Europe's Digital Progress Report (2017)

Telecom chapter

Romania

1. Competitive environment

Coverage	RO-2015	RO-2016	EU-2016
Fixed broadband coverage (total)	89%	89%	98%
Fixed broadband coverage (rural)	81%	82%	93%
Fixed NGA coverage (total)	70%	72%	76%
Fixed NGA coverage (rural)	29%	34%	40%
4G coverage (average of operators)	no data	45%	84%

Source: Broadband Coverage Study (IHS and Point Topic). Data as of October 2015 and October 2016.

In 2016 Romania continued to progress slowly towards achieving the Digital Agenda for Europe objectives. However, Romania's fixed broadband coverage stagnated at 89% in the past year and still lags behind other Member States (26th in the EU according to the Digital Economy and Society index). Broadband take-up reached 63% of households but was still below the EU average of 74%. Romania's urban-rural digital divide is best illustrated by the figures for next-generation access (NGA) coverage, where urban areas are twice as better served as rural areas. Romania also lags behind on mobile 4G broadband coverage, ranking last among EU Member States (45% of households, average/operator).

Fixed broadband market

Fixed broadband market shares	RO-2015	RO-2016	EU-2016
Incumbent market share in fixed broadband	26.0%	24.8%	40.7%
Technology market shares			
DSL	24.5%	22.2%	66.8%
Cable	11.9%	12.8%	19.1%
FTTH/B	53.8%	55.7%	10.7%
Other	9.7%	9.3%	3.4%

Source: Communications Committee. Data as of July 2015 and July 2016

Charges of Local Loop Unbundling (monthly average total cost in €)	RO-2015	RO-2016	EU-2016
Full LLU	1.6	1.6	9.2
Shared Access	0.6	0.6	2.4

Source: Communications Committee. Data as of July 2015 and July 2016

The strong infrastructure-based competition in Romania, mainly in urban areas, is reflected in two indicators where the country's performance is outstanding. With almost twice as many subscriptions to fast broadband (70% of subscriptions, second place in the EU), Romania largely outperforms the EU average of 37%. This is due to the large share of fibre deployment in the market. In the fixed broadband market, an alternative operator has the biggest market share by relying on FTTx infrastructure, and further increased its market share over 2016.

New entrants' DSL subscriptions by type of access (VDSL excluded)[1]	RO-2015	RO-2016	EU-2016
Own network	52%	64%	0.7%
Full LLU	47.7%	36.3%	75.3%
Shared access	-	-	4.1%
Bitstream	-	-	13.4%
Resale	-	-	6.6%

Source: Communications Committee. Data as of July 2015 and July 2016

As the technologies market shares suggest, the Romanian broadband market is characterised by platform-based competition, while there is marginal uptake of DSL subscriptions by new entrants. As of 30 June 2016 only 91 unbundled local loops were reported. Only very small alternative operators have 'legacy' DSL networks that were historically part of the incumbent's network. Although the incumbent's market share of DSL lines is close to 100%, in 2016 the DSL subscriptions' share in the fixed broadband market by technology slid to 22.2%.

On the broadband market 697 operators provide fixed broadband internet access, of which 29 by cable network, 150 by fibre, 170 by radio, 9 by xDSL and 559 by UTP/FTP cable. There has been steady growth in fixed broadband connections over recent years, reaching 4,212 million in July 2016.

In the first half of 2016, 29 new entrants were registered to provide fixed broadband services through optical fibre, radio or UTP/FTP access technologies. The number of internet service providers commercially offering high-speed broadband internet access services is growing rapidly. As a result, 57% of connections in Romania provided speeds above or equal to 100 Mbps (highest share in the EU), while 70% were above or equal to 30 Mbps (second highest in the EU).

On 30 June 2016 there were 30 suppliers of telephony services through VoIP, while 19 suppliers offered managed VoIP services. The number of managed VoIP lines as of 30 June 2016 was 2.2 million (10% increase since 30 June 2015), of which approximately 11% were business users. The total managed VoIP-originated traffic represented 43 % of the total voice traffic through fixed networks in the first half of 2016.

