ANACOM AUTORIDADE NACIONAL DE COMUNICAÇÕES

WHOLESALE MARKETS FOR VOICE CALL TERMINATION

ON INDIVIDUAL MOBILE NETWORKS

– Definition of product markets and geographic markets, assessment of SMP and imposition, maintenance, amendment or withdrawal of regulatory obligations –

– Final Decision –

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1. Introduction

1.1. Conclusions of the last market review

Under Law No. 5/2004, of 10 February, as it stands (Electronic Communications Law - hereinafter ECL[1]), Autoridade Nacional de Comunicações (ANACOM) is competent to define and review relevant markets[2], to declare companies with significant market power (SMP) and to determine suitable measures in respect of companies with SMP providing electronic communications networks and services[3], in compliance with principles of competition law.

To that extent, ANACOM adopted on 06.08.2015 a decision (hereinafter the 2015 Decision[4]) on the review of wholesale markets for voice call termination on individual mobile networks (hereinafter Market 2[5]) in Portugal.

That document focused on the definition of product markets and geographic markets, the assessment of SMP and the imposition, maintenance, amendment or withdrawal of regulatory obligations on Market 2. It was concluded that (i) no effective competition existed in those markets, given that, in markets under consideration, each operator held a 100% share, monopolizing the offer of call termination on its own mobile network, (ii) there were high entry barriers that prevented other operators, in the short term, from providing competitive services, and (iii) there were no operators exercising sufficient countervailing power to constrain the ability of mobile operators providing the wholesale call termination service to act largely independently of their competitors, customers and consumers.

In addition, it was deemed also that providing mobile communications services and holding the corresponding numbering resources confer on the provider the power to act and to control call termination on those numbers, at the level of termination rates that are applied, regardless of the type of contract concluded with the operator of the supporting network,

[1] Available at: http://www.anacom.pt/render.jsp?contentId=930940#.VQa8KI64Jek.

[2] Article 56 of ECL.

[3] Article 18 of ECL.

[4] Available at https://www.anacom.pt/render.jsp?contentId=1363106.

[5] Market 2 according to Recommendation 2014/710/EU (former Market 7 according to Recommendation 2007/879/EC).

which in fact may even be modified over time or replaced, at a later date, for a provision fully supported on the operator's own network.

ANACOM concluded also that the need for regulatory intervention over the past few years, intended to impose reductions of termination rates, confirmed the conclusion that no effective competition existed in wholesale markets for call termination on individual mobile networks.

As such, the following active providers on the market were identified at the time as having SMP on the respective networks, including providers operating mobile virtual network operators (MVNOs):

- CTT – Correios de Portugal, S.A. (**CTT**)
- Lycamobile Portugal, Lda[6] (**Lycamobile**)
- MEO – Serviço de Comunicações e Multimédia, S.A. (**MEO**)
- Mundio Mobile (Portugal) Limited (**Mundio**)
- NOS Comunicações, S.A. (**NOS**)
- Vodafone Portugal – Comunicações Pessoais, S. A. (**Vodafone**)

According to the review carried out, ANACOM considered that mobile providers with SMP on wholesale markets for voice call termination on individual mobile networks are subject to the following obligations described in Table 1:

Table 1 - Regulatory obligations included in the 2015 market review

Obligation	Description
To meet reasonable requests for access (article 72 of ECL)	This obligation seeks to ensure that situations of refusal to negotiate and/or grant access without an objective justification do not occur in these markets. This requirement ensures, specifically, that operators are able to complete calls that are originated on their networks and

[6] It was referred in the 2015 Decision that, in this case, it would be Lycamobile Portugal, Lda. or Lycamobile Limited, which was qualified for the provision of the mobile telephone service as from March 2015, in case the latter replaced the former in the provision of this service, namely where the transfer of associated numbering resources took place.

