. The overall amount raised in the auction was nearly 149 million euro for a total assignment of

¹¹ Art 33(5) of the Electronic Communications Act with the usage of Art 13(2) of the Radio and Television Corporation of Slovenia Act.

2 x 200 MHz paired and 1 x 70 MHz unpaired. Tušmobil was assigned the two blocks of 2x10 MHz in the 800 MHz band that were reserved for new market entrants or existing operators with maximum 15 % market share of mobile users.

The NRA already started with the preparatory phase in view of a public tender leading to the assignment of the 700 MHz and launched in November 2014 a public procurement procedure for the provision of consultancy services and auction software with a flexible timeline. This acceleration raised some concerns among the operators. Strategic guidelines from the Ministry and the Government of the Republic of Slovenia on the assignment of the 700 MHz band are expected in relation to general frequency space management issues, timeline for granting the available frequencies, transitional period for usage of frequencies, frequency sharing, complementary role of the mobile communications for broadband access to the internet and coordination with neighbouring countries. Slovenia will act in accordance with decisions of WRC-15.

All wireless broadband bands have been authorised for neutral use. Spectrum trading and sharing is enabled according to Slovenian legislation, subject to the consent of the NRA. AKOS issued 5 decisions in 2014 on trading of the broadcast radio frequencies, but all were related to mergers/ acquisitions /takeovers of FM broadcasting companies.

6. RIGHTS OF WAY AND ACCESS TO PASSIVE INFRASTRUCTURE.

Slovenia made significant progress in further improving the already existing passive infrastructure mapping, covering the telecommunications and utilities infrastructures. The consolidated cadastre of commercial public infrastructure is available in GIS format to providers and is managed by the Surveying and Mapping Authority of the Republic of Slovenia (GURS), accessible to both public and private stakeholders, although under different conditions. In line with the new requirements of the Electronic Communication Law which entered into force in January 2013 the communication infrastructure mapping has been implemented in 2014 with the inclusion of new data on network termination points provided by operators. The new systems enable citizens to have online information about the level of connectivity, type of physical connection (cable, copper, fibre) and the maximum supported bandwidth speed at the particular geographical location. Furthermore, for each location it is recorded if the broadband infrastructure is actually being utilised or not, although this data are available only to the NRA, in view of business secrets considerations. Digital information has enabled the Ministry to develop an automated market interest process where operators may decide if they wish to provide networks for the given areas. For the areas that are not commercially interesting the white areas can thus be determined automatically. The mapping will be further refined with the inclusion of additional information (e.g. available space in existing ducts) which can be used by operators and should better support the infrastructure sharing through transparency.

The NRA is using both public databases of GURS (public utility infrastructure and database of termination points) to establish its own database, which will include also other relevant spatial data, mostly above ground, to establish tools for all the analysis needed. The project includes also the mapping of the fibre backhaul of BTS.

Administrative units and the Ministry of Environment and Spatial Planning are competent for granting building permits (for fixed and mobile networks) and they shall

issue decisions within two months of the receipt of a complete application. In many cases for simple communication facilities there is no need to obtain a building permit¹².

Slovenia has a well-developed legal system to encourage coordination of civil works, co-deployment and passive infrastructure sharing, also cross-sector. There are obligations to roll-out empty ducts suitable for electronic communication when public works are undertaken and the NRA can impose sharing, also in case of investments in other types of public infrastructure, such as transport, energy, municipal and water infrastructure.

Following new competences assigned to AKOS through ZEKom-1 in relation to investments into networks, the NRA performs checks on rights of ways contracts and coordinates with local communities to promote the construction of electronic communications networks defining the conditions in their spatial planning documents. All rights of way contracts need to be notified by the operators. The NRA verifies if contracts contain the provision of admissibility of common use and of the financial compensation of the right. In 2014 operators notified 913 contracts to the NRA. No appeals were received in this regard.

The NRA also publishes investors' notices regarding the start of planning of construction of civil works, promotes the shared use of other commercial public infrastructure and supervises the demands for joint constructions and shared infrastructure. Notification to the NRA of planned construction works is compulsory for all investors in electronic communications network and investors in all types of public infrastructure, including electricity, gas networks, public roads and railway. There are time limits of at least 30 days before ordering of the final project for the submission to the competent authorities for permit granting (when building permit is needed), or 60 days prior to the commencement of works. They have to issue a call for possible co-investors in the joint construction that is published on the AKOS website. In case of interest, investors must plan their networks in a manner that enables electronic communication networks and associated infrastructure to be built at the same time. Several years after its introduction in 2009 and its improvement in 2012 the system of compulsory announcements of planned investments on the AKOS website the awareness regarding the publishing announcements and searching for co-investors is rising and in 2014 there were 137 projects published on AKOS's website regarding fixed and mobile networks, public infrastructure (water, gas) and common investments. The coordination mechanism already led to some co-deployment.

The NRA has dispute settlement competence if the investor in public communications networks and other electronic communications networks, constructed in public interest (e.g. networks for the purpose of security, policy etc.) fails to reach an agreement with the party interested in the sharing. During 2014 the NRA dealt with a dispute concerning the refusal by a municipality for joint construction of electronic communication networks. The NRA started the mediation procedure on contractual conditions for setting the proportions of the investment and the opposing parties started joint construction of communication networks. If the mediation will not lead to settlement AKOS will

¹² Rules on simple communications facilities and maintenance of communications facilities (Official Gazette RS, 77/13).

continue the dispute settlement procedure and decide on the dispute by a binding decision in line with existing legislative requirements in the Electronic Communication Act.

Access to the telecommunications passive infrastructure in Slovenia is mandated on an asymmetric basis on the SMP operator. A symmetric infrastructure sharing obligation has been imposed in ZEKom-1, also in relation to in-house infrastructure. The Agency can impose on providers of electronic communications networks an obligation to share the wiring inside buildings or up to the first distribution point, wherever justified on the grounds that duplication of such infrastructure would be economically inefficient or physically impracticable.

In December 2014 the Ministry held a public hearing and published a call for inputs in view of legislative amendments to the electronic communication law (ZEKom-1) with the aim of transposing the measures to reduce the cost of high speed broadband deployment (Directive 2014/61/EU). The NRA is finalising an impact analysis and a stakeholder’s consultation to define current state of the joint construction and sharing of public infrastructure, propose additional transposition measures and assess optimal organisation to cover additional competences and resources needed for the infrastructure investments monitoring activities.

7. CONSUMER ISSUES

7.1. The European emergency number 112

Caller location accuracy and reliability criteria are defined in specific national rules on quality of services for emergency calls to the single European telephone emergency number. In the fixed networks caller location is generally sent to the nearest PSAP by dedicated data connection. In mobile networks an accurate determination of the caller location is based on information of base station coverage with a three steps probability with location presented on a GIS system. Moreover, the Administration for civil protection and disaster relief (URSZR) responsible for emergency call handling and dispatching developed a service called Smart locator (3D-GIS with integrated Smart locator, smartphone location identification system), for which EENA gave an award for outstanding emergency services innovation in year 2014.

Disabled end-users may use emergency call services through SMS112 and WAP112 services (awarded innovation from EENA in 2009) developed in cooperation with the Faculty of electrical engineering.

7.2. Number portability

Number portability ¹³		2013	2014
Fixed	Number of transactions	50,257	62,888
	% of total numbers	3.7%	4.5%

¹³ Source: figures provided by Slovenia to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe.

	Maximum wholesale price	0.0	0.0
	Maximum time under regulation (number of working days)	1	1
Mobile	Number of transactions	62,552	77,639
	% of total numbers	2.8%	3.4%
	Maximum wholesale price	0.0	0.0
	Maximum time under regulation (number of working days)	1	1

The number of fixed and mobile telephone number transaction is growing. Slovenia is close to EU average in terms of portability rates. The number of complaints related to number portability is limited (5 disputes in 2014) and mainly referring to the length of porting the number, proceedings however discovered false and incomplete data on forms and account numbers.

7.3. Contractual obligations

Subscribers must be notified of any change to the terms and conditions laid down in the subscription contract not less than 30 days prior to the proposed introduction of the changes.

The NRA defined in 2013 detailed modalities for the publication of the notice, requesting a written notice for subscribers (e.g. addressed notice, bill, e-bill, SMS for prepaid mobile phone users) and a general notice on the operator's website and offices/shops. Additional requirements were defined on the need of a precise indication of the change to the terms and conditions in the subscriber contract; the information on when the change will come into force and the provision of a consolidated text of changed terms and conditions. The operators should also explicitly indicate the right for the consumer to withdraw from the subscriber contract, by the defined deadline, without a notice period, without paying the costs of termination of the subscriber contract and without a contractual penalty, if the subscriber does not accept the changes. Consumers should be informed that additional information is available on the operator's free phone number and in the operator's office.

Regarding the terminal equipment Slovenian legislation additionally prescribed the right of end-user to opt between two possibilities: choose to return to the operator an amount that corresponds to a proportionate part of the total value of the terminal equipment and retain the terminal equipment, or return the terminal equipment in the state in which it was delivered to him and pay the user fee applying to the period of use of the terminal equipment, with the operator returning the purchase amount to him.

7.4. Other consumer issues

The NRA has taken some initiatives in 2014 to improve tariff and conditions transparency issuing recommendations to operators on how to avoid misleading offers and offering an overview of instruments for limits/blockage in mobile services. The Agency is also finalising an application to provide comparable information on offers and prices on a dedicated website www.komuniciraj.eu that should be launched in September 2015 and should help end-users in making informed decisions but will however not include more sophisticated comparative tools, nor any ranking mechanism.

The Consumer Protection Act is a key regulation in the area of consumer protection and regulates consumer rights in relation to legal entities, while the Electronic Communication Act focuses on certain specific matters in the field of electronic communication. Acts are in supplementing relation, therefore neither duplicity nor inconsistency were detected. In dispute resolution procedures, the Agency mostly relied on Consumer Protection Act provisions on distant contract that regulate a right of withdrawal without penalty and without giving a reason in a cancellation period of 14 days.

The NRA dealt with 726 consumer complaints in the electronic communications sector in 2014 and issued 134 binding decisions, rejected 179 complaints and helped to achieve 408 settlements. The main sources of complaints were unjustified invoices (more than 50 %), payments, and unavailability of service, difficult access and change of contractual conditions.

Following the proposal from the NRA of defining a Recommendation on the method of setting the reimbursement to consumers in the event of non-operation or poor quality of service the operators adopted a self-regulating code for the compensation of malfunctioning or poor functioning public communications services in cooperation with the Consumer protection association and the Council for electronic communications. This code that entered into force in June 2014 is in principle ensuring higher protection levels for consumers, defining principles regarding the malfunctioning or poor functioning of the communications services and outlining financial compensation measures for the consumers. Furthermore, operators are obliged to provide the contractually agreed internet speed at least 80 % of the time.

Among relevant consumer issues misleading practices through enrolment to SMS clubs represented a problem for Slovenian mobile users. The NRA organised in June 2014 a joint conference with the consumer NGOs, the Market Inspectorate and other relevant stakeholders that led to increased operators engagement in raising awareness and informing end- users against deceptive practices in the market. Operators also implemented specific measures in order to protect end-users (such as special warnings to end-users prior to joining the SMS club) and the NRA published warnings to end-users on how to avoid joining the SMS club.

8. UNIVERSAL SERVICE

The NRA designed new universal service (US) providers in November 2014. Telekom Slovenije is the designated provider for the provision of access at a fixed location and provision of telephone services for a period of two years. The short timeline is linked to the fact that Slovenian ECA introduced the possibility for inclusion of broadband speeds for the functional access to the internet within the scope of universal service. The NRA will in the following year analyse the market and determine the functional speed for internet through a General act prescribing the speed for the functional internet access based on which the next designation will be done. The USO will be financed through a Universal Service Compensation Fund to which operators are obliged to contribute based on the decision of the NRA.

The NRA decided also to maintain public pay phones in the scope of the US since there were many calls on the emergency numbers from public pay phones and end-users

clearly supported the maintenance of public payphones in their living areas. The designated universal service provider for public pay phones and other public voice telephony access points is Telekom Slovenije, for which a glide path for reduction in the number of public phones was specified for the following five years. TS media is the designated universal provider for directory enquiry and directories for a period of 5 years.

Measures to ensure equivalence of access and choice for the disabled end-users and special rates for ensuring affordability for disadvantaged users with special social needs were included into all three tenders.

9. NET NEUTRALITY

9.1. Legislative situation

The net neutrality provision in the Slovenian Electronic Communication Act (ZEKom-1) introduced at the end of 2012 strict rules on any restriction to internet neutrality and prohibits all unequal treatment of internet traffic e.g. hindering, blocking or throttling of internet traffic except in special circumstances. The law introduced also limitations on defining internet access services, on the basis of internet services and applications used by the end-users through internet access services.

During 2014 the NRA started supervision procedures against four different mobile operators for alleged infringement of net neutrality rules. In January 2015 the NRA issued two decisions against Telekom Slovenije (for providing free music data streaming via a so called Deezer service) and Simobil (for providing free data transfer to their data storage called Hangar Mapa). The NRA decisions to terminate those services enforce net neutrality rules prohibiting unequal treatment of internet traffic to companies that are offering so called 'zero-rating' services (free access to some services). The NRA decision did not take into account the non-binding opinion of the Slovenian Competition Authority, who based on the request for an opinion from the same complainant (The National Council for Electronic Communications) considered that per se prohibition of zero rated services might be detrimental rather than beneficial for consumers and that the assessment of the legality of the mobile operators' offers should be based on the effects of provision of such services.

9.2. Quality of service

AKOS is responsible for quality of service implementation and the monitoring of the quality of service (QoS) in the sector, and specific aspects such as internet speed and other parameters. The NRA is also entitled to impose minimum standards of the QoS with a decision. In January 2015 the NRA signed a contract for the provision of QoS-measurement system and the system should be functional by the mid-2015. The NRA is further considering adopting secondary legislation defining QoS aspects in 2015.

Spain

1. MARKET DEVELOPMENTS

Broadband indicators (December 2014)¹	ES 2013	ES 2014	EU 2013	EU 2014
Fixed broadband coverage ^{2 3}	-	95%	97%	97%
NGA coverage ²	65%	73%	62%	68%
Fixed broadband take-up ²	63%	65%	69%	70%
Share of >30Mbps subscriptions ⁴	15%	23%	21%	26%
Share of >100Mbps subscriptions ³	6%	11%	5%	9%
Share of DSL in fixed broadband ³	77%	70%	73%	70%
Incumbent market share fixed broadband ⁵	47%	45%	42%	41%
HSPA Mobile broadband coverage ²	99%	100%	97%	97%
LTE Mobile broadband coverage ²	47%	76%	59%	79%
Mobile broadband penetration ⁶	68%	77%	64%	72%
Market share of leading mobile network operator ⁴	36%	32%	35%	35%

One of the most positive developments in the Spanish market in recent years has been the substantial investment in FTTH deployment, made in spite of the decrease in the sector's revenue which has partly been driven by a substantial reduction of the prices of the offered services. Operators have implemented comprehensive plans for FTTH deployment. Telefonica was the first provider to deploy and commercialise FTTH, and Jazztel, Vodafone and Orange have since followed suit. Deployment has been accelerated by the signing of several agreements on FTTH co-investment and co-deployment, notably the 2012 Telefonica/Jazztel shared deployment agreement and the 2013 Vodafone/Orange co-investment agreement. Cable operators have also upgraded their networks with DOCSIS 3.0 in recent years and the total number of connections has now reached a total slightly above 10 million. At the end of 2014, Spain had almost 13 million broadband active lines and FTTH was spreading rapidly, with 8.8 million new deployed

¹ Sources: coverage data — studies by IHS and VVA; penetration data — figures provided by Spain to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe (except fixed broadband take-up, provided by Eurostat).