The lowest fixed broadband price (12 Mbps or above) is €12.39, compared to €21.33 at EU level[2].

Mobile market

Mobile market	RO-2015	RO-2016	EU-2016
Market share of market leader	42%	40%	34%
Market share of second largest operator	30%	29%	28%
Number of MNOs	5	5	-
Number of MVNOs	1	1	-
Market share of MVNO (SIM cards)	0%	2%	-

Source: Communications Committee. Data as of October 2015 and October 2016.

[1] 91 unbundled local loops.

[2] Source: Fixed broadband prices in Europe in 2016 (Empirica). Prices expressed in EUR/Purchasing Power Parity (PPP), VAT included. Data as of autumn 2016.

There are six mobile operators offering voice services in the Romanian market, while seven operators provide mobile broadband internet access services.[3] Two national roaming agreements are in place. By the end of 2016, one mobile network virtual aggregator (MVNA) and three mobile virtual network operator (MVNO) agreements were submitted to ANCOM. Passive network sharing agreements are in place between all mobile network operators.

Mobile broadband prices (EUR)	RO-2015	RO-2016	EU-2016
Least expensive offer for handset (1 GB + 300 calls basket)	26	19	30
Least expensive offer for tablet and laptop (5 GB basket)	24	20	18

Source: Mobile Broadband Price Study (Van Dijk). Prices expressed in EUR/PPP, VAT included. Data as of February 2015 and February 2016.

Overall, mobile broadband prices significantly decreased last year[4] in Romania. The price levels vary compared with the EU average depending on the device on which broadband is used: the offer for the least expensive 1 GB+300 min calls service is well below the EU average (19 EUR/PPP versus 30 EUR/PPP) while the least expensive offer for tablet and laptop for a 5 GB service is above the EU average (20 EUR /PPP versus 18 EUR/PPP).

Telecom revenues

In 2015 telecom revenues totalled €3.17 billion, having stagnated around this level in the past 4 years. Meanwhile, the retail broadband revenues steadily increased in recent years, reaching €0.69 billion in 2015. The average revenue per minute in voice mobile communications was €0.0143 in 2015. For the same period, the average revenue per user in mobile communications was €47.7.

2. Measures facilitating deployment and investments in high-speed networks

a. Spectrum

Harmonised bands	MHz spectrum assigned[5]	% of the harmonised band assigned
700 MHz	0	0
800 MHz	50	83.3
900 MHz	70	100
1 500 MHz	0	0
1 800 MHz	150	100
2 000 MHz paired	120	100
2 600 MHz	110	57.9
3 400-3 600 MHz	150	75
3 600-3 800 MHz	145	72.5

[3] One operator is majority owned (more than 50%) by a Mobile Network Operators operating in the Romanian market, therefore it is not counted in the table above as MVNO

[4] Based on the February 2016 price survey.

[5] Including guard bands.

In Romania 73%[6] of the spectrum harmonised at EU level for wireless broadband has been assigned. Romania is now in the top half (ninth place) in the ranking of Member States in terms of harmonised spectrum assignment, achieving an 6,5% increase over the last year. This was due to the entry into force in January 2016 of the new licences in the 3.4-3.8 GHz band granted through a competitive selection procedure in 2015. The new licences have a validity of 10 years (until 31 December 2025). Currently, there is no more spectrum available in the 3.6-3.8 GHz band[7], while in the 3.4-3.6 GHz band five duplex channels (2x5 MHz each) are still not assigned. The licences do not include coverage obligations, only the obligation to install a certain number of base stations in the first, second and fourth years after the licence enters into force. The tarrifs for the use of spectrum for radio channels within the new channel arrangements in the 3.4-3.8 GHz band were determined proportionately to the amount of previously existing tariffs in these frequency bands.

Future plans for the use of wireless broadband frequency bands

While there is growing interest in **wireless broadband (**WBB) deployment in the medium and long term, the ongoing investments in the 4G networks delayed the interest of operators in acquiring new spectrum.

On the basis of its 2017 action plan, on which stakeholders were consulted at the end of 2016, the Romanian telecoms regulator ANCOM intends to launch a new public consultation to evaluate future spectrum requirements based on market demand in the 800 MHz, 2 600 MHz and 3 400-3 600 MHz bands as well as in the newly designated 700 MHz and 1 500 MHz WBB bands.