Obligation	Description
	terminated on networks of other mobile network operators (especially operators with SMP).
Non-discrimination in the provision of access and interconnection, and in the respective provision of information (article 70 of ECL)	This obligation aims to ensure that operators who benefit from the provision of access and interconnection do not find themselves in a situation of unfair disadvantage, that is, that these operators' ability to compete is not affected by any discriminatory behaviour on the part of mobile network operators. This obligation should be interpreted in the sense that rates of call termination on mobile networks should be identical irrespective of purchasers of the service and regardless of whether the origin of the call is the fixed network, another mobile network or an international call, taking into account that the service provided is the same. Calls delivered to national providers from countries outside the European Economic Area (EEA) are excluded from this obligation.
Transparency in the publication of information (article 67 of ECL)	All operators with SMP in these relevant markets are required to submit to ANACOM, within 30 days from the notification of the decision on these markets, a copy of all interconnection agreements in force, and following that deadline, agreements that are concluded or amended must be notified to ANACOM within 10 working days. In the case of amendments to agreements in force, it is deemed that those that involve "formal additions" to existing contracts must be notified. The prior publication of rates at websites of services of voice call termination on the respective mobile networks is also required. The deadline for publication may be defined by ANACOM, should this become necessary. Calls delivered to national providers made in countries outside the European Economic Area (EEA) are not subject to the obligation for prior publication of rates of termination services for this type of calls.
Price control (article 74 of ECL)	This obligation implies the cost-orientation of prices, regardless of whether calls are originated on fixed or mobile national networks, or on providers operating in the EEA.

Source: ANACOM

ANACOM took the view, compared to the review carried out in 2010, that it would not be justifiable and would represent a disproportionate burden to continue imposing the accounting separation and cost accounting obligation, reason for which this obligation was removed.

On the same date, ANACOM took another decision, on the fixed termination cost model applied to wholesale markets for voice call termination on individual mobile networks[7], which substantiated the price ceiling of the wholesale mobile termination service set out in

[7] Available at https://www.anacom.pt/render.jsp?categoryId=383753

the 2015 Decision, as well as values applicable as from July 2016 and July 2017, updated by current and expected inflation data.

It was deemed, in the context of the review, namely the fact that maintaining high termination rates was a competition-distorting factor, both between fixed and mobile markets and between operators of a different size on mobile markets, that it was necessary and appropriate to determine a substantial reduction of mobile termination rates.

Although mobile termination rates in force at that time already reflected the results of the "pure" LRIC cost model implemented in 2012[8], it was deemed fundamental to review that model and to update it, so as to guarantee its adequacy, in particular in order to reflect technological evolutions and market developments. In the context of that review, it was stressed that the setting of a termination rate at the level that corresponded to the incremental cost of the service provided by an efficient operator would strengthen competition conditions, enabling all providers to deal with tariff-mediated network effects, and to launch innovative products and new tariff structures in a sustained way. ANACOM took the view also that the setting of "pure" LRIC rates would also contribute to rebalance competition conditions between downstream fixed and mobile markets of wholesale termination markets.

In this scope, the 2015 Decision set out the price ceiling for voice call termination on mobile networks to be applied by operators notified with SMP, determining it would be 0.83 Euro cent per minute, regardless of the origin of the call, which represented a 35% reduction of the rate charged by operators since the end of 2012, of 1.27 Euro cent per minute.

Rates in force at the time, of 1.27 Euro cents per minute, turned Portugal into the country with the highest mobile termination rates of all of the 20 European countries of the European Union that at the time had termination rates oriented towards costs of an efficient operator

[8] In compliance with Recommendation 2009/396/EC, of 07.05.2009, on the regulatory treatment of termination rates in the European Union, which supports the adoption of symmetrical termination rates, based on costs of an efficient operator and on the use of a bottom-up model using the "pure" long-run incremental costs cost methodology (BU-LRIC), by 31 December 2012. Available at http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:124:0067:0074:EN:PDF.

("pure" LRIC rates). With the reduction to 0.83 cents, determined by the 2015 Decision, Portugal became the 8th country with the lowest rates.

Price ceilings of the wholesale mobile termination service determined in the 2015 Decision were subsequently updated on 12.04.2016[9] and 03.03.2017[10], having ANACOM determined that the price ceiling for voice call termination on mobile networks to be applied by mobile operators notified with SMP was respectively 0.81 Euro cents per minute, as from July 2016, and 0.75 Euro cents per minute, as from July 2017, on the basis of per-second billing throughout the call.