² % of households.

³ This indicator cannot be compared with that of last year in Spain.

⁴ % of fixed broadband subscriptions.

⁵ % of subscriptions.

⁶ Subscriptions per 100 inhabitants.

connections in 2014 and active lines reaching over 1.5 million. Regulatory measures (both symmetrical and asymmetrical) also contributed to this fast deployment of FTTH including the obligations imposed by the *Comisión Nacional de los Mercados y la Competencia* (CNMC) (the National Markets and Competition Commission) via the reference offer of access to ducts (MARCo) and the symmetric obligations for in-house wiring adopted by the NRA in 2009. The new Telecommunications Law adopted in 2014 also contains legislative measures to facilitate and reduce the cost of NGA deployment.

There have also been developments towards consolidation in the Spanish market during the reporting period. In March 2014, Vodafone confirmed the acquisition of Ono, the largest cable provider. On 23 May, the transaction was notified to the Commission, which concluded on 2 July (Case M.7231⁷) that it did not give rise to competition concerns. In October, the Commission was notified of Orange's acquisition of Jazztel. In December, it opened a phase-II investigation to assess the proposed transaction (Case M.7421⁸). In May 2015, the Commission approved under the EU Merger Regulation the acquisition conditional upon a number of commitments to ensure effective competition in the Spanish market.

With regard to developments in providers' market shares⁹, the competitive situation in the broadband market has resulted in a fall (to 44.9 % by end of 2014) of the incumbent Telefonica de España S.A.'s share of fixed broadband subscriptions, although this is still above the EU average of 41 %. New entrants' market share is 55 %, below the EU average of 58 %. Telefonica remains the leading operator in the fixed voice market (all fixed calls by traffic volume), and its market share for all types of calls by traffic volume has stayed in similar levels for the last two years, at 49.8 % share. In the mobile market, the market leader's (Telefonica) share continued to decline, from 34 % to 31.6 %, followed by 22.7 % market share of its main competitor (Vodafone) and 45.6 % of the other competitors (Orange, Yoigo and the mobile virtual operators).

Bundled offers continued to consolidate as the most competitive model in the Spanish market. Operators continued to launch new commercial offers and consumer switching rates between providers remained very high. Neither 4- nor 5-play existed in 2012, but they now (only two years later) account for 63 % of all bundles in the market¹⁰ (almost 8 million convergent bundles), since Telefonica started to provide a new set of 4-play bundled offers, Telefonica Fusion products, that combine fixed and mobile services (voice and broadband). Competitors reacted quickly with similar commercial offers, with 2014 representing the consolidation and generalisation of this competitive model, based on 4-play offers provided at attractive prices. Currently 60 % of all broadband lines are contracted with mobile services and 95 % of all broadband fixed lines being bundled. More than 60 % of all pay-TV subscribers have a bundled-offer contract. During 2014 Telefónica also launched a 5-play commercial offer which included pay TV, at reduced prices. In July 2014, the National Commission for Market and Competition (CNMC)

⁷ M.7231 Vodafone/Ono:
http://ec.europa.eu/competition/elojade/isef/case_details.cfm?proc_code=2_M_7231.

⁸ M.7421 Orange/Jazztel:
http://ec.europa.eu/competition/elojade/isef/case_details.cfm?proc_code=2_M_7421.

⁹ Sources market shares developments: CNMC-Data and 2014 Reports: <http://data.cnmc.es/datagraph/>.

¹⁰ Sources bundled offers in Spanish Market: CNMC-Data and 2014 Reports:
<http://data.cnmc.es/datagraph/>.

updated its methodology for analysing Telefonica's commercial offers to also refine its analysis of bundles including audiovisual services.

2. MARKET REGULATION

2.1. Market analysis

The CNMC plans to finalise its third round of market reviews in 2015. The review includes the revision of mobile, fixed, broadband, leased-lines and broadcasting markets. The completion of the regulatory review has suffered delays in certain markets *vis-à-vis* the three-year review cycle under Article 16(6) of Directive 2002/21/EC, especially as regards market 2 (Rec 2007) and broadband markets (Rec 2007) although CNMC launched public consultation on the latter in December 2014. The CNMC's 2015 action plan (adopted in January) includes the review of these markets and of ex market 15, which was last reviewed in 2006. The completion of the market review process is reported as a key aspect by market players in view of the rapid market developments and the need for updated regulatory measures and effective NRA remedies.

In April 2014, the Commission received the CNMC's notification of draft measures concerning remedies for the market for call origination on the public telephone network provided at a fixed location in Spain (pertaining specifically to the review of wholesale line rental (WLR) prices¹¹). In May, a Commission Decision pursuant to Article 7(3) of Directive 2002/21/EC urged the CNMC to finalise its market review process for market 2 (Rec 2007) and to notify it to the Commission as soon as possible. Since then, the CNMC has updated the prices of the regulated wholesale services in 2011 and the new market review has been announced for 2015

In December 2014, the CNMC launched a two-month public consultation on the regulation of broadband markets in Spain¹². The consultation ended in February 2015 and the CNMC is now analysing the responses before adopting a final proposal to submit to the Commission, BEREC and NRAs. The CNMC indicates in the draft proposal that the measures to be notified will follow the guidelines in the Recommendations on relevant markets¹³ and on costing and non-discrimination methodologies¹⁴. The proposal also contains specific measures for the business segment in view of the market analysis' findings of constraints in the effective competition in this market. The Telecommunications Market Commission (CMT) published a report on the competitive situation in this segment as long ago as 2011. The new proposed measures will complement those imposed according to former market 6 (terminating segments of leased lines) reviewed in 2013.

¹¹ Case ES/2014/1584.

¹² <http://www.cnmc.es/CNMC/Prensa/TabId/254/ArtMID/6629/ArticleID/1044/La-CNMC-lanza-una-consulta-p250blica-sobre-la-regulaci243n-mayorista-de-los-mercados-de-banda-ancha.aspx>.

¹³ Commission Recommendation 2014/710/EU of 9 October 2014 on relevant product and service markets within the electronic communications sector susceptible to *ex ante* regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services, OJ L 295, 11.10.2014, p. 79.

¹⁴ Commission Recommendation of 11 September 2013 on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment (2013/466/EU) — 'the 2013 Recommendation'; O.J. L251, p.13.

In January 2014, the CNMC adopted a final resolution on the review of prices in the wholesale broadband access market in Spain following the phase-II investigation¹⁵ and the Commission Recommendation in accordance with Article 7a of Directive 2002/21/EC formally asking the CNMC to amend or withdraw the draft notified measure. The final CNMC resolution reduced the prices for the existing legacy bitstream offers (GigADSL and ADSL-IP) by an average of 18%. It also set the prices for the new enhanced L2-bitstream offer (NEBA) significantly (up to 55 %) lower than the interim prices set in 2012. NEBA includes bitstream access to the new FTTH network.

During 2014, the CNMC continued performing an ex ante replicability test of Telefónica's retail products and special offers. During 2014, a total of 48 products and 270 special offers were analysed. In January 2014, the CNMC fined Telefónica of € 250.000 for non-compliance with the obligation of communication of broadband commercial offers under the existing broadband markets regulation.. In April, it fined Vodafone € 3.1 million for failure to comply with its obligations under the Roaming Regulation. In October, it replied to a consultation by an association of mobile operators clarifying that MNOs are obliged to guarantee wholesale access in conditions allowing MVO to compete at retail level and that 4G technology is not excluded of market 15 regulation. In November following notification of the acquisition of Distribuidora Television Digital, S.A. (DTS) by Telefónica de Contenidos, S.A.U. (part of the Telefónica S.A Group), the CNMC Board adopted a Resolution on the opening of a phase II investigation regarding this acquisition. On April 23 CNMC approved the concentration with commitments by Telefónica¹⁶. This acquisition is of relevance for the Spanish telecoms market in view of the growing importance of bundles of services (such as pay –TV) in the Spanish market.

2.2. Access and interconnection

The CNMC has imposed reporting obligations on Telefónica in order to better monitor the evolution of the network towards NGN and the state of the IP interconnection market on the basis of IP interconnection agreements. Furthermore, as established by CNMC, Telefonica had to present an IP interconnection reference offer proposal for termination services. This offer has to be reviewed by the CNMC before its publication.

In July 2014, the CNMC notified the Commission its analysis of the wholesale markets for call termination on individual public telephone networks provided at a fixed location in Spain. The notification followed a national consultation in April and May. In July, the Commission issued a so-called "no-comments" letter¹⁷ pursuant to Article 7(3) of Directive 2002/21/EC. In October, the CNMC adopted its final resolution on the review of market 3 (Rec. 2007), with an average 85 % reduction for fixed termination rates (almost 89% for alternative providers and 80% for Telefónica). The price for fixed termination rates (€0.0817/min.) was calculated using the bottom-up pure-LRIC cost model developed in 2013, in line with the Commission Recommendation on termination rates¹⁸.

¹⁵ Case ES/2013/1466.

¹⁶ http://cnmc.es/Portals/0/Notas%20de%20prensa/20150423_NP_Tel_DTS_DC.pdf

¹⁷ Case ES/2014/1635.

¹⁸ Commission Recommendation C(2009) 3359 of 7.5.2009 on the regulatory treatment of fixed and mobile termination rates in the EU.

3. BROADBAND PLANS AND FINANCING

In 2013, the Spanish Government adopted the *Agenda Digital para España* (ADpE) (Digital Agenda for Spain) setting out a comprehensive national ICT strategy for 2013-2015 to meet the DAE objectives. The ADpE centres on six main objectives and nine implementation plans, including one for telecommunications and high-speed networks. One of its main objectives is to create the conditions for the deployment of high-speed networks.

In May 2014, the main legislative measure provided for in the ADpE was completed, with the adoption of the Telecommunications Law (9/2014), replacing Law 32/2003. The new Law provides for the adoption of a national strategy on ultra-fast networks containing all necessary measures to ensure universal access to broadband connectivity at a minimum speed of 10 Mbps by 2017 and 30 Mbps by the end of 2020. By that time, at least 50 % of households should have access to services offering speeds of over 100 Mbps.

The plan for telecommunications and high-speed networks is managed by the *Secretaría de Estado de Telecomunicaciones y para la Sociedad de la Información* (SETSI) (State Secretariat for Telecommunications and the Information Society) in the Ministry of Industry, Energy and Tourism (MINETUR). It contains three sets of specific measures: (i) supporting fixed high-speed network deployment; (ii) high-speed mobile coverage (notably through the availability and more efficient use of spectrum); and (iii) demand (including at SME, residential and public administration levels).

Its implementation also foresees coordination by the SETSI with regional and local administrations. The ADpE implementation plans are monitored and reviewed via Annual Reports. In November 2014 the first monitoring report for the telecommunications and high speed networks plan was adopted.

The Plan also contains a € 200 million programme to extend next-generation broadband, which will provide financial support to bring at least 100 Mbps connectivity to small and medium-sized municipalities in white areas and improve backhaul and access networks providing at least 30 Mbps connectivity in other white areas. The SETSI manages the financing in accordance with Ministerial Order IET/1144/2013. The Commission was notified of the financing measures and considered them compatible with EU state-aid rules (Decision SA.35834 (2012/N)). In April 2014, a first call for proposals was launched, with € 7 million in direct financing and € 60 million in loans with favourable conditions; of 91 projects proposed, 64 projects by 29 providers received € 52 million (€ 7 million in direct financing and € 45 million in loans).

October 2014 saw the adoption of the partnership agreement setting out Spain's strategy, priorities and arrangements for the use of European Structural and Investment Funds in 2014-2020. The strategy is coordinated by the Ministry of Finances and Public Administrations (MINHAP) in cooperation with the SETSI in the field of information society and telecommunications. The partnership agreement foresees to devote € 2 billion¹⁹ to enhancing access to, and the use and quality of, information and communication technologies in line with the ADpE and DAE, including the modernisation and deployment of high-speed networks.

¹⁹ Indicative amount.

4. INSTITUTIONAL ISSUES

4.1. National regulatory authority

	CNMC 2014
Personnel ²⁰	511 (58 ²¹)
Increase	<i>Not comparable with previous figures.</i>
Budget	€ 52.767.610 ²²
Increase	<i>Not comparable with previous figures.</i>
Administrative charges ²³	N/A
Administrative costs ²⁴	N/A

In Spain there is a division of regulatory functions between two national regulatory authorities. The CNMC is the independent NRA under the regulatory framework responsible for regulatory tasks as regards market analysis and resolution of disputes in the electronic communications sector. It was established following the adoption of Law 3/2013 in June 2013 as a new cross-sector competition and regulatory authority in the fields of audiovisual, transport, postal and energy (the CNMC came into operation in October 2013, which means that 2014 is the first full year of functioning). The *Ministerio de Industria, Energía y Turismo*, through the *Secretaría de Estado de Telecomunicaciones y para la Sociedad de la Información* (SETSI) is the NRA and ministerial department in charge of electronic communications policy and legislation; it also has competences in several areas such as spectrum and users' rights.

The new Telecommunications Law has amended the national transposition of the EU regulatory framework for electronic communications, including the distribution of competences between NRAs. The new law implements a reattribution of a set of competences such as numbering or the management of the registry of operators to the Ministry of Industry, Energy and Tourism. The Commission stressed the importance of ensuring that, as the independent NRA under the EU regulatory framework, the CNMC is vested with the necessary competences to deliver independent and effective market regulation in Spain. The Law also foresees that the effective reattribution of competences will be implemented through a Royal Decree that was under the administrative process of adoption at the end of the reporting period.

The CNMC Law (3/2013) and the Telecommunications Law (9/2014) have also changed the arrangements for implementing the NRAs' budget, financing and management of

²⁰ Number of staff in full-time equivalents (fte).

²¹ CNMC staff in December 2014 (58 assigned full-time to the Telecoms Directorate). It does not include employees working for horizontal departments partially devoted to telecom, such as legal services, administration, statistics or IT.

²² CNMC's total budget foreseen for 2014 under the General Budget of the State Act.

²³ Within the meaning of Art. 12 of the Authorisation Directive (Directive 2002/20/EC as amended by Directive 2009/140/EC). Under Law 3/2013 of 4 June creating the CNMC, administrative charges from the telecom sector belong the Treasury.