The 700 MHz band is already available at national level for WBB communications services, but it can only be used efficiently if the band is not used for digital terrestrial television on the territory of neighbouring countries, whether Member States or non-EU countries.

In December 2016 ANCOM launched the competitive selection procedure to award licences for the use of radio frequencies for digital terrestrial television systems[8].

b. EU and national investments in broadband

For the 2014-2020 financial framework, the Romanian Operational Programme for Competitiveness (2014-2020) has earmarked €100 million from the European Regional Development Fund (ERDF), while the 2014-2020 Rural Development Operational Programme has allocated €35 million from the European Agricultural Fund for Rural Development (EAFRD).

However, the RoNet project to support deployment of backhaul networks in 'white areas' had ERDF financing of €57 million in the previous financing period but could only absorb €12.6 million by the end of the eligibility period (December 2015). Consequently, Romania re-allocated structural funds (€45,779,730.26 from the ERDF) to finalise the RoNet project in

[6] This percentage slightly differs from the one used in the EDPR country profile following feedback from the authorities concerned and reflected in the above table

[7] 55 MHz spectrum is allotted for governmental use

[8] ANCOM awarded two new digital television multiplexes through the auction held in January 2017 following the auction commission's analysis of the bids submitted by two bidders.

the current financing period, ensuring backhaul infrastructure for more than 600 localities. In 2016 the project was finalised in 259 localities.

For a significant part of the remaining white areas, a grant scheme is to finance last-mile access infrastructure owned by the beneficiary operator. The scheme is due to receive co-financing of €54.2 million from the ERDF. In December 2016, a ministerial decree[9] proposed the grant scheme for financing under the Operational Programme for Competitiveness.

ANCOM has well defined competences with regard to publicly financed broadband infrastructures. The conditions of open access to publicly financed network/infrastructure must be approved by ANCOM and it also has the power to monitor the conditions of open access. However, it is the funding authority that enforces penalties in the event of failure to comply with the open access obligations. ANCOM has the competence to draw up the 'white areas' map on the basis of the information provided by electronic communications network providers. In 2016, ANCOM did not perfom tasks related to these matters.

c. State of transposition of the Broadband Cost Reduction Directive

Following the expiry on 1 January 2016 of the deadline for transposing the Broadband Cost Reduction Directive, the Commission opened infringement proceedings against Romania for failure to notify transposition measures. In July 2016 Romania notified the Commission the measures it had taken to transpose the Directive into national law, specifically through Law No 159/2016 on the regime of physical infrastructure for electronic communications networks and laying down measures to reduce the cost of deploying electronic communications networks[10]. The respective infringement procedure was closed and the Commission will check the compliance of the transposition measures notified by Romania with the Broadband Cost Reduction Directive.

The new powers vested in the NRA could solve the bottleneck caused by the difficult permitting process for physical infrastructure roll-out. ANCOM is tasked with setting maximum tariffs for access to public property, based on a cost-based methodology. These tariff caps shall serve only as a reference limit in the negotiation of access conditions with state or local authorities.

ANCOM shall also publish recommended tariffs for access to various categories of physical infrastructure. These will serve as a reference in the negotiation of contracts to exercise the right of access to infrastructure. ANCOM may also publish procedural guidelines that apply in situations where network providers deny access to their own infrastructure.

The NRA was given responsibility for the new dispute resolution mechanism. The mechanism covers disputes on granting access to the physical infrastructure of network operators, including to infrastructure installed inside buildings. The technical and economic conditions for accessing infrastructure built with the support of local authorities or receiving public financing will have legal effect only after ANCOM has approved them.

[9] Order of the Minister for Communications and Information Society No 945/9.12.2016

[10] *Lege nr. 159/2016 privind regimul infrastructurii fizice a reţelelor de comunicaţii electronice, precum şi pentru stabilirea unor măsuri pentru reducerea costului instalării reţelelor de comunicaţii electronice*.