1.2. Developments in the electronic communications market

Further to the publication in 2015 of the last market review, the following relevant events occurred in the electronic communications market:

- On 12 October 2015, Autoridade da Concorrência (AdC) was notified about the merger operation that consisted in the acquisition by Cabolink S.à.r.L. (held by the APAX France investment fund) of the exclusive control of Cabovisão – Televisão por Cabo, S.A. (then Cabovisão, now NOWO Communications, S.A. – NOWO[11]), Winreason, S.A and Oni SGPS, S.A., through the purchase of the total shareholding of Cabovisão[12], having that Authority approved a decision not opposing the referred operation on 27.11.2015[13];

- On 20 January 2016, the conclusion of the sale of OniTelecom – Infocomunicações, S.A. (ONI) and the then Cabovisão by the Apax France investment fund was announced[14];

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[9] Available at https://www.anacom.pt/render.jsp?contentId=1383503.

[10] Available at https://www.anacom.pt/render.jsp?contentId=1406905.

[11] Cabovisão was renamed "NOWO Communications, S.A." on 18.10.2016.

[12] Available at: http://www.concorrencia.pt/vPT/Controlo_de_concentracoes/Decisoes/Paginas/pesquisa.aspx?pNumb=46&yearNot=2015&pag=1&doc=True&est=1.

[13] Available at: http://www.concorrencia.pt/vPT/Noticias_Eventos/Noticias/Paginas/CCENT_2015_46_Dec.aspx?lst=1&pagenr=3&Cat=2015&dat=A+partir+de&txt=Palavra-chave.

[14] Available at http://altice.net/wp-content/uploads/2016/01/20160120-ALT-Closing-Cabo-Oni.pdf.

- On 18 February 2016, ANACOM approved the renewal, for a 15-year period, of rights of use for frequencies (RUF) allocated in the 2100 MHz[15] band to NOS, MEO and Vodafone, for terrestrial electronic communications services, this renewal taking effect as from mid-2018. In this scope, ANACOM approved a list of 588 parishes as tend to lack mobile broadband (MBB) coverage, which operators are required to cover (196 parishes each), operators having been granted a one-year period of time from that renewal to ensure that all parishes have mobile broadband coverage;

- On 3 March 2016, ANACOM approved a final decision on the determination of reference speeds associated with coverage obligations in the 800 MHz frequency band applicable to MEO, NOS and Vodafone[16], which became an integral part of titles allocated to those companies;

- On 10 March 2016, ANACOM notified MEO, NOS and Vodafone as to the end of restrictions applicable to the 800 MHz frequency band[17], companies being required to comply with coverage obligations in that band within 6 months to one year from the date of notification, respectively for 50% to 100% of parishes defined in the decision of 22 August 2013[18] with the reference speed defined in the scope of the above-mentioned decision of 3 March 2016.

- In May 2016, ONI and the then Cabovisão launched the provision of mobile services as MVNO, supported on MEO's network;

- In November 2016, MEO carried out what it considered to be the first 4.5G (or 4G+) network demonstration in Portugal[19], achieving "*speeds of 1.7 Gbps, more than 5 times the current speed of the mobile network and 2 times higher than Premium fibre optic speed*";

[15] Available at https://www.anacom.pt/render.jsp?contentId=1379331.
[16] Available at https://www.anacom.pt/render.jsp?contentId=1380320.
[17] Available at https://www.anacom.pt/render.jsp?contentId=1380834.
[18] Available at https://www.anacom.pt/render.jsp?contentId=1171334.
[19] Available at https://www.telecom.pt/pt-pt/media/noticias/Paginas/2016/novembro/pt-e-huawei.aspx.

- On 21 December 2016, following a national public consultation and the prior hearing of stakeholders, and after the notification of the respective draft decision to the European Commission (EC), ANACOM approved a final decision[20] on the review of wholesale markets for call termination on the public telephone network at a fixed location, which among other aspects determined a reduction by 42% of wholesale fixed termination rates - a price ceiling of 0.0644 cents per minute having been established. As from October 2017, the price ceiling was set at 0.0635 cents;

- On 23 March 2017, Mundio Mobile (Portugal) Limited was renamed Vectone Mobile (Portugal) Limited;

- In May 2017, Altice announced that it would adopt its name as trademark in all operations, the transition process of all trademarks being expected to be concluded by the 2nd quarter of 2018[21];

- In July 2017, NOS announced that it would be the first operator in Portugal to test the 4.5G - IoT technology over its network infrastructure, in the scope of a project between NOS, EDP Distribuição, Huawei, Janz CE and U-BLOX for the development of the Smart Meter NB-IoT[22];

- In October 2017, Vodafone announced that it had carried out the first 5G tests in Portugal, having reached speeds by 20 Gbps on the basis of a wireless connection[23].