²⁴ Specific data on administrative costs for 2014 within the meaning of Article 12 of the Authorisation Directive are not available.

authorisation charges. The Telecommunications Law tasks the Ministry of Industry, Energy and Tourism with managing authorisation charges under the Authorisation Directive. According to the Law, all authorised providers have to contribute an annual charge of up to 1.5/1000 of their gross income to finance the regulatory costs incurred by the NRAs in the management, control and execution of their regulatory activities. The Law provides for the adoption of a Royal Decree establishing a system for calculating these costs. The Royal Decree was under the administrative process for its adoption at the end of the reporting period. The CNMC Law provides for the CNMC's budget to be established under the General Budget Law on the basis of a draft proposal adopted by the CNMC and submitted to the Ministry of Finance via the Ministry of Economy and Competitiveness. Under the Law's budgetary provisions, the CNMC is to use a system of analytical accounting to calculate the costs of its activities. At the end of the reporting period, however, the system had yet to be adopted. It will be implemented in 2015, after an extension being provided by the General Auditing of the State Administration given that 2014 was the first year of full operation of the merged authority.

Under the CNMC Law, the CNMC president and board members are appointed for a non-renewable six-year term. Three board members are replaced every two years. The Government appoints the president and board members by Royal Decree after proposal by the Ministry of Economy and Competitiveness. The appointment process involves a hearing in the relevant parliamentary committee, which can veto (by absolute majority) the board members proposed by the Government.

As regards the strategic planning and programming of NRA policy objectives and regulatory activities, the CNMC Board adopted a strategic plan for the new authority in May 2014. This is based on three main objectives and 16 lines of action. Parliamentary programming and control have also been strengthened as a consequence of Law 3/2013 and the creation of the CNMC. The strategic plan objectives are pursued via more detailed annual action plans. In January 2015, the Board approved the 2015 action plan, which sets out 148 actions points, including some key actions in the field of electronic communications such as: (i) the completion of the third round of relevant market review (including former markets 4, 5, 2 (Rec. 2007), and 15 (Rec. 2003)); (ii) the application of the new methodology for the *ex ante* control of retail offers; and (iii) the calculation of the net cost of universal service obligations and providers' contributions to the sharing mechanism.

The plan also contains actions on internal organisation and decision-making processes, in particular in relation to the full Board and Chambers decision-making, internal cooperation between CNMC directorates, and human resources.

138 decisions were taken by the Board of the CNMC in relation to the electronic communications competences of the authority in 2014. This is a lower number than in the previous years, due to the new structure of CNMC. Some decisions that were taken by the Board in CMT are not taken by the CNMC Board any longer. For instance, the CNMC Law does not provide for the possibility to appeal CNMC decisions before the Board. On the other hand, as a merged body, decisions previously addressed to the Competition Authority are now crossed reports between CNMC Directorates.

For the reporting period most disputes relate to market regulation including market analysis procedures, pricing and review of reference offers (28), dispute resolution (21) and disciplinary proceedings (24). The relevance of taxation and charges aspects

affecting the Spanish telecoms market is also evidenced by the number of decisions taken by the NRA in this field (32). The rest of the decisions relate to reports and inquiries (20), Universal service (5) and other (8).

4.2. Authorisation and licences

The Commission has raised no concerns regarding the implementation of the general authorisation regime in Spain. Taxation continued to be reported as one of the most disruptive factors for electronic communications providers, who are subject to a number of charges and fees at national (financing of public broadcaster) and local level (municipal fees). On the charge for financing the public broadcasting corporation (RTVE), the Commission withdrew the infringement case (C-468/11) from the European Court of Justice following the judgment in a similar case in France (C-485/11), but proceedings at national level are still ongoing. New taxes affecting providers of electronic communications have been adopted. The Autonomous Community of Catalonia adopted a regional Law 15/2014 in December imposing a tax of €0.25 Euros per month on providers for each contract of services with access to content through electronic communications networks. The Spanish Government has appealed against such regional Law to the Spanish Courts.

5. SPECTRUM MANAGEMENT

Spain's comprehensive spectrum assignment process for the 800 MHz, 900 MHz, 1800 MHz and 2.6 GHz bands (310 MHz in total) was completed in 2011. The assignment process established requirements for investment in infrastructures and coverage which have been implemented over the past years.

Against this background, the effective release of the digital dividend was not complete by the end of the reporting period. This was planned for the end of 2014. However, on 26 December 2014, the Council of Ministers adopted a Royal Decree-Law setting a deadline for the release of the frequencies so as to ensure the final adaptation of the communal TV reception facilities in the buildings and prevent a significant number of citizens from losing some television channels while the adaptation was being completed. The Decree-Law extended the deadline for the release of the 800 MHz digital dividend band to 31 March 2015, with compensation regarding the extension of spectrum rights of use for operators that had been granted rights for the band and were negatively affected by the delay. The implementation process was advanced in the geographical areas which could affect the LTE service in neighbouring Member States (France and Portugal) and in January 2015 Spain already took measures to switch-off the broadcasting stations that could affect LTE emissions in those countries. The release of the digital dividend was finally achieved in compliance with the maximum deadline (31 March 2015).

In 2014, the SETSI has also carried out an auction for the assignment of remaining spectrum from the 2011 assignment process in the 2.6 GHz frequency band at regional level in a number of Autonomous Communities. The results of the auction were published in July 2014 via Ministerial Order IET/1345/2014²⁵. This assignment of

²⁵ http://www.minetur.gob.es/telecomunicaciones/es-ES/Novedades/Paginas/Resultado_subasta_2.6_GHz.aspx.

spectrum is integrated in the actions of the ADpE and its objectives for the development of mobile communications in Spain.

6. RIGHTS OF WAY AND ACCESS TO PASSIVE INFRASTRUCTURE

The Telecommunications Law adopted in 2014 contains a set of measures to facilitate and reduce costs of NGA deployment. The law establishes enhanced institutional coordination to remove barriers and simplify administrative burden with regard to permit granting at different government levels. Spanish authorities are also working on secondary legislation to ensure this coordination at different levels of the administration through guidelines defined by the SETSI. These are reported by sector stakeholders as positive measures to facilitate deployment and to avoid that network deployment by operators is limited or delayed because of burdensome procedures and fragmentation caused by the heterogeneity of the different rules imposed by the different regional and local administrations as it had been reported in the past. Stakeholders have also stressed the importance of implementation of the new legislation. The new law also develops revised national legislation regarding rights for occupation of public and private domain and the deployment of fixed telecommunications networks in buildings to ensure the right of users to have access to services through high speed networks.

Regulation to deploy shared telecommunications infrastructure inside buildings (Infraestructuras Comunes de Telecomunicaciones, ICT) exist since 1998, being in force for all new buildings. On the part of the operators, symmetrical and asymmetrical facility-sharing obligations apply in Spain. Since 2009, there has been a reference offer by Telefonica (MARCo) for access to infrastructure at cost-oriented prices and under non-discriminatory and transparent conditions, including an online infrastructure database. Under this offer, there are 13.234 km of shared sub-ducts and 63 operators have deployed fibre cables through this access to Telefonica's infrastructure; there have been 48790 requests for the service. Article 37 of new Law 9/2014 recognises access to utilities infrastructure under transparent and non-discriminatory conditions. The CNMC there are also symmetrical obligations imposed by the CMT (now CNMC) as regards in-building fibre infrastructure for access at reasonable prices and under transparent conditions. Since 2012, the competence to impose in-building symmetric obligations falls under the remit of the Ministry, although CNMC regulation is currently in place. Under these measures, the first operator to reach a building with its fibre network, regardless of its significant market power condition, should meet reasonable access requests by third parties, at reasonable prices and under transparent conditions. Between October 2014 and March 2015, the CNMC solved 3 disputes between Telefónica, Jazztel, Vodafone and Orange about prices of in-building fibre infrastructure.

7. CONSUMER ISSUES

7.1. European emergency number 112

According to the latest European emergency number implementation report (results of the eighth data-gathering round), as published in February 2015, almost 30 million calls (29741512, as compared with 20251577 the previous year) were made to 112 in Spain, representing 62.45 % of all emergency calls. 112 is not the only emergency number in Spain. False calls accounted for 30.4% of the total, down from the 33.26% reported for

the previous year. Among the population as a whole, 70% were aware of 112 as an emergency number, but only 23% of the fact that it is available EU-wide. The management of 112 calls are a matter of regional competence and Spain has a system with a network of 17 regional public safety answering points (PSAPs), corresponding to the 17 Autonomous Communities, and two PSAPs in the autonomous cities of Ceuta and Melilla. As regards accuracy and reliability, network operators provide the PSAPs with the subscriber's address in the case of fixed networks or the implemented solution (POSIC112) in the case of mobile networks. This means that the physical location of the base station corresponding to the cell where the caller is located and the most probable sector(s) are also provided. The availability of alternative means of communication to emergency services for disabled end-users are reported in terms of text messaging (SMS), assisted calls (chat) and fax.

7.2. Number portability

Number portability ²⁶		2013	2014
Fixed	Number of transactions	1,459,963	1,463,421
	% of total numbers	7.7%	7.8%
	Maximum wholesale price	3.0	3.0
	Maximum time under regulation (number of working days)	1	1
Mobile	Number of transactions	5,108,025	4,655,425
	% of total numbers	9.8%	9.1%
	Maximum wholesale price	0.0	0.0
	Maximum time under regulation (number of working days)	1	1

Spain continued to be one of the Member States with the highest rates of number portability. In 2014 the number of transactions in fixed portability increased to 1 463 421 while the number of transactions in mobile portability decreased to 4 655 425. The regulatory period for both fixed and mobile number portability was cut to one working day from 1 June 2012 for fixed and from 1 July 2013 for mobile, although a delay caused by one provider (Orange) the effective entry into operation for mobile was delayed until November 2013. By July 2014, the CNMC had imposed sanctions (coercive fines and a penalty) to Orange amounting to a total of € 1.1 million for this delay. The CNMC has adopted procedures to enforce the one-day rule for fixed and mobile number portability, which applies from the moment the agreement is reached between the user and the recipient operator.

7.3. Contractual obligations

Contractual requirements under Directive 2002/22/EC are transposed in the Telecommunications Law which grants the consumer the right to request termination any

²⁶ Source: figures provided by Spain to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe.

time and the right to withdraw from the contract without penalty upon notice of the modification by the provider to the contractual conditions agreed with the consumer.

7.4. Other consumer issues

The new Telecommunications Law clarifies and improves a number of consumer protection provisions in the telecoms sector including in relation to privacy and dispute resolution. It also guarantees the prevalence of the Telecommunications Law as *lex specialis* in cases of conflict with general consumer legislation, also in the context of the transposition of the Consumers Rights Directive in Spain in 2014. The number of queries received by the SETSI's Office for Telecommunications Customer Care in 2014²⁷ fell by 23.80 % as compared with 2013, from 153.082 to 102.926. A total of 34.427 complaints were received, increasing by 8.6 % compared with previous year, 61.3 % of which were resolved in favour of the user in 2014. With regard to the specific electronic communications services, mobile telephony continues to attract the highest proportion of users' complaints (35.1 %), although decreasing compared with 2013 (39.8 %). The next most common consumer complaints related to fixed voice and data packages (22.1 %), fixed telephony (21.2 %) and fixed internet access (4.0 %). Billing, contract termination, and portability continued to be the areas with more complaints from users.

8. UNIVERSAL SERVICE

The following elements are included in the scope of universal service in Spain: the connection to a public network in a fixed location ensuring 1 Mbps functional internet access and the provision of a telephone service; public pay telephones and directories. Affordability and accessibility measures for special groups are also part of the scope. National legislation including broadband in the universal service was adopted in 2011 and is effective since January 2012. Telefonica and Telefónica Telecomunicaciones Públicas (TTP), for the provision of public pay telephones, are the designated universal service providers for 2012-2016 for all elements of universal service except directory enquiry services; these were not included in the scope of the universal service obligations, since they are covered by existing offers in the market.

In March 2014, the CNMC approved universal service costs in 2011 of € 31.9 million (27% less than in 2010). The costs have been decreasing over the past years although it has also led to proceedings at national level. The CNMC has adopted a new cost estimation methodology to enhance cost allocation and transparency. This is to be applied to costs incurred from 2012, when 1 Mbps functional internet access was included in the scope of universal service. The 2014 Telecommunications Law has introduced a number of changes as regards the implementation of universal service, in particular a new revenue threshold of € 100 million to determine which operators must contribute to the financing. The new sharing mechanism will apply to costs incurred after the adoption of the Law.

²⁷ http://www.usuariostelego.es/Destacados/Datos%20oficina/Datos_OAUT_2014_ANUAL.pdf

9. NET NEUTRALITY

9.1. Legislative situation

In Spain there is no specific legislation on net neutrality. The relevant provisions under the Universal Service Directive were transposed via the Royal Decree-law 13/2012 amending the previous Telecommunications Law which was replaced by Law 9/2014 in 2014.

9.2. Quality of service

In 2014, Ministerial Order IET/1090/2014 on quality of service in the provision of electronic communications was approved, replacing and adding to the previous Ministerial Order of 2006²⁸. The new Order maintains a commission to monitor quality of service, with a plenary and working groups made up of representatives from the SETSI, operators associations, the universal service provider, consumer protection authorities and regional government representatives. The SETSI is responsible for monitoring the quality of service and specific aspects, such as internet speed, and publishes quarterly reports on the quality of fixed and mobile services with a view to facilitating transparency, guaranteeing minimum levels of quality, regulating the inclusion of these requirements in contracts, and ensuring due compensation mechanisms.

²⁸ <http://www.minetur.gob.es/telecomunicaciones/es-ES/Servicios/CalidadServicio/Paginas/Calidad.aspx>.

Sweden

1. MARKET DEVELOPMENTS

Broadband indicators (December 2014)¹	SE 2013	SE 2014	EU 2013	EU 2014
Fixed broadband coverage ²	99%	99%	97%	97%
NGA coverage ²	71%	76%	62%	68%
Fixed broadband take-up ²	68%	67%	69%	70%
Share of >30Mbps subscriptions ³	38%	42%	21%	26%
Share of >100Mbps subscriptions ³	31%	34%	5%	9%
Share of DSL in fixed broadband ³	43%	41%	73%	70%
Incumbent market share fixed broadband ⁴	38%	39%	42%	41%
HSPA Mobile broadband coverage ²	100%	99%	97%	97%
LTE Mobile broadband coverage ²	99%	99%	59%	79%
Mobile broadband penetration ⁵	109%	113%	64%	72%
Market share of leading mobile network operator ⁴	35%	36%	35%	35%

The deployment of fibre is progressing significantly, driven by consumer demand for high speed connections above 100 Mbps. This resulted in the number of fibre subscriptions overtaking the number of copper subscriptions in spring 2014, according to NRA data. Sweden is among the leading Member States in fibre penetration, with FTTH/B representing a 40 % market share of all fixed broadband subscriptions (in January 2015) compared with an EU average of 8 %. Sweden is also the EU Member State with the highest ultra-fast broadband (at least 100Mbps) penetration, with 11.2 % (subscriptions as a % of population) compared with an EU average of only 2 % in July 2014. Ultra-fast 1Gbps subscriptions are also increasing due to attractive offers on the market, like for example the Property Federation in Stockholm that has signed a

¹ Sources: coverage data — studies by IHS and VVA; penetration data — figures provided by Sweden to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe (except fixed broadband take-up, provided by Eurostat).