The new legislation also mandates ANCOM to set up a single information point for the location, route, type and current use of the physical infrastructure owned by network operators.

Finally, ANCOM shall adopt, in collaboration with the Ministry of Communications and Information Society (MCSI) and the Ministry of Regional Development and Public Administration (MDRAP), technical norms on designing and setting up of physical infrastructure and electronic communication networks. The secondary legislation provided for by the new law has not yet been adopted.

3. Regulatory function

As a first in the EU, ANCOM decided at the end of 2015 to deregulate markets 3a (wholesale local access) and 3b (wholesale central access) covered by the 2014 Recommendation. In 2016 ANCOM monitored the impact of its decision. Since the date of the decision, several access contracts have been concluded between operators at wholesale level, on a commercial basis. These commercial agreements made it easier for fixed and mobile operators to provide services in areas where their own networks were not (or less) developed. A mobile network operator gained access to another operator's fixed network to provide fixed broadband, while a national roaming agreement is in place with respect to the mobile network of the first operator. One mobile operator negotiated access to the incumbent's fixed network to provide fixed broadband and fixed telephony, while the incumbent's mobile subscribers have access to the mobile operator's 4G network for data services.

At retail level, the possibility of operators to provide 5-play bundles of services has been enhanced and new offers have emerged since the decision to withdraw regulation on market 3a.

For the calculation of both fixed and mobile termination rates, ANCOM has since 2014 applied a pure BU-LRIC cost model in accordance with the 2009 Recommendation on termination rates.

Despite a pending investigation by the Commission, there are still delays over the analysis of the following markets: market 4 of the 2014 Recommendation (initial due date in 2014, expected notification in the first half of 2017); markets 1 and 2 of the 2014 Recommendation (initial due date in 2012, expected notification in the first quarter of 2017); market 18 of the 2003 Recommendation (initial due date in 2012, expected notification in the third quarter of 2017).

In 2016, more than 230 IP interconnection agreements were submitted to ANCOM, of which 167 were IP transit agreements for voice services. Four operators notified 57 IP international transit agreements. Large operators still require SS7 interconnection for voice termination.

The incumbent's 2014-2018 programme for the migration of fixed networks towards IP interconnection infrastructure is ongoing. IP multimedia subsystem (IMS) platforms are implemented in most of the networks of mobile operators, enabling them to provide VoIP services on a large scale. Some of the small fixed networks were developed on IP infrastructure from the moment of their entry on the market.

ANCOM is analysing the possibility of imposing an IP interconnection obligation as a remedy on the fixed and mobile termination markets.

There are six cross-border service providers with the right to provide public electronic communications networks or publicly available electronic communications services: four of the providers have a secondary establishment in Romania, while two do not.

4. Consumer issues

Portability

Number portability		2015	2016
Fixed	Number of transactions [1]	58,949	40,979
	Transactions as a % of total numbers [1]	1.4%	1.0%
	Maximum wholesale price [2]	2	2
	Maximum time under regulation (number of working days) [2]	1	1
Mobile	Number of transactions [1]	468,803	618,561
	Transactions as a % of total numbers [1]	1.8%	2.4%
	Maximum wholesale price [2]	1	1
	Maximum time under regulation (number of working days) [2]	1	1

[1] Source: Communications Committee. Data as of January to September 2015 and January to September 2016.

[2] Source: Communications Committee. Data as of October 2015 and October 2016

Bundles

With more complex products becoming increasingly present (quadruple and 5-play offers, as well as traffic bundles), consumers' perception of the transparency and clarity of contracts is increasingly important. The 2016 Eurobarometer survey shows that:

- 80% of Romanian consumers consider that they can easily compare bundle offers (up from 64% in previous 2014 survey);
- it is easier to monitor consumption for mobile telephony (78%, equal to the EU average) than for fixed telephony services (61%, EU average of 71%);
- satisfaction with regard to contract information is above the EU average of 84% (89% declared high and medium satisfaction).

ANCOM's regulatory approach was not to interfere in the emergence of bundled offers, as long as they do not adversely affect competition. However, bundled services are monitored on a regular basis. ANCOM considers that offering bundled services on the market has a strong incentivising effect on consumption, which is essential at this stage of the sector's development in Romania.