[20] Available at https://www.anacom.pt/render.jsp?contentId=1401579.

[21] Available at https://www.telecom.pt/pt-pt/media/comunicados/Paginas/2017/maio/altice-anuncia-nova-estrategia-global-um-grupo-uma-marca.aspx.

[22] Available at https://www.nos.pt/institucional/PT/media/Documents/2017.07.10%20%20Primeiro%20Smart%20Meter%20com%20ND_IoT_PR.pdf.

[23] Available at https://press.vodafone.pt/2017/10/04/vodafone-realiza-primeiros-testes-de-5g-em-portugal-e-atinge-velocidades-de-20gbps/.

- In November 2017, Altice announced the evolution of its networks to 4G+, having demonstrated, in the scope of the Web Summit 2017, the 4G+ potential by reaching speeds up to 1 Gps[24].

Without prejudice to the events indicated, the impact of some of them on specific mobile network termination markets is low or virtually non-existent.

1.3. EC Recommendation on relevant markets

On 9 October 2014, the EC approved a new Recommendation 2014/710/UE, on relevant product and service markets within the electronic communications sector susceptible to *ex ante* regulation (hereinafter Recommendation on relevant markets), 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[25].

As a result of market developments in the past few years, this Recommendation replaces and updates EC Recommendation 2007/879/EC, of 17 December 2007, and instead of the former seven markets[26], only four[27] relevant markets susceptible to *ex ante* regulation have now been included.

Like previous versions of the Recommendation on relevant markets, the reviewed version is accompanied by an "Explanatory Note", in which EC justifies the definition of new markets[28].

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[24] Available at https://www.telecom.pt/pt-pt/media/comunicados/Paginas/2017/novembro/4g-da-altice-disponivel-para-mais-de-50-da-populacao-portuguesa-ate-final-de-2017.aspx.

[25] Available at http://eur-lex.europa.eu/legal-content/PT/TXT/PDF/?uri=CELEX:32014H0710&from=PT.

[26] Strictly speaking, more than seven markets existed, bearing in mind that, in the case of fixed and mobile termination, the market definition is restricted to each network, and as such there are several termination markets.

[27] As follows:

- Market 1: Wholesale call termination on individual public telephone networks provided at a fixed location;
- Market 2 : Wholesale voice call termination on individual mobile networks;
- Market 3: a) Wholesale local access provided at a fixed location;
  b) Wholesale central access provided at a fixed location for mass-market products; and
- Market 4: Wholesale high-quality access provided at a fixed location.

[28] Explanatory Note available at http://ec.europa.eu/information_society/newsroom/cf/dae/document.cfm?action=display&doc_id=7056

Further to that review, the market under consideration (market 7 of the former Recommendation on relevant markets) maintains almost entirely the former designation and the same functional description: Market 2: Wholesale voice call termination on individual mobile networks.

1.4. The market review process

ECL approved the legal system governing electronic communications networks and services and associated resources and services, setting out the competences of the National Regulatory Authority (NRA) in this field.

Under ECL, it is incumbent on the NRA - ANACOM - to define and review relevant markets, identify companies with significant market power and determine appropriate measures to be imposed on companies with SMP providing electronic communications networks and services (article 18 of Law No. 5/2004).

This process is carried out according to the following stages (articles 55 to 61 of ECL)[29]:

- **Definition of relevant markets** (article 58 of ECL)

  It is incumbent on the NRA to identify relevant product and service markets of the electronic communications sector, including relevant geographic markets, in line with principles of competition law.

  In the definition of relevant markets, and on the basis of national circumstances, the NRA must have regard to the Recommendation on relevant markets and EC Guidelines[30] on market review and assessment of SMP under the Community

[29] Cf. Framework Directive, articles 7 and 14 to 16.

[30] Available at http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2002:165:0006:0031:PT:PDF .

regulatory framework for electronic communications networks and services (hereinafter referred to as “Guidelines”).

- **Review of relevant markets** (article 59 of ECL)

  It is incumbent on the NRA to review relevant markets defined under the previous point, taking the Guidelines into account.