² % of households.

³ % of fixed broadband subscriptions.

⁴ % of subscriptions.

⁵ Subscriptions per 100 inhabitants.

framework agreement with two major operators allowing the landlord to get 700 Mbit per second fibre internet connection for every tenant in the building. The total cost for each tenant is 24 Euro per month. This amount also covers the cost for installation of an in-building network. According to NRA latest data 61 % of the population has access to more than 100 Mbps and 54 % has access to fibre, with 74 % homes passed. 16 % Single Dwelling Units (SDU) have access to fibre and there is 13 % fibre deployment in the very sparsely populated rural areas of Sweden.

The incumbent *TeliaSonera* maintains a relatively stable market share of 39 % in fixed broadband, which is below the EU average of 41 % (July 2014). The cable company *ComHem* provides alternative retail access networks and has 92 % of the cable market, according to NRA data, and a 19 % market share of the fixed broadband market, offering 500 Mbps service to consumers. The Swedish broadband market is further fragmented with approximately 180 local fibre networks complementing the offer of the incumbent and the cable sector, in most cases based on an open-access model and ensuring competition at the service level and reaching 30 per cent of households and businesses in Sweden. The municipalities' networks are offering their services via so-called communication operators operating the network of the dark fibre owner. In recent years some operators have entered this 'middle men' business through acquisitions or starting their own companies, leading to a higher vertical integration and with a decreasing number of independent communication operators. In general infrastructure competition on fibre in Swedish municipalities is limited if the single municipalities are considered. On the other hand there is vast fibre coverage reaching most municipalities.

Considerable investments in fixed networks are taking place (FTTH and FTTB), mainly by *Telia Sonera* (more than 50 %) and municipality networks, with the SDUs representing the market of major interest at this stage of the roll-out. No further investments in VDSL are expected and vectoring is not in use. There is also an increase in the share of investment financed by consumers: in SDUs households cover the connection costs. Such costs differ very much, during a campaign they could be as low as € 1 600, whereas the ordinary price in some cases could reach more than € 3 000 per SDU. Also in the mobile sector the consumers are willing to invest in costly acquisition of handsets.

The incumbent infrastructure company *TeliaSonera* and *IP-only*, which is a potential competitor to the incumbent in the dark fibre business, acquired approximately 20 municipality networks of smaller size. However no major consolidation trend was registered among network owners and municipalities do not appear to be willing to extensively sell their fibre networks.

On the wholesale broadband market a new offer aggregation system covering urban networks was launched in October 2014. CESAR2 is a common framework agreement on business and technical specifications with nationwide acceptance at operators and city networks level. It is supported through a platform used by sellers (mainly urban networks) and buyers (national operators, regional operators or local vendors). Buyers can make queries through a single interface and receive a proposal including tariffs. Even if the proposal involves many networks, through a zone based pricing the buyer receives a 'consolidated' price. At present there are 18 buyers and overall 231 sales areas in Sweden and 108 participating organisations.

The Swedish mobile market is a fairly competitive market characterised by 5 MNOs: *Telia Sonera*, *Tele 2*, *Telenor*, *Three (Hi3G)* and *Net 1*, an operator offering services in the 450-band. There are also several MVNOs holding very limited market shares. The roll-out of 4G/LTE during 2014 has mainly taken place in the 800 MHz band and had the biggest impact on the 10 Mbps segment. The considerable increase in geographic coverage has led to a significant increase in competition and choices for consumers in the sparsely populated areas of northern Sweden traditionally only covered by Telia, where Telenor and Tele2 are now offering services based on common network provided through the joint venture Net4Mobility.

In addition to the common network through the joint venture Net4Mobility covering multiple bands between *Telenor* and *Tele2*, there are network sharing agreements between *TeliaSonera* and *Tele2* and between *Telenor* and *Hi3G*. In the market for associated facilities there are some players, real estate companies and the broadcasting company Teracom, having contracts with the MNOs concerning base station premises and antenna positions.

On the fibre backhaul market, beside the incumbent *TeliaSonera*, there are more than 150 local municipality networks providing fibre backhaul to MNOs. Municipality networks often make economically favourable long-term agreements (>15 years) with MNOs, while *TeliaSonera* strictly applies its general pricelist and conditions.

There has been a dramatic increase in LTE subscriptions during 2014 with Sweden consumers among the leading markets in consumption of mobile data services at EU and also global level. Mobile data traffic continues its exponential increase with approximately +35 % according to NRA data in 2014. A wide range of new mobile services are available as apps, both provided by the operators, services companies and content holders (from simple gaming, dating, chatting to multimedia entertainment and fully fledged banking services). The data mobile revenues grow while overall revenue growth in the mobile market continues.

In the fixed voice market, the incumbent *TeliaSonera* remains the leading operator, with fairly stable market shares over the last couple of years, both in terms of subscriptions (60 %) and outgoing traffic (55 %), although its market share for all types of calls by traffic volume has decreased somewhat over the past year to 54.3 % in 2014 compared with 54 % in 2012.

On the voice services there is a continuous trend of traffic increase in mobile and traffic decrease in fixed, which has been taken into account by the NRA as a signal of a certain one-sided fixed-to-mobile substitution where mobile access constitutes a limited competitive constraint on access to the public telephone network at a fixed location.

There were just over 3.8 million subscriptions for fixed-line telephony on the last day of June 2014 according to NRA data, a decrease by 5 per cent from the same date in 2013.

Video-on-Demand services have seen a remarkable growth in the last two years, to a large extent driven by the introduction of services like Netflix and HBO Nordic, with Youtube being the biggest player. Hence, the demand for transmission capacity has increased among consumers. On fixed services the incumbent is starting to develop e-health services in pilot phase, with specifically designed offers for hospitals and practitioners.

Bundled offers penetration (subscription/population) in Sweden is stable at 18 % in July 2014, significantly lower than the EU average of 41 %.

2. MARKET REGULATION

2.1. Market analysis

In February 2015, the NRA finalised the analysis of the newly defined broadband markets of wholesale local access provided at a fixed location (market 3a) and of wholesale central access provided at a fix location for mass-market products (market 3b).

On the wholesale local access market (new market 3a) the NRA designated Telia Sonera as an operator with significant market power in the wholesale market for physical and virtual local access to copper and fibre-based local loops, imposing access obligations and a new obligation on cost-oriented duct access. However, the cost-oriented prices regulation on fibre local access products will be lifted as Equivalence of Inputs (EoI) is implemented, i.e. by 1 December 2016. An Economic Replicability Test (ERT) for fibre access will be launched with inclusion of all revenues and costs for the relevant products (one bundled product and one standalone broadband product for SDU and Multi-Dwelling Units respectively). Telia started implementing its platform and the same system will be used for its retail branch and for external operators.

The wholesale central access market (new market 3b), comprising virtual access to copper-based, fibre-based and cable TV networks has been deregulated.

The Commission required careful monitoring by PTS in the implementation of the proposed remedies in Market 3a since in light of the de-regulation of Market 3b, the efficacy of remedies in Market 3a will become even more important for addressing competitive problems. It can indeed be expected that the availability of fibre access will become ever more necessary to compete on the retail market, as the take-up of ultra-fast services that rely on fibre infrastructures only increases with time. The next steps in the roll-out are likely to take place in segments of the market where the economies of scale are more difficult to achieve, because of lower density (geographic and in terms of prevalence of single dwelling units rather than multi-dwelling units). In this context, the Commission invited PTS to monitor the dynamics of competition at a detailed level in all market segments and to gather data per geographic area on a granular scale. This must enable PTS to analyse the continued efficacy of remedies, including in circumstances where copper access may become less and less viable as a means to compete at the retail level, and to consider the effect of competitive safeguards imposed on market 3a to guarantee competition in a specific geographic area or market segment in the light of the more locally varied competitive constraint from other NGA infrastructures.

Alternative network operators, with the exception of urban networks, expressed major concerns in relation to the lifting of price regulation. They notably contest the existence of sufficient price constraints from other networks, such as copper. They also claim that this will restrain NGA investments from alternative actors and hamper competition, in particular in the single dwelling units (SDU) segment. Operators also expressed concerns on the deregulation of the wholesale central access market, especially in a situation where physical access is less viable for access seekers, and in view of a significant first

mover advantage of Telia that has a high market share and is rolling out fibre extensively. The decisions for market 3a and 3b have not been appealed.

In 2015 the NRA is planning to start analysing the market for wholesale high-quality access provided at a fixed location (market 4, including leased lines for which the latest SMP remedies imposed on *TeliaSonera* date back to June 2013). Final decisions are planned for June 2016.

The introduction of pure-LRIC in termination rates calculations since 2013 has significantly affected market value and the regulated termination rates are continuing their downward trend with fix termination rates (FTR) reaching EUR 0.0739 cents/min. and mobile termination rates (MTR) reaching EUR 0.89 cents/min. Since all terminating operators are obliged to charge a cost-oriented MTR no glide path is currently in place.

In early 2015, PTS started a new analysis for the fixed and mobile termination markets (markets 1 and 2). New regulatory decisions are planned for October and June 2016 respectively, in line with the three-year cycle. The NRA considers that low levels of termination rates and overall low market value opens up for a possible change in the regulatory approach to current cost-oriented regulation for the next termination rates decisions.

Markets outside the Recommendation are also subject to review, such as the market for broadcasting over terrestrial network (ex market 18 of the 2003 Recommendation), the market for access to the public telephone network at a fixed location (ex market 1 of the 2007 Recommendation) and the market for fixed call origination (ex market 2 of the 2007 Recommendation) that will be subject to review during 2015 – 2016 and for which the final decision is planned for October 2016 (previous decision in Oct 2013).

2.2. Access and interconnection

In 2014, there were no issues reported regarding access obligations in terms of IP interconnection. There are no registered/notified IP interconnection agreements; however the incumbent *TeliaSonera* has published a reference offer covering IP interconnection. No specific reporting obligation has been imposed by the NRA other than to publish a reference offer or other information deemed necessary to conclude an interconnection agreement. There is no calendar set for migration of fixed networks towards IP interconnection architecture. So far this has been left to market players. The NRA is planning to address IP interconnection issues in the upcoming review of the fixed and mobile termination markets.

3. BROADBAND PLANS AND FINANCING

Sweden is progressing well on its commitment to reach the high speed broadband targets of the Digital Agenda for Europe by 2020. Broadband plans in line with the national broadband plan and the objectives of the Digital Agenda for Sweden (DAS), i.e. access to 100 Mbps for 90 % of all Swedish households and businesses by 2020, are developed at the regional level as well as at the municipal level. There is a national strategy for the extension of broadband to rural and isolated areas, which represent an important part of the Swedish territory. Investments in this case are driven by consumer aggregated demand, with local communities and non-profit organisations often taking the initiative encouraged by regional and national coordination and support activities like the so-called

‘Fibre to the village’ seminars organised for local non-profit organisations.

Co-financing of broadband projects has been ensured through State aid measures supported by the European Agricultural Fund for Rural Development (EAFRD) and by the European Regional Development Fund (ERDF). The Swedish Board of Agriculture assigned EUR 174.2 million (including national co-financing) from the Rural Fund for 730 NGA deployment projects (access networks) mainly led by local non-profit organisations and municipalities. In addition the Swedish Agency for Regional and Economic growth assigned EUR 73 million (including national co-financing) from the Regional Fund for 48 projects for networks supporting NGA (link between the core and access networks), granted to local municipalities, provincial or regional offices, local energy companies and other undertakings. Additional support has been given by the national ducting fund through a de minimis aid. While for the programming period 2007-2013 the NRA was directly involved in co-funding and monitoring of projects, for the 2014-2020 financing period PTS will assume exclusively a consultative role. The plans for the use of ESIF⁶ (European Structural and Investment Funds) in the financing period (2014-2020) foresee approximately EUR 412 million (excluding national co-financing) to be assigned to NGA deployment projects, respectively EUR 348 by the European Agricultural Fund for Rural Development (EAFRD) and EUR 64 million by the European Regional Development Fund (ERDF).

4. INSTITUTIONAL ISSUES

4.1. The National Regulatory Authority

PTS⁷ is responsible for the main tasks assigned to national regulatory authorities under the regulatory framework for electronic communications in the EU, although there is a division of competences in the broadcasting area with the Broadcasting Authority with regard to programme licences and with the Government for public broadcasting.

	2014
Personnel ⁸	247
Increase	0 %
Budget	€ 37 Million
Increase	1 %
Administrative charges ⁹	€ 26 Million
Administrative costs ¹⁰	€ 1 Million

In addition to the tasks assigned under the telecommunication regulatory framework the NRA is also competent for network security, the postal sector and some disability-related areas.

During 2014 amendments to the Ordinance (2007:951) introduced specific dismissal

⁶ Indicative amounts.

⁷ *Post- och telestyrelsen* (Swedish Post and Telecom Authority).

⁸ Number of staff in full time equivalents (fte).

⁹ In the sense of Art. 12 of the Authorisation Directive (Directive 2002/20/EC as amended by Directive 2009/140/EC).

¹⁰ Idem.

criteria for members of the NRA Board,). In addition a longer 3 year term of office for board members was put in place. Those reforms have reinforced the independence of PTS¹¹.

PTS is cooperating with the Competition Authority including with decisions related to two mergers of private entities buying municipal networks. Consolidations related to smaller players have however not been scrutinised by the Competition Authority since those were below the national threshold for merger control.

The decisions of PTS can be judicially reviewed or suspended by the Administrative Court in Stockholm and the Court decision can be appealed at the Administrative Court of appeal.

Organisational changes introduced by PTS in recent years with the aim to improve legal quality assurance, and the legislative amendment of rules for price regulation and PTS-related competences appear to have had a positive impact on regulatory certainty, as evidenced by the decrease in the number of appeals.

In 2014 14 Court cases were finalised; with PTS decision upheld in all cases: 5 cases were dismissed after the appeal had been withdrawn and 9 were tried on the merits with PTS decision upheld in all cases. No PTS decision was suspended. Average time in court for the Administrative Court was 230 days (362 when tried on the merits) and 470 days for the Court of Appeal (394 when tried on the merit).

Among the most relevant cases, it could be noted that the Administrative Court agreed with PTS in confirming that MTR based on the principles set out in the Commission Recommendation on the Regulatory Treatment of Fixed and Mobile Termination Rates in the EU did not violate the Swedish legislation.