Transparency

ANCOM has imposed[11] at an early stage specific tools on operators to ensure transparency for users. In addition ANCOM has developed an interactive tariff comparison tool (www.veritel.ro) on which operators are obliged to upload all publicly available offers in a standardised format.

[11] ANCOM Decision No 77/2009 on the obligations to inform end-users incumbent on the providers of publicly available electronic communications services, replaced by Decision no. 158/2015 on the obligations on informing end-users

Consumer complaints

The main sources for end-users' complaints in 2016 were as follows: written contracts – 20 % (non-observance of contract terms, lack of information, contract termination, ammendments), availability and quality of service – 16 %, pricing and billing – 12 %, portability – 8 %, distance contracts – 8 %, technical problems – 6 %, roaming (tariffs, data caps, notifications) – 2 %.

Quality of service

In 2015 ANCOM created Netograf.ro, a web-based application to test 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 was made available to the public from January 2015. No specific development was reported over the usage of this tool in 2016.

Roaming

Before the entry into force of the transitional 'Roam like at home+' (RLAH+) system on 30 April 2016, the average retail Eurotariff price for roaming in the first quarter of 2016 was €0.120 per minute of calls made and €0.030 per minute of calls received and €0.053 per SMS. Alternative tariffs were more expensive at €0.161 for calls made, but cheaper for calls received at €0.011. However, €0.166 per MB for data was well above the EU average of €0.047 per MB.

ANCOM is vested with the necessary powers to enforce the provisions of the Roaming Regulation[12]. According to article 142 point 55 from the GEO no. 111/2011, non-observance of the obligations deriving from the regulations of the European Union in the field of electronic communications and terminal equipment, where the competence of monitoring and verification of the compliance with these obligations belongs to the national regulatory authority constitutes a contravention.[13]

Net neutrality

According to the 16 May 2016 notification sent by the Romanian authorities, ANCOM is vested with powers to enforce Regulation (EU) 2015/2120. Non-observance of Articles 3, 4 and 5 of Regulation (EU) 2015/2120 triggers the application of sanctions pursuant to Article 143 of GEO Government Emergency Ordinance No 111/2011[13].

Universal service

Currently, there is no universal service provider designated in Romania and there are no plans to include broadband in the universal service[14]. To ensure equivalent access for disabled end-

[12] Regulation (EU) No 531/2012 on roaming on public mobile communications networks within the Union

[13] Article 143 of the Government Emergency Ordinance No 111/2011: Contraventions will be sanctioned:
a) with fine ranging from RON 5,000 (€1,100) to RON 60,000, (€13,000) and, if there are repeated breaches, with a fine of up to RON 100,000 (€22,000);
b) […] for persons with a turnover exceeding RON 3,000,000 (€667,000), with fine of up to 2% of turnover, and, if there are repeated breaches, with fine of up to 5% of turnover.

[14] ANCOM is planning to conduct a market study and a report in 2017 to assess the needs of the Romanian citizens on the availability and affordability of electronic communication services.

users, service providers are obliged to ensure that specific tariff packages are available to different categories of users with disabilities, including optimised monthly units of consumption (SMS and data bundle for hearing impaired people; voice and data for visually impaired people).

112 and access for disabled end-users to emergency services

Caller location information requirements are set out in ANCOM Decision 1023/2008, as amended. Caller location accuracy is based on the cell ID provided by the mobile network operator, or on the installation address if calls are placed via fixed networks. The latest amendment was adopted on 18 November 2016, setting out the regulatory framework for more accurate caller location through handset-based caller location. Disabled end-users access emergency services through SMS to the 113 number.

In December 2015 95% of Romanian citizens recognised 112 as a national emergency number and 71% as the European emergency number.

5. Conclusion

Romania is slowly progressing in terms of connectivity. The Romanian market is characterised by infrastructure-based competition, providing high-speed connections at affordable prices for the benefit of end-users in urban areas. However, high quality services are not available in a significant part of rural areas. In areas of market failure, European structural and investment funds remain the main drivers for the deployment of next-generation network (NGN) infrastructure.