Moreover, the Administrative Court of Appeal on 24 February 2014 upheld PTS decision regarding the points of access and the right to connect cables to co-located equipment. After the ECJ had passed its judgment in case C-556/12 and declared that NRAs have the power under the Access Directive to impose on an SMP operator an obligation to install, at the request of competing operators, a drop cable not exceeding 30 metres in length connecting the distribution frame of an access network to the network termination point at the end-user's premises, TeliaSonera withdrew the appeal regarding this issue.

4.2. Authorisation and licences

Conditions attached to wireless mobile broadband rights of use are aiming at ensuring consumers and economic interest. In particular coverage obligations are imposed in the lower bands (450, 800, 900 MHz). In the 2100 MHz band they have been lifted.

The coverage condition in the 450 MHz requires the licensee to cover 80 per cent of the territorial area in each county with mobile telephony. The 900 MHz licences were renewed in 2009 on condition that operators would provide considerable voice coverage, way beyond the original objective set in late 1990. In the 800 MHz band a kind of fund solution was set up, reserving part of the amount paid for the licences to promote effective roll-out of broadband over 'white spots'. The obligation to provide coverage for

¹¹ Government Decision II 1 N2014/2837/ITP.

all households and businesses lacking broadband in Sweden is linked to a 5MHz block and concerns only the joint venture of Tele2 and Telenor, Net4Mobility, who shall use the € 35 million fund to cover a list of addresses indicated by the NRA.

The EMF limits are not stricter than those in Council Recommendation 1999/519/EC as implemented in the Swedish Radiation Safety Authority's guidelines¹². No particular concerns in relation to LTE deployment have been identified.

Selected MSS operators Inmarsat and Solaris (Echostar) have received technique and service neutral licences to use CGCs in a mobile satellite system that are valid up to and including 14 May 2027. Both operators have been notified enforcement measures and imposed revised milestones.

There are OTT providers that have access to E.164 numbering resources via suballocation from another operator and there are some OTT providers that have been assigned other kind of numbering resources by PTS, e.g. E.212 MNCs.

5. SPECTRUM MANAGEMENT

In April 2014 the NRA finalised its spectrum strategy with the objective of defining a long-term vision on maximising socioeconomic benefit of spectrum and to ensure spectrum availability through less restrictive conditions, promoting spectrum sharing, harmonisation, timely awards and licence terms. It introduces an analysis of economic efficiency, for example a cost-benefit analysis, as a structured basis for decisions on which usages should be enabled in different bands, and under which conditions¹³. Timely awards and licence terms, favoured market investments and the development of LTE networks. There has been a dramatic LTE expansion, mainly based on the 800 MHz and 2600 MHz bands, but also 900 MHz, some 1800 MHz and even some 2100 MHz spectrum. NRA data demonstrates that the LTE 10 Mbit/s area coverage development passed in the last year has increased considerably, and in terms of population a continued positive development can be seen. The LTE 30 Mbit/s coverage reached in 2014 an area of 1.5 % and a population of 60 % according to NRA data.

Full flexibility of spectrum use pursuant to Article 9 and 9a FD in EU harmonised bands will be ensured by May 2016 for all licence types. PTS finalised an inventory of licence conditions that are potentially too restrictive and that will no longer apply after May 2016. The work has resulted in a change of the national licence templates in order to ensure licence allocations which are as neutral as possible in the future.

At the moment the 700 MHz band is used for broadcasting and the government decided in 2014 that the frequencies will become available for mobile broadband services from 1 April 2017. Having been given assignments by the government in April 2015 PTS concluded a pre-study and a public consultation identifying the competing demands, investigating the potential use of the 700 MHz (mobile broadband to commercial services, PPDR, M2M wireless microphones), analysing societal benefits for different spectrum uses, proposing a national band plan and preparing for a spectrum award in late

¹² Swedish Radiation Safety Authority's guidelines SSMFS 2008:18.

¹³ PTS Spectrum Strategy, April 2014, PTS-ER-2014:16.

2016¹⁴. Cross-border coordination issues are also being addressed.

6. RIGHTS OF WAY AND ACCESS TO PASSIVE INFRASTRUCTURE

Sweden has not developed a passive infrastructure mapping covering telecom infrastructure and utilities infrastructure, however a web service called *Ledningskollen* for sharing information on infrastructure owners of pipelines and other infrastructure in the ground was developed on voluntary basis in order to prevent excavation damages, is managed by the NRA and is publicly accessible. An evolution of *Ledningskollen* is proposed in view of the transposition of the Broadband Cost reduction Directive with increased transparency on existing physical infrastructure and planned civil works and the NRA to play the role of the Single Information Point. The Ministry of Enterprise and Innovation published a memorandum in view of transposition of the Broadband Cost reduction Directive that will be on public consultation till June 2015, with a view to transpose the amendments to one completely new and several existing laws by 1 January 2016.

The procedures for granting rights of way are local, when the land (such as local streets) is owned by the municipalities, and national for privately owned land. Electronic submission of applications for permit granting is available in some municipalities but not in the vast majority. The municipalities decide by themselves whether or not to implement a digital process for granting permits.

Access to passive infrastructure is mandated on an asymmetric and symmetric basis. Based on the remedies imposed in February 2015 by the NRA on the local broadband access market, TeliaSonera is obliged to provide duct access at cost-oriented prices upon a reasonable request if it has accessible ducting and the right to provide a sub-lease to the access seeker. However, due to legal and technical difficulties, TeliaSonera is not obliged to publish a reference offer for duct access. Access to other utilities infrastructures exists in individual cases but is not systematically allowed. Symmetric infrastructure sharing can be imposed based on the Electronic Communication Act (4:13 a) with an obligation to share wirings inside buildings. The NRA is reviewing a case and verifying if it is proportionate to impose an obligation to share the wirings with a smaller company that wanted to continue to deliver broadband services to subscribers in a building where the property owner has given another company (a communication operator) an exclusive right to deliver broad band services.

Access to publicly financed works is not provided. Coordination of civil works mechanisms is not applied systematically however some municipalities invite actors on a regular basis to take part in the planning process.

7. CONSUMER ISSUES

7.1. The European emergency number 112

The emergency number calls are received by a single organisation (PSAP provided by SOS Alarm AB), while specific requirements on caller location accuracy and reliability

¹⁴ <http://www.pts.se/upload/Remisser/2015/700%20mhz/700mzh-forstudierapport.pdf>

criteria are laid down in PTS' regulations of 2008 and 2011. In this regard a supervisory procedure was conducted by PTS in 2014 that monitored accuracy of caller location information provided by operators, and led to measures ensuring availability of EU roaming calls to 112 and of related caller location and availability of caller location of SIM-less calls.

Access to Emergency Services 112 by disabled end-users is ensured in Sweden through specific services: i) an SMS service for registered users which allows the usage of mobile phones without any relay service via the mobile client (112 SMS), ii) a text service, which enables callers to contact emergency service operator directly by calling 112 via a textphone, Moreover, additional services are funded by PTS, including: i) a video relay service in sign language which connects the call with highest priority (*Bildtelefoni.net*), ii) a text relay service, which enables callers to contact emergency service while calling 112 via a textphone, (*Texttelefoni.se*), iii) a speech and memo support service provided during important phone calls (*Teletal*).

7.2. Number portability

Number portability ¹⁵		2013	2014
Fixed	Number of transactions	161,494	136,566
	% of total numbers	4.0%	-
	Maximum wholesale price	1.7	1.7
	Maximum time under regulation (number of working days)	3	3
Mobile	Number of transactions	368,524	407,284
	% of total numbers	2.6%	-
	Maximum wholesale price	1.7	1.7
	Maximum time under regulation (number of working days)	3	3

Swedish authorities tackled elements linked to contractual conditions and procedures for contract termination that were acting as a disincentive for changing service providers and this led to slight increase of mobile portability transactions. Portability may be problematic for consumers mainly in cases of very aggressive marketing practices by some small operators leading to involuntary change of operator and difficulties in switching back. Same rare cases were reported where a donor operator was refusing to port consumers or where the donor operator charged the gaining operator a high fee, given that there is no price level regulation on porting. Complaints were recorded mainly in relation to non-geographical numbers (free phone and premium rate numbers in particular).

7.3. Contractual obligations

New legislation entered into force on 1 May 2014 related to the consumers right to terminate contracts, reducing the maximum notice period to one month and prohibiting

¹⁵ Source: figures provided by Sweden to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe.

operator lock-in of mobile phones and other equipment that consumers have purchased in connection with such subscriptions. There are positive developments on the market, since one market player recently abandoned commitment periods. The NRA identified¹⁶ issues related to commitment periods as common ground for the top four consumer complaints.

7.4. Other consumer issues

Transparency for Swedish mobile consumers has improved considerably following an industry self-regulatory solution regarding adopted in March 2014 on commonly agreed standards for coverage maps, leading to new mobile coverage maps of the operators launched in December 2014. Information is provided in relation to speed, technology, level of coverage, terminals (coverage is also differentiated based on consumer equipment). There are three main categories for identifying the quality of coverage: basic coverage (possible to call and use internet outside), good coverage and very good coverage. The indications in the maps act however only as guidance and can never guarantee coverage. The NRA will supervise the coverage maps.

In 2014, the Electronics department at the National Board for Consumer Disputes (ARN) competent for consumer dispute settlement received 494 consumers' complaints regarding telephony services and 166 complaints regarding internet services. Main sources of complaints were the lack of a sufficient quality of service (disruptions and insufficient speeds), contract terms and termination of contract before commitment period and aggressive telemarketing (especially from smaller actors and distance selling). Consumers had relevant problems linked to very small operators 'stealing' consumers from others without consumers' approval (slamming).

8. UNIVERSAL SERVICE

The NRA has not imposed any universal service obligation to provide electronic communication services. Telephony services provided through fixed and wireless solutions, directory enquiry services, and functional Internet access are all catered for by market players, except in exceptional circumstances when PTS has some government funding to procure technical solutions for a few extreme cases of far-off subscriber connections where subscribers have lost their connections due to a technology shift (11 extremely remote households to be covered via the 450 MHz band, satellite and repeater technology).

Since December 2011 functional access to the Internet for universal service provision is set at a minimum speed of 1 Mbps. Part of the amount paid for the 800 MHz licences was reserved for financing a mobile broadband coverage obligation, defining all addresses to be covered by 2014. At present there are less than 200 identified addresses still not covered with at least 1 Mbit/s, since the licence holder registered a slight delay in covering the addresses due to delays in building permits and negotiations with the power companies (utilities) to agree on electricity in very remote areas.

¹⁶ PTS market intelligence report 2014.

9. NET NEUTRALITY

9.1. Legislative situation

Sweden has not introduced specific net neutrality legislation. However, in July 2013 secondary legislation and guidelines were adopted regarding transparency and contractual content. According to the legislation, services should provide information on inter alia which potential traffic management measures are taken for a particular service.

PTS has gathered stakeholders for a dialogue on the subject of Net Neutrality. PTS initiative started in 2014 and one of the topics discussed at these meetings is the creation of a self-regulatory code of conduct regarding traffic management.

9.2. Quality of service

Measurements on quality of service (QoS) parameters such as speed and response time are collected and made publicly available by the QoS monitoring tool widely available in Sweden, called 'Bredbandskollen' provided by the Swedish Internet Foundation. Besides providing end-users with real-time measurements for fixed- and mobile internet services, the tool also provides a wide range of statistical data also comparing actual and advertised speeds.

PTS makes a bi-annual survey on consumer satisfaction¹⁷. In the survey, consumers answer a wide range of questions regarding their problems/satisfaction with electronic communication services. There have not been incidents/complaints related to the openness of the Internet (blocking, throttling, special tariffs). Several operators use traffic management measures for security reasons or to mitigate network congestion (mostly in mobile networks).

¹⁷ Report called 'Individundersökningen'.

United Kingdom

1. MARKET DEVELOPMENTS

Broadband indicators (December 2014)¹	UK 2013	UK 2014	EU 2013	EU 2014
Fixed broadband coverage ²	100%	100%	97%	97%
NGA coverage ²	82%	89%	62%	68%
Fixed broadband take-up ²	83%	82%	69%	70%
Share of >30Mbps subscriptions ³	26%	32%	21%	26%
Share of >100Mbps subscriptions ³	1%	5%	5%	9%
Share of DSL in fixed broadband ³	81%	81%	73%	70%
Incumbent market share fixed broadband ⁴	31%	32%	42%	41%
HSPA Mobile broadband coverage ²	99%	99%	97%	97%
LTE Mobile broadband coverage ²	63%	84%	59%	79%
Mobile broadband penetration ⁵	88%	88%	64%	72%
Market share of leading mobile network operator ⁴	-	-	35%	35%

Alongside the UK's incumbent provider BT, a number of alternative providers compete in the retail provision of fixed services (including telephony and broadband). These include cable operator Virgin Media and smaller niche networks, as well as operators using a variety of wholesale inputs purchased from BT, such as MPF LLU (Metal Path Facility) operators (such as Sky and TalkTalk) and resellers.

BT offers standard broadband (using ADSL/ADSL2+) and 'superfast broadband' (Ofcom definition: >30Mbit/s download) using FTTC and FTTP. Sky and Talk Talk both provide standard broadband (using LLU/ADSL2+). Virgin Media runs a cable network capable of providing ultra-fast broadband (>100Mbit/s download) using DOCSIS 3.0.

¹ Sources: coverage data — studies by IHS and VVA; penetration data — figures provided by the UK to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe (except fixed broadband take-up, provided by Eurostat).

² % of households.

³ % of fixed broadband subscriptions.

⁴ % of subscriptions.

⁵ Subscriptions per 100 inhabitants.

As of December 2014, 32 % of all fixed broadband lines are held by the incumbent provider BT, a figure which is significantly below the EU average of 41 %. Even though this is a 1 % increase compared with 2013, the UK still ranks as the Member State with the fourth lowest incumbent market share in the EU.

There are currently about 23 million broadband connections in the UK. 80 % are supported by BT's network and 20 % by Virgin Media. Of the 18.5 million connections on the BT network, about 9 million are used by BT, while the rest are used by LLU operators. Of these 9 million broadband connections supplied by BT, about 3.7 million are superfast broadband based on FTTC or FTTP connections. Of the superfast broadband connections, the vast majority (about 3.6 million) are FTTC connections. The remaining 5.3 million BT broadband connections are standard connections based on ADSL/ADSL2+. BT does not currently use vectoring on its FTTC network. In early 2015, it announced further upgrades over the next 5 years to ultra-fast using G.Fast technology. Of the 4.5 million broadband connections on Virgin Media's cable network, the majority are superfast broadband; these can provide services up to 150Mbit/s. Virgin Media recently announced plans to extend the footprint of its cable network from 44 % to 60 % (accounting for an additional 4 million premises). It has also announced a planned upgrade to DOCSIS 3.1, which would support broadband speeds of 1Gbit/s.

In February 2015, BT announced that it had agreed to buy mobile operator EE from its parent companies Deutsche Telekom and Orange. The merger will result in BT offering consumer wireless services for the first time in more than a decade. Since the merger requires regulatory approval, the completion date has yet to be determined. BT's announced merger with EE triggered further strategic moves in the UK. In March 2015, Hutchison Whampoa (owner of mobile operator Three) announced that it had reached agreement with Telefonica to buy Telefonica's O2. If the required regulatory approval is given, this would create a three-player mobile market constituting of BT/EE, Three/O2 and Vodafone.

At present there are four mobile network operators (MNOs) and 41 mobile virtual network operators (MVNOs) active on the UK market. 4G mobile services are now available through all mobile network operators in the UK. The four MNOs each form part of one of two separate network sharing arrangements. These both involve shared use of passive infrastructure, active electronic equipment and backhaul transmission, but not spectrum⁶.

According to Ofcom's 2014 Consumer Experience Report, around 16 % of households use mobile telephony only, whereas 79 % have both a fixed line and mobile. Just 5 % have a fixed line only. In 2013, Ofcom noted that consumers may consider mobile to be a substitute for at least some fixed-line calls, but most households have access to both fixed and mobile telephony services. In Ofcom's view this suggests that most consumers do not regard the two forms of access as close substitutes. However, the proportion of calls made from fixed lines is continuing to fall, while the number of calls from mobiles is continuing to increase.

⁶ For further details of these network-sharing arrangements, see the 2014 UK chapter: <https://ec.europa.eu/digital-agenda/en/news/2014-report-implementation-eu-regulatory-framework-electronic-communications>.

There has been a significant increase in the uptake of retail bundles by consumers in the UK, with the majority of households now taking a bundle which includes a fixed service. Operators are now more focused on selling bundles rather than standalone services. Fewer operators are now offering standalone fixed telephony or broadband services.

Ofcom's August 2014 Communications Market Report (CMR) found that BT's share of retail calls now stands at just under 38 %. At the same time, overall fixed voice call volumes continued to decline, both in absolute terms and relative to mobile calls. The largest percentage fall in outgoing fixed call volumes in 2013 was for outgoing international calls (down just over 16.3%). This is probably the result of growing use of VoIP and mobile phones to make international calls (some mobile providers market their services by offering low-priced international calls).

Ofcom's CMR also found changes in the use of non-traditional communication services in the year to Q1 2014. The proportion of adults making voice calls using VoIP services increased by 7 percentage points to 35 %, and the proportion of adults using mobile instant messaging increased by 8 pps. to 32 %. However, frequency of use of VoIP is lower: fewer than half of VoIP users (48 %) said that they used it at least once a week, with 14 % using VoIP on a daily basis and 9 % using it almost every day. Just under a quarter of VoIP users (22 %) said that they used VoIP less than once a month.

Like most retail markets, the retail market for business narrowband call services was competitive, with BT's retail market share of business call volumes below 40 % and downward pressure on prices for business calls.

2. MARKET REGULATION

2.1. Market analysis

With regard to NGA, the incumbent BT is required to provide virtual unbundled local access ('VULA', an NGA local bitstream remedy) wherever it has upgraded its copper access network to FTTC or FTTP. By February 2015, VULA was available to about 70 % of UK premises and take-up stood at about 3.7 million (2.7 million for BT Retail with the remaining 1 million being used by other operators). BT is also required to provide sub-loop-unbundling (SLU) and physical infrastructure access (PIA) on a cost-oriented (but not equivalence of inputs — EoI) basis. SLU enables providers to rent the copper connection between end-users and an intermediate point in BT's access network, usually the street cabinet. The provider establishes its own fibre backhaul connection from the intermediate point, thus creating its own FTTC network. SLU is subject to conditions that specify that charges should reflect fully allocated costs. PIA allows access to BT's ducts and poles to enable providers to deploy FTTC and/or FTTP infrastructures. PIA is subject to conditions that specify that LRIC+ is the most appropriate basis of charges (i.e. cost orientation); Take-up of these remedies is currently very limited.

In June 2014 the UK's NRA Ofcom (see section 4.1 below) concluded its review of the wholesale broadband access market⁷ (i.e. market 5 as defined in the 2007 Relevant Markets Recommendation) following the Commission's previous comments on the inclusion of self-supplied cable and LLU-based services in the relevant markets.

⁷ UK/2014/1608.

Also in June 2014 Ofcom published its statement on the ‘Fixed Access Market Review’ (FAMR)⁸. In the statement Ofcom referred to ‘wholesale access to the local loop for broadband and/or voice services, wholesale and retail fixed analogue, integrated ISDN2 and ISDN30 exchange line services’. These covered market 4 of the 2007 Recommendation (now market 3a of the 2014 Recommendation⁹) and fixed analogue exchange lines, ISDN30 and ISDN2, which were not in the Recommendation.

In its final statement Ofcom acted upon the Commission’s comments which dealt with excluding IP-based services from the product market definition for the wholesale fixed analogue, ISDN2 and ISDN30 exchange lines markets and the inclusion of self-supply in the wholesale local access (WLA) product market definition on the basis of indirect constraints. For VULA, Ofcom continued to allow BT to practise pricing flexibility (e.g. dependent on geographical variations, volume discounts and tiered pricing) and refrained from imposing cost-based charge control.

However, BT is required to provide VULA to access seekers on an EoI basis. In order to avoid any distortion of competition in the broadband market and take account of the Costing and Non-Discrimination Recommendation¹⁰, Ofcom stated it would consider applying an economic replicability test (ERT) to ensure that BT does not abuse pricing flexibility in order to exclude potential competitors from the relevant broadband market. The details of this test, however, were not part of the draft measures notified in 2014. On 15 January 2015, Ofcom notified to the Commission a draft of its remedies to address the SMP of BT in the WLA market. Under the draft BT would have to maintain a minimum margin between its wholesale price for VULA and the retail price of its superfast broadband packages.

On 19 March 2015, Ofcom adopted its final statement¹¹ which forms part of the overall package of remedies imposed on BT to address their SMP, as set out above. In the light of the Commission’s formal comments, of 13 February 2015, inviting Ofcom to revisit the design of its proposed ERT and to ensure that sufficient flexibility is given to BT to recover the costs for BT Sport over a longer time horizon, in particular in light of uncertainties relating to the scale and costs of future auctions, Ofcom provided further detail on how it can respond flexibly to changing circumstances and added clarification on why it considers its approach to be appropriate in light of specific UK national circumstances. These circumstances led Ofcom to consider it appropriate to continue to deviate from the ERT as recommended by the Commission, in the adopted measures.

As regards regulating mobile and fixed termination rates (MTRs and FTRs), the UK is in compliance with the Commission’s Recommendation on Termination Rates¹². Since 1 January 2014 FTRs have been based on LRIC, using an NGN cost model. On 17 March

⁸ Cases UK/2014/1606 and UK/2014/1607.

⁹ Commission Recommendation 2014/710/EU of 9 October 2014 on relevant product and service markets within the electronic communications sector susceptible to *ex ante* regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services, OJ L 295, 11.10.2014, p. 79.

¹⁰ Commission Recommendation of 11 September 2013 on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment (2013/466/EU) — ‘the 2013 Recommendation’; O.J. L251, p.13.

¹¹ UK/2014/1692.

¹² Commission Recommendation C(2009) 3359 of 7.5.2009 on the regulatory treatment of fixed and mobile termination rates in the EU.

2015 Ofcom adopted final measures concerning MTRs for the period 2015 to 31 March 2018¹³. In response to Ofcom's notification of the draft measures the Commission provided comments on the entry into force of the new LRIC rates. The Commission also asked Ofcom to reconsider the need for a one-year adjustment period and to implement the revised rates as soon as administratively possible (i.e. to pass on efficiency gains). As justification for not doing so, Ofcom cited the short-term constraints faced by mobile operators when adjusting their retail prices and the need to allow them the opportunity to recover their efficiently-incurred costs. Therefore, Ofcom decided to apply the new LRIC rate from 1 April 2016 (with a partial adjustment towards the new LRIC rate in 2015/2016).

Ofcom aims to conduct all its market reviews under the framework on a rolling three-year cycle. As regards upcoming market analyses, it plans to notify its Business Connectivity Market Review before spring 2016, the Fixed Calls Review (including fixed call termination) before September 2016 and the Fixed Access and Broadband reviews before March 2017. On 12 March 2015, Ofcom announced a 'Strategic Review' of the UK's digital communications markets¹⁴, focusing in particular on incentives for private sector investment, on maintaining strong competition and tackling obstacles and bottlenecks and identifying possible scope for deregulation. Once stakeholders have made comments, Ofcom expects to issue a discussion document in summer 2015 and outline initial conclusions by the end of the year.

2.2. Access and interconnection

Communications providers are not required to register or notify the NRA of their specific interconnection agreements. There are no obligations relating to IP interconnection. Interconnection obligations on the incumbents (BT and KCOM) relate to time-division multiplexing (TDM) interconnection only. Operators that provide fixed call termination (and call origination in the case of BT and KCOM) have access obligations to provide a service on reasonable request. Requests could be based on IP interconnection, but there is no explicit requirement to provide access via IP.

The NRA has not resolved any disputes specifically in relation to IP interconnection.

No calendar has been set for the migration of fixed networks to IP interconnection architecture. While some operators have completed their deployment of IP networks, BT has not set a timeframe for migration from its current TDM network. Although the main MNOs in the UK have commenced deployment of 4G networks, they do not have to notify Ofcom of plans to implement IP interconnection to support VoLTE between networks.

3. BROADBAND PLANS AND FINANCING

In recent years, the UK has developed and implemented a national broadband strategy ('Superfast Britain') to extend broadband to the hardest-to-reach areas in the 'final third' of England, Wales, Scotland and Northern Ireland. This involves approximately £1.7 billion in public funding from local authorities (and devolved administrations in

¹³ Case UK/2015/1706.

¹⁴ <http://stakeholders.ofcom.org.uk/telecoms/policy/digital-comms-review/>

Scotland, Wales and Northern Ireland) and the UK Government (allocated by 'Broadband Delivery UK' (BDUK), a specialist body of the Department for Culture, Media and Sport, and 2007-2013 European funding programmes to stimulate further private investment by suppliers to upgrade infrastructure.

The Government's 'Superfast Broadband Programme' (formerly the 'Rural Broadband Programme') provides gap funding for local authorities that have drawn up plans to raise additional money locally and provides support to contract a private sector company to deliver broadband. The programme's target is to extend 'superfast broadband' (Government's definition: >24 Mbit/s) to 95 % of the UK by 2017 and to ensure universal availability of standard broadband (> 2Mbit/s). The original target of 90 % superfast coverage is expected to be reached by early 2016. The early stages of implementation have led to a number of rather critical reports, most notably from the National Audit Office (NAO) in July 2013 and the UK Parliament's Public Accounts Committee on 25 March 2014. Concerns focused on the level of competition secured (BT was the only final bidder) and transparency regarding BT's cost. However the NAO published an updated report in January 2015 which found that there had been significant improvements in transparency, control over costs and real costs vs forecast costs. This scheme was approved as state aid by the Commission in November 2012¹⁵ and included an obligation to undertake an ex post evaluation prior to re-notification. The evaluation has been completed and has been submitted to the Commission for review. The UK has pre-notified the scheme for extension beyond its current expiry date of 30 June 2015.

In addition the UK has allocated up to £ 150 million to fund a number of initiatives ('Super-connected Cities Programme). These include the use of a voucher scheme designed to encourage SMEs to move to high speed/high-grade broadband connections. Under the scheme, which is initially offered in 22 cities across the UK, SMEs receive a voucher to cover the cost of connection. The broadband supplier they choose is then paid no more than a commercial/regulated rate for the services. Take-up of the programme was initially criticised as low, but the scheme has since been substantially reviewed and simplified. The scheme was initially scheduled to run until 31 March 2015, but in December 2014, the Government announced that it was making additional funds available from April 2015 to March 2016 so that more cities could take part.

4. INSTITUTIONAL ISSUES

4.1. The National Regulatory Authority

Ofcom, the NRA in the UK, is the independent NRA according to the regulatory framework and is vested with the main regulatory tasks. In 2014 the average number of staff at Ofcom was 785, compared with 781 in 2013. It is funded by fees from industry for regulating broadcasting, postal services and communications networks, and grant-in-aid from the UK Government for managing the radio spectrum and its role in competition regulation.

¹⁵ SA.33671 of 20.11.2012, 'Broadband Delivery UK framework scheme', http://ec.europa.eu/competition/state_aid/cases/243212/243212_1387832_172_1.pdf.

The current spending caps were set for the period 2011/2012 to 2014/2015. Ofcom's budget for the 2014/2015 financial year is £ 117.0 million. The total resources Ofcom collected from fees and charges in 2013/2014 accounted for 51 % of its total budget, while 49 % came from the state budget.

	2014
Personnel ¹⁶	785
Increase	0.50 %
Budget	£ 117.00 million
Increase	-3.60 %
Administrative charges ¹⁷	£ 34.90 million
Administrative costs ¹⁸	£ 34.20 million

Note:

Administrative costs and charges for 2014/2015 are based on the 2014/2015 budget

Personnel numbers for 2014/2015 are based on the 2014/2015 Budget

excludes SCAP, PSSR, Maternity Leavers, Colleagues on Long-Term Absence and Board and Panel members

Appeals against Ofcom's decisions under the Framework can be lodged with the Competition Appeal Tribunal (CAT), the Competition and Markets Authority (CMA)¹⁹ and the High Court. None of Ofcom's decisions under the Framework were quashed in 2014.

In addition to being a sectoral regulator, as a national competition authority, Ofcom is also empowered to enforce competition law concurrently with the CMA and acts as the competition enforcement authority for the communications sector. Ofcom also has a role to enforce consumer protection law for the communications sector. Complaints to Ofcom about telecoms services related to a range of issues and fluctuated between 6000 and 7000 between September 2013 and October 2014. The most common consumer complaints to Ofcom relate to silent and abandoned calls, complaint handling and fixed-line mis-selling. However, the volume of complaint handling and mis-selling complaints have both fallen over the past year.

In December 2014, Ofcom announced the appointment of a new Chief Executive. She took over the role in March 2015, after her predecessor had served eight years in the position. This is a public appointment made by the Ofcom board, involving an independent assessor and subject to approval by the Secretary of State for Culture, Media and Sport.

4.2. Authorisation and licences

In the UK there is no establishment requirement as a prerequisite to provide electronic communications services and/or networks.

¹⁶ Number of staff in full time equivalents (fte) — based on actuals as per annual accounts.

¹⁷ Within the meaning of Art. 12 of the Authorisation Directive (Directive 2002/20/EC as amended by Directive 2009/140/EC).

¹⁸ *Idem*.

¹⁹ The Competition and Markets Authority (CMA) resulted from the merger between the Competition Commission and the Office of Fair Trading. It was formally established on 1 October 2013 and its full functions and powers came into force in April 2014.

Spectrum rights in the UK are made available by auction. Licences are tradable (see section 5 below) and — with the exception of broadcasting licences — run indefinitely. Coverage obligations are attached to mobile licences. An obligation was included in one of the 800 MHz blocks requiring the operator to provide coverage to 98 % of the UK population (indoors) by the end of 2017, including at least 95 % of the population in each of England, Scotland, Wales and Northern Ireland. Since December 2014 a further obligation has been imposed on mobile licence holders requiring them to provide coverage for voice and SMS (text messaging) services to 90 % of the UK land mass by 2017.

When setting fees, Ofcom ensured the optimal use of spectrum resources (Art. 13 AuD) by applying ‘Administered Incentive Pricing’ (AIP). In this way, it charged fees that were higher than the administrative cost associated with spectrum management.

Limits on electromagnetic fields fall under the competence of the Department of Health. They are not stricter than the limits set at EU level (in the Council Recommendation of 12 July 1999).

As regards mobile satellite services (MSS) operators and the conditions attached to MSS services, Ofcom issued a draft compliance notice to both Inmarsat and Solaris in June 2014. This was followed by formal compliance notices which were issued to both operators in March 2015. The compliance notices set out the steps that the operators must take to comply with the conditions attached to their relevant spectrum holdings, including that they must bring the spectrum into use no later than 1 December 2016.

A large number of smaller operators, including over-the-top providers, provide various types of services using mobile number ranges allocated to them. Ofcom has estimated that the total off-net mobile traffic volume terminated by smaller operators with mobile numbers, but without MVNO arrangements, is below 0.2 % of the total mobile call termination traffic.

5. SPECTRUM MANAGEMENT

On 19 November 2014, Ofcom published a statement setting out its decision to change use of the 700 MHz band from digital terrestrial television (DTT) and programme-making and special events (PMSE) to mobile data. Ofcom aims to complete this change as soon as practicably possible and believes it should be possible to make the band available for mobile data across the UK by the end of 2021 and potentially sooner. However, it is exploring whether there is scope to release the band sooner than this nationally or in some regions.

All licences covering EU-harmonised bands meet the requirements of being technology neutral and tradable. The total number of trades between 2008 and 2014 was just over 11 000 (averaging roughly 2 % per year of the total number of tradable licences). Ofcom uses a technology and service neutrality approach to awarding new licences (within the constraints of the technical conditions set by relevant Commission Implementing Decisions or necessary to avoid harmful interference). Existing licences have been liberalised where possible. For example the mobile spectrum licences at 900MHz, 1800MHz and 2.1GHz have been liberalised to enable 2G, 3G and 4G use. Also, broadband wireless access licences in the 3.5GHz band have been varied to permit

mobile as well as fixed use and the CGC licence for 2 GHz MSS is available on a flexible basis.

6. RIGHTS OF WAY AND ACCESS TO PASSIVE INFRASTRUCTURE

Under the UK's Electronic Communications Code (ECC), Ofcom has powers to grant general entitlements to rights of way over public or private land to operators, subject to consultation; the average time is six months. In February 2013, the Law Commission made recommendations to the UK Government on reforming the ECC. These focus on private property rights between landowners and operators and do not consider planning issues. Many of them were included in a new ECC, which on 13 January 2015 the Government included in an amendment of the Infrastructure Bill then going through Parliament. However, on 22 January the Government withdrew the draft ECC from the legislative procedure. On 26 February it launched a consultation on a new draft and an accompanying draft bill that is very similar to the withdrawn amendments. The deadline for the consultation was 30 April 2015.

7. CONSUMER ISSUES

7.1. The European emergency number 112

Ofcom has set criteria in relation to caller location and amended the binding 'General Conditions of Entitlement' (GC). Specifically, GC4 states that operators should provide accurate and reliable caller location information as far as is technically feasible. Such information must, at least, accurately reflect the fixed location of the caller's terminal equipment including the full postal address, or, for mobile calls, the cell identification (i.e. the geographical coordinates of the cell which is hosting the call and, where available, an indication of the radius of its coverage). Following Ofcom's public call for input in October 2013 on location information for emergency calls from mobile phones, in August 2014 it issued a statement that recognised the industry-led initiatives (involving *inter alia* handset manufacturers and MNOs) to test and launch enhanced location capability. As a result, the emergency services are receiving increasing numbers of emergency calls with highly accurate location information. Post-call review of selected calls indicates that many have been located to within a few metres of the actual caller location. Ofcom therefore concluded that there was no reason to change the obligations under GC4 at this stage.

Disabled end-users with hearing or speech impairments can contact the UK emergency services via text relay or emergency SMS. Text relay is now available in a new format (Next Generation Text Relay). In addition, a free mobile app was launched in October 2014 that uses 3G, 4G or a broadband connection to make a relay call. No registration is required, but the app must be downloaded. The service is compatible with textphones, but can also be used on standard smartphones, tablets and PCs. Visitors to the UK must use a textphone or have a UK SIM card to use the app on a mobile handset. Emergency SMS transforms a text message into voice and passes it to the emergency services via the text relay call centre. This service can be used when 3G, 4G or wifi is not available, or when the mobile signal is poor. Registration can be done in less than a minute by texting 'register' to 112 or 999, and no proof of disability is required. Since 2014, text relay has been much easier to use on mobile devices via the Next Generation Text (NGT) app, and this can be used for emergency calls. Emergency SMS will remain available alongside

NGT Relay so that disabled end-users can contact emergency services with or without a broadband connection.

7.2. Number portability

Number portability ²⁰		2013	2014
Fixed	Number of transactions	-	-
	% of total numbers	-	-
	Maximum wholesale price	£ 23	£ 23 ²¹
	Maximum time under regulation (number of working days)	1	1
Mobile	Number of transactions	4 048 283	5 707 624
	% of total numbers	-	-
	Maximum wholesale price	0	0
	Maximum time under regulation (number of working days)	1	1

The requirements for number portability are set out in GC18. These include the requirement to port numbers within one working day. In September 2014 five key enhancements for the harmonisation to a single ‘Gaining Provider Led’ switching process came into effect affecting all switches on the Openreach platform (not just those involving a number port). By June 2015 all switches for fixed voice and/or broadband services over the Openreach (copper) network will be done via that process. Ofcom is reviewing switching processes on mobile networks and for bundles, including services provided on satellite and cable infrastructure. Ofcom published a call for inputs in July 2014, and will announce next steps in spring 2015.

7.3. Contractual obligations

Article 30 of the USD is transposed into UK law in GC9 which also contains the requirements on contract duration imposed on communications providers. Specifically, GC9.4 limits the maximum duration of consumer contracts to 24 months, while GC9.5 requires providers to ensure that all users are able to subscribe to a contract with a maximum duration of 12 months. The right of subscribers to withdraw from their contracts upon notice from providers of changes to the contractual conditions, as laid down in Article 20(2) USD, was transposed in GC9.6. Ofcom’s guidance on how to apply GC9.6 for mid-contract price rises in consumer and small business contracts came into effect on 23 January 2014.

7.4. Other consumer issues

The UK has several instruments available to help increase transparency over general tariffs and conditions. Ofcom runs an accreditation scheme for price comparison websites for fixed line, mobile, broadband and television services. The scheme aims to provide

²⁰ Source: figures provided by the UK to the European Commission via the EU Communications Committee (COCOM) for the Scoreboard of the Digital Agenda for Europe.

²¹ Price ranges from £0.59 to £22.61.

assurance that the price comparison calculations are accessible, accurate, up to date, transparent and comprehensive. It currently has six accredited members. Ofcom also monitors ISPs' compliance with the Broadband Speeds Code of Practice and monitors and reports on the quality of internet access services and the transparency of information available to consumers on traffic management practices (see details at section 10.2 below). It also publishes reports detailing complaints data received by its consumer contact team for each provider. Consumers can use this information to compare providers.

In order to limit consumer's phone bills, some mobile operators offer financial caps on all or some of their tariffs, which restrict voice, text or data services beyond a monthly allowance. Other operators allow consumers to 'top up' and continue to use services. Mobile operators offer data usage alerts via SMS to let the consumers know they are reaching/have reached their data allowance (or voice services). All the main operators also offer online bill checkers and apps to help consumers control their usage. As part of the UK Government's telecoms consumer action plan, Ofcom is working with DCMS and stakeholders in industry to establish a liability cap for unauthorised use of lost and stolen phones. In January 2015, one MNO introduced a £ 100 cap, provided that the loss or theft is reported within 24 hours. All the large MNOs have now also agreed to implement an equivalent liability cap.

Ofcom mandates a range of services for disabled users of telecommunications services. These services, which include NGTR (see above) are set out in GC15. Ofcom is continuing to work with stakeholders, government and industry to make it easier for communications users who rely on British Sign Language (BSL) to communicate using video relay (VR).

Under GC14, all communications providers in the UK are required to have a complaints code of practice that complies with standards set by Ofcom, and to provide access to one of two alternative dispute resolution (ADR) schemes approved by Ofcom: the Ombudsman Services and the Communications and Internet Services Adjudication Scheme (CISAS).

Under GC20.1, end-users from other Member States can access non-geographic numbers in the UK. In addition, BT is under a specific end-to-end connectivity obligation to purchase call termination services from any operator on reasonable terms and conditions. Although the obligation only applies specifically to BT, Ofcom expects all operators to provide such access and would intervene if this proved not to be the case. Ofcom has also intervened to make 080 and 116 numbers free-to-caller for consumers. In order to ensure that the changes in wholesale arrangements resulting from this do not lead to a breakdown in connectivity, it imposed an access condition on terminating operators which host 080 and 116 numbers. This ensures that the commercial terms, including charges, for connecting such calls are fair and reasonable for all parties. These changes are due to come into force on 26 June 2015.

8. UNIVERSAL SERVICE

In the UK, universal service (US) includes the following services: internet connection, telephony services, schemes for consumers with special social needs, call box services, relay service for textphone users, tariffs for US, itemised billing, directory enquiry services and directories and quality of service. In the UK, broadband is not currently part

of the universal service obligation (USO): the obligation to facilitate functional internet access refers to a line capable of supporting a dial up modem. However, in 2009 the Government introduced a (legally non-binding) ‘Universal Service Commitment’ that every household should have access to broadband speeds of at least 2Mbit/s. It is estimated that 97 % of UK premises can receive a broadband connection of at least 2Mbit/s. BT and KCOM continue to be the designated universal service providers due to their wholesale narrowband SMP status. There is no cost-sharing mechanism for US in the UK and the costs are borne by the designated US providers. Ofcom assessed the net burden of US in 2006 and found that there was no net burden given the benefits accruing to the incumbents, as set out in the 2006 USO Statement.

9. NET NEUTRALITY

9.1. Legislative situation

There is no law in place in the UK regarding net neutrality. In November 2011, Ofcom published a statement setting out its approach to net neutrality and providing guidance to ISPs, focusing particularly on what changes to the market might prompt regulatory intervention. The key points were consumer transparency, coexistence between ‘best efforts’ internet access and the provision of managed services and innovation. Blocking of services was considered highly undesirable.

There are three separate self-regulatory codes relevant to net neutrality and the quality of broadband access services: one relating to Broadband Speeds (see under section 10.2. below), one on Traffic Management Transparency, and one on the Open Internet.

All major fixed and mobile broadband service providers in the UK have signed up to a voluntary code on Traffic Management Transparency for broadband services. This ensures that clear, understandable and comparable information on traffic management practices is available to consumers. The code addresses ISPs’ obligation to provide transparent traffic management information (including a standardised Key Facts Indicator table, summarising the traffic management policy for each package on offer) as they are required to under their General Conditions. Ofcom reviews compliance with these commitments by means of a regular ‘mystery shopping’ research exercise. In 2014, following the publication of Ofcom audience research into consumers’ understanding of the issues, ISPs reviewed and revised their approach to providing this information.

The vast majority of internet provision in the UK is now subject to the industry-led voluntary Open Internet code of practice, under which the signatories committed themselves not to block legal content, applications or services. This complements the Traffic Management Transparency Code signed in 2011. Several major fixed and mobile ISPs (Virgin Media, Vodafone and EE) joined the scheme in 2014, after other ISPs signed up in 2012. On the mobile side, this means there are no longer any MNO packages with VOIP restrictions offered in the UK.

9.2. Quality of service

Since 2009, all major and most small-scale ISPs have been signatories of the voluntary Broadband Speeds Code of Practice, which requires them to provide consumers with information on the maximum broadband speed they can expect to achieve. The backstop of formal regulation by Ofcom has incentivised ISPs to abide by the Code principles.

Ofcom is currently carrying out a review of the Code and aims to publish a revised version in the first half of 2015.

Ofcom has an extensive work programme aimed at monitoring and reporting on the quality of internet access services. The programme includes independent technical measurement, consumer research and analysis gathering information from communications providers. Annually, Ofcom publishes a technical report on the quality of fixed-line broadband services covering speed and other quality parameters (e.g. latency, jitter, DNS resolution). The most recent report, dated February 2015, found that mean speeds had improved to 22.8Mbps. In 2014 Ofcom published its first report on mobile broadband speeds, with a second to follow in the second quarter of 2015.

Glossary

4G	4G, short for fourth generation, is the fourth generation of mobile telecommunications technology, succeeding 3G and preceding 5G.
ACM	The <i>Autoriteit Consument en Markt</i> (ACM) is the Dutch Regulatory Authority for telecommunications.
AGCOM	The <i>Autorità per le garanzie nelle comunicazioni</i> (AGCOM) is the Italian Regulatory Authority for telecommunications.
AKOS	The <i>Agencija za komunikacijska omrežja in storitve Republike Slovenije</i> (AKOS) is the Slovenian Regulatory Authority for telecommunications.
ANACOM	The <i>Autoridade Nacional de Comunicações</i> (ANACOM) is the Portuguese Regulatory Authority for telecommunications. The same acronym is also used by the <i>Autoritatea Națională pentru Administrare și Reglementare în Comunicații</i> (ANACOM), the Romanian Regulatory Authority for telecommunications.
ARCEP	The <i>Autorité de régulation des communications électroniques et des postes</i> (ARCEP) is the French Regulatory Authority for telecommunications.
ARPU	The Average Revenue Per User (ARPU) is a measure used primarily by consumer communications and networking companies, defined as the total revenue divided by the number of subscribers.
Basic broadband	Broadband of at least basic quality of 144 Kbps and higher.
BEREC	The Body of European regulators for electronic communications (BEREC) and the BEREC Office were created by Regulation 1211/2009 of the European Parliament and of the Council of 25 November 2009 to assist the Commission and the national regulatory authorities (NRAs) in the implementation of the EU regulatory framework for electronic communications, to give advice on request and on its own initiative to the European institutions and to complement at European level the regulatory tasks performed at national level by the regulatory authorities, all in the aim of creating an internal market for electronic communications. BEREC is composed of the 28 NRAs.
BNetzA	The <i>Bundesnetzagentur</i> (BNetzA) is the German Regulatory Authority for telecommunications.
BSA	The bitstream access (BSA) refers to the situation where a wireline incumbent installs a high speed access link to the customer's premises and then makes this access link available to third parties, to enable them to provide high speed services to customers.
BU-LRIC	The Bottom-Up Long Run Incremental Costs (BU-LRIC) modelling approach develops a cost model starting from the expected demand in terms of subscribers and traffic; it then models the efficient network that is required to meet the expected demand, and assesses the related costs according to a theoretical network-engineering model. The purpose of a bottom-up model is to calculate the cost on the basis of an efficient network using the

	newest technology employed in large-scale networks.
Bundled offers	Offers which include more than one service. In particular, a double play is an offer where the user can bundle two services, choosing between voice, video and data. A triple-play offer is one in which voice, video and data are all provided in a single access subscription. Finally, quadruple-play also contains the provision of mobile services.
CATV	Cable television.
CEPT	European Conference of Postal and Telecommunications Administrations. The acronym comes from the French version of its name: <i>Conférence européenne des administrations des postes et des telecommunications</i> .
CGC	The complementary ground components (CGC) of mobile satellite systems are ground based stations used at fixed locations, in order to improve the availability of the mobile satellite service in geographical areas within the footprint of the system's satellite(s), where communications with one or more space stations cannot be ensured with the required quality.
CLI	Caller Line Identification telephony network service.
CNMC	The <i>Comisión Nacional de los Mercados y la Competencia</i> (CNMC) is the Spanish Regulatory Authority for telecommunications.
Cocom	The Communications Committee (Cocom) assists the Commission in carrying out its executive powers under the regulatory framework and the regulation on the .eu Top Level Domain. The Cocom exercises its function through advisory and regulatory procedures in accordance with the Council Comitology Decision. Furthermore, the Cocom provides a platform for an exchange of information on market developments and regulatory activities.
COMREG	The <i>Commission for Communications Regulation</i> (ComReg) is the Irish Regulatory Authority for telecommunications.
Coverage	Coverage is the availability of the network for those who want to subscribe to the service, as a percentage of the population. If the whole population can take a subscription to access a particular network, the coverage is 100 %.
CRC	The <i>Communications Regulation Commission</i> (CRC) is the Bulgarian Regulatory authority for telecommunications.
CTO	The <i>Czech Telecommunication Office</i> (CTO) is the Czech Regulatory authority for telecommunications.
DAE	The Digital Agenda for Europe (DAE) is the EU's strategy to help digital technologies, including the internet, to deliver sustainable economic growth.
DBA	The <i>Danish Business Authority</i> (DBA) is the Danish regulatory Authority for telecommunications.
DOCSIS	Data Over Cable Service Interface Specification is an international telecommunications standard that permits data transfer over a cable TV network. DOCSIS 3.0, released in 2006, significantly increased

	the speeds of the data transfer.
DSL	Digital Subscriber Line is a technology that uses the existing telephone copper wire infrastructure for internet access.
DTT	Digital terrestrial television (DTT) is an implementation of digital technology to provide a greater number of channels and/or better quality of picture and sound through a conventional antenna (or aerial) instead of a satellite dish or cable connection.
DVB-T2	The Digital Video Broadcasting — Second Generation Terrestrial (DVB-T2) is the extension of the television standard DVB-T, devised for the broadcast transmission of digital terrestrial television.
ECA	The <i>Estonian Competition Authority</i> (ECA) is the Estonian Regulatory authority for telecommunications.
ECN	Electronic communications network.
EETT	The <i>Hellenic Telecommunications and Postal Regulation Committee</i> (EETT) is the Greek Regulatory Authority for telecommunications.
EMF	Electromagnetic fields.
ESIF	European Structural and Investment Funds.
FICORA	The <i>Finnish Communications Regulatory Authority</i> (FICORA) is the Finnish Regulatory authority for telecommunications.
Framework Directive	The Directive on a common regulatory framework for electronic communications networks and services (the ‘Framework Directive’) is one of the five Directives of the Regulatory framework for electronic communications. See also <i>Regulatory framework</i> .
FTR	Fixed Termination Rates (FTR) are the charges which one telecommunications operator charges to another for terminating fixed calls on its network.
FTTB	Fibre to the Business, Fibre to the Building, or Fibre to the Basement (FTTB) is a type of fibre optic cable installation where the fibre cable goes to a point on a shared property and the other cabling provides the connection to single homes, offices or other spaces.
FTTC	Fibre to the Curb or Cabinet (FTTC) is a telecommunications system based on fibre optic cables which run to a platform that serves several customers.
FTTH	Fibre-to-the-home network, which connects the end customer's premises with fibre, i.e. an access network consisting of optical fibre lines in both the feeder and the drop segments of the access network (including in-house wiring). Other possibilities include installing optical fibre closer, but not all the way to the end customer's premises, such as FTTC (Fibre To The Curb) and FTTB (Fibre To The Building)
FTTO	Fibre to the Office (FTTO) is a fibre optic cable which goes directly to the office.

FTTP	Fibre to the Premises (FTTP) is a technology for providing internet access by running fibre optic cable directly from an Internet Service Provider (ISP) to a user's home or business.
GHz	Gigahertz.
GPON	Gigabit-capable Passive Optical Networks.
HAKOM	The <i>Hrvatska agencija za poštu i elektroničke komunikacije</i> (HAKOM) is the Croatian Regulatory Authority for telecommunications.
High speed broadband	High speed broadband is a broadband service provided through a Next Generation Network (NGN).
HQWBA/LL	High Quality wholesale broadband access and leased lines.
HSPA	The High Speed Packet Access (HSPA) is the extension of the UMTS standard allowing for faster data transfer.
IBPT	The <i>Institut belge des services postaux et des télécommunications</i> (IBPT) is the Belgian Regulatory Authority for telecommunications.
ILR	The <i>Institut Luxembourgeois de Régulation</i> (ILR) is the Luxembourgish Regulatory Authority for telecommunications.
IP	A protocol used for communicating data across a packet-switched internetwork using the Internet Protocol Suite (TCP/IP).
IPTV	Internet Protocol television (IPTV) is a system for delivering television services over IP networks (see IP).
ISDN	The Integrated Services for Digital Network (ISDN) is a set of communication standards for simultaneous digital transmission of voice, video, data, and other network services over the traditional circuits of the public switched telephone network.
ISP	An Internet Service Provider (ISP) is an undertaking that offers users access to the internet and possibly also related services.
KPI	Key performance indicators (KPIs) measure the level of performance in the provision of the relevant wholesale services.
LLU	Local Loop Unbundling.
LRIC	Long Run Incremental Costs (LRIC) are the costs that are directly associated with the production of a business increment, i.e. the additional cost of supplying a service over and above the situation where the service was not provided, assuming all other production activities remain unchanged. 'Long run' means that all factors of production including capital equipment are variable in response to changes in demand due to changes in the volume or in the structure of production, therefore all investments are considered as variable costs.
LRIC+	Long run incremental costs plus common costs allocation.
LTE	Long-Term Evolution. High performance communication system for cellular mobile phones. Step towards 4 th generation, but commonly called 4G.
Mbps	Megabits per second.

MCA	The <i>Malta Communications Authority</i> (MCA) is the Maltese Regulatory Authority for telecommunications.
MDF	Main Distribution Frame.
MHz	Megahertz.
MNO	Mobile Network Operator.
Mobile broadband	Mobile broadband is the name used to describe various types of wireless high speed internet access through a portable modem, telephone or other device. Various network standards may be used, such as WiMAX, UMTS/HSPA, EV-DO and some portable satellite-based systems.
MS	EU Member State.
MSS	Mobile satellite services (MSS) allow communications between satellites and mobile terrestrial equipment. Their use can range from high speed internet access to mobile television and radio and emergency communications. Mobile satellite services cover a large part of the EU's territory, thereby reaching millions of EU citizens across borders. They can ensure access for all Europeans to new communication services, not only in metropolitan areas, but also rural and less populated regions.
MTR	Mobile Termination Rate.
MVNO	A mobile virtual network operator (MVNO) is a wireless communications services provider that does not have its own licensed spectrum and does not own the wireless network infrastructure over which it provides services to its customers.
Net Neutrality	Network neutrality is the principle that all electronic communications passing through a network are treated equally. This means that it is treated independently of (a) content, (b) application, (c) service, (d) device, (e) sender address and (f) receiver address. Under the reformed Telecom Rules, national telecoms regulatory authorities will in particular be required to promote 'the ability of end-users to access and distribute information or run applications of their choice'.
NGA	Access networks which consist wholly or in part of optical elements and which are capable of delivering broadband access services with enhanced characteristics (such as higher throughput) as compared to those provided over already existing copper networks. In most cases NGAs are the result of an upgrade of an already existing copper or co-axial access network.
NMHH	The <i>National Media and Infocommunications Authority</i> (NMHH) is the Hungarian Regulatory Authority for telecommunications.
NRA	A National Regulatory Authority (NRA) is a body or bodies charged by a Member State with any of the regulatory tasks assigned in the Regulatory framework for telecommunications.
OCECPR	The <i>Office of the Commissioner for Electronic Communications and Postal Regulation</i> (OCECPR) is the Cypriot Regulatory Authority for telecommunications.
Ofcom	The <i>Office of Communications</i> (Ofcom) is the UK Regulatory

	authority for telecommunications.
Optical fibre	An optical fibre is a fibre made of glass or plastic allowing the fast transmission of information over light over long distances with very high data rates.
OTT	Over-the-top content (OTT) refers to delivery of video, audio and other media over the internet without a multiple system operator being involved in the control or distribution of the content.
PATS	Publicly Available Telephone Services.
Penetration	Penetration is the number of actually subscribed lines per 100 inhabitants. For fixed line broadband there is often one subscribed line per household or business location, so that in a fully saturated market the penetration will be (much) lower than 100 %. In contrast, for mobile services, where generally individuals have a separate subscription for certain mobile devices (e.g. phones, tablets, GPS devices), in a saturated market the penetration rate can reach well over 100 %.
PPP	It has two different meanings: Purchasing Power Parity (PPP) is a component of some economic theories and is a technique used to determine the relative value of different currencies. Public Private Partnership (PPP) is the operation of a service in the partnership of government and the private sector.
PSTN	The public switched telephone network (PSTN) is the aggregate of the circuit-switched telephone networks that are operated by national, regional, or local operators, providing infrastructure and services for public telecommunication.
PTS	The <i>Post- och telestyrelsen</i> (PTS) is the Swedish Regulatory authority for telecommunications.
Pure BU-LRIC	See BU-LRIC. The term is used in contrast with BU-LRIC+.
Pure-LRIC	See LRIC. The term is used in contrast with LRIC+.
Radio spectrum	Part of the electromagnetic spectrum corresponding to radio frequencies. For the purpose of the Spectrum Decision, it includes radio waves in frequencies between 9 kHz and 3 000 GHz. Radio waves are electromagnetic waves propagated in space without artificial guide.
Regulatory framework	It refers to the Regulatory framework for electronic communications including four specific Directives, namely: Directive on a common regulatory framework for electronic communications networks and services (the 'Framework Directive'); Directive on the authorisation of electronic communications networks and services (the 'Authorisation Directive'); Directive on access to, and interconnection of, electronic communications networks and associated facilities (the 'Access Directive'); Directive on universal service and users' rights relating to electronic communications networks and services (the 'Universal Service Directive'). In addition to this list, there is also the Decision on a regulatory framework for radio spectrum policy (the 'Radio Spectrum Decision'). The 'Telecoms Package' was

	amended in December 2009 by the two Directives ‘Better Regulation’ and ‘Citizens’ Rights’, as well as by the BEREC regulation.
RRT	The <i>Lietuvos Respublikos ryšių reguliavimo tarnyba</i> (RRT) is the Lithuanian Regulatory Authority for telecommunications.
RSPG	The Radio Spectrum Policy Group (RSPG) is an advisory body composed of High Level officials from the Member States responsible for radio spectrum policy created by the Commission. The group advises the Commission (and, following the entry into force of the new regulatory framework, may provide reports and opinions to Parliament and Council) on strategic issues concerning radio spectrum policy.
RSPP	The Radio Spectrum Policy Programme (RSPP). A multiannual programme (Decision 243/2012/EU) that defines the roadmap for how Europe can translate political priorities into strategic policy objectives for radio spectrum use.
RTR	The <i>Rundfunk und Telekom Regulierungs-GmbH</i> (RTR-GmbH) is the Austrian Regulatory Authority for telecommunications.
RÚ	The <i>Úrad pre reguláciu elektronických komunikácií a poštových služieb</i> (RÚ) is the Slovakian Regulatory Authority for telecommunications.
SIM card	A subscriber identity module or subscriber identification module (SIM) card is used to identify and authenticate subscribers on mobile telephony devices (such as mobile phones and computers).
SLA	Service Level Agreements (SLAs) are commercial agreements under which the SMP operator is obliged to provide access to wholesale services with a specified level of quality.
SLG	Service Level Guarantees (SLGs) form an integral part of SLAs and specify the level of compensation payable by the SMP operator if it provides wholesale services with a quality inferior to that specified in the SLA.
SLU	Sub-loop unbundling.
SMEs	Small and medium enterprises.
SMP	Significant Market Power.
SPRK	The <i>Sabiedrisko pakalpojumu regulēšanas komisija</i> (SPRK) is the Latvian Regulatory Authority for telecommunications.
TDM	Time-division multiplexing (TDM) is a method of transmitting and receiving independent signals over a common signal path by means of synchronised switches at each end of the transmission line so that each signal appears on the line for only a fraction of time in an alternating pattern.
Termination rates	Termination rates are the charges which one telecommunications operator charges to another for terminating calls on its network.
UKE	The <i>Urząd Komunikacji Elektronicznej</i> (UKE) is the Polish Regulatory Authority for telecommunications.

UMTS	The Universal Mobile Telecommunications System (UMTS) is a third generation mobile cellular system for networks based on the GSM standard.
US	The Universal Service (US) is the minimum set of services, defined in the Universal Service Directive (USD), of specified quality which is available to all users regardless of their geographical location and, in the light of specific national conditions, at an affordable price.
USD	Universal Service Directive. See Universal service (US).
VDSL	Very-high-bit-rate Digital Subscriber Line; see DSL; the internet access is at high speed.
VDSL2	Very-high-bit-rate Digital Subscriber Line 2; see VDSL; speeds are higher.
VoIP	Voice over IP (VoIP) is a technology for delivering voice communications over IP networks (see IP).
VoLTE	Voice over LTE (VoLTE) is a technology for delivering voice communications over LTE networks (see LTE).
WBA	Wholesale Broadband Access.
WRC	World radiocommunication conferences (WRC) are held every three to four years. It is the job of WRC to review, and, if necessary, revise the Radio Regulations, the international treaty governing the use of the radio frequency spectrum and the geostationary-satellite and non-geostationary-satellite orbits.
xDSL	A collective term for all types of digital subscriber lines, including asymmetric digital subscriber line (ADSL), symmetric digital subscriber line (SDSL) and high-data-rate digital subscriber line (HDSL).