  The market review procedure aims to examine whether effective competition exists, and this will not be the case where it is possible to identify companies with SMP[31].

  A company is considered to have SMP, individually[32], or jointly with others, where it enjoys a position equivalent to dominance, i.e. a position of economic strength, which enables it to act largely independently of its competitors, customers and consumers.

- **Imposition, maintenance, amendment or withdrawal of regulatory obligations** (article 66 of ECL)

  Where ANACOM reaches the conclusion that a market is effectively competitive, it must refrain from imposing any specific regulatory obligation, removing such obligations where they exist.

  Where ANACOM determines that the relevant market is not effectively competitive, it must impose appropriate and specific regulatory obligations on companies with SMP

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[31] Also according to the “Guidelines” (§ 24), “*Under the regulatory framework, markets will be defined and SMP will be assessed using the same methodologies as under competition law. (...) and the assessment of effective competition by NRAs should be consistent with competition case-law and practice. To ensure such consistency, these guidelines are based on (1) existing case-law of the Court of First Instance and the European Court of Justice concerning market definition and the notion of dominant position within the meaning of Article 82 of the EC Treaty and Article 2 of the Merger Control Regulation*”.

[32] It is noted that, according to ECJ Judgement of 12 July 1984 *Hydrotherm*, the term ‘company’ must be “*understood as designating an economic unit for the purposes of the subject-matter of the agreement in question even if in law that economic unit consists of several persons, natural or legal*”.

Under article 3, paragraphs 1 and 2, of Law No. 19/2012, of 8 May (which approves the Competition Act), “*1 – The term company, for the purposes of this law, shall be deemed to be any entity that has an economic activity comprising the supply of goods or services in a specific market, irrespective of its legal status or means of financing. 2 – A group of companies is deemed to be a single company, even if companies themselves are legally separate entities, where such companies make up an economic unit or maintain interdependence ties deriving specifically from the following: a) The company so defined has a majority of the share capital; b) It has more than half of the voting rights conferred by the share capital; c) It has the power to appoint more than half of the members of the board of directors or the supervisory board; d) It has the necessary powers to manage the businesses of the group and of each of its companies*.”

in that market, maintaining or amending such obligations where such obligations already exist.

Obligations imposed:

- must suit the identified problem and be proportionate and justified in the light of regulatory objectives laid down in article 5 of ECL;
- must be objectively justified regards networks, services or facilities concerned;
- may not give rise to undue discrimination with respect to any entity;
- must be transparent in relation to their intended purposes.

This market review was subject to the general consultation procedure under paragraph 1 of article 8 of ECL, as well as to the stakeholder prior hearing procedure, under articles 121 and 122 of the Administrative Procedure Code, in both cases for a period of 30 days. AdC was also requested to provide an opinion under article 61 of ECL.

On 02.03.2018, AdC submitted its opinion, informing that the Authority did not oppose to the definition of relevant wholesale product and geographic markets, nor to the assessment of SMP, having noted that the definition adopted by ANACOM does not restrict the definition of relevant markets to be adopted by AdC. As regards imposed obligations, AdC recalls that in its opinion to ANACOM's Decision of 06.08.2015 on these markets, it considered appropriate to use a "pure" LRIC cost model in the scope of the determination of termination price ceilings.

In the scope of the consultation and stakeholder prior hearing procedures, which took place between 22.01.2018 and 05.03.2018, ANACOM received responses from four bodies, including a consumer association and 3 providers, as well as a contribution from a citizen which included a request for clarification.

Having received comments been analysed, a report on ANACOM's DD was prepared (as well as a separate report on options that integrate the model in response to contributions received in the scope of the DD on the specification of the price control obligation), which comprises a summary of contributions received and the Regulatory Authority's views thereon. The report, which already integrated the draft decision notified to EC, is also an integral part of this final decision.

By determination of 03.05.2018, ANACOM approved the referred public consultation and prior hearing report, as well as the draft final decision on wholesale markets for voice call termination on individual mobile networks (and also a draft decision on the specification of price control obligation and the respective report).

On the same date, approval was given also to the notification of the referred draft final decisions to EC, BEREC and NRA of other Member States, for the purpose of paragraph 1 of article 57 of ECL.

On 07.06.2018, a communication was received from EC (letter C(2018) 3740 final) presented under article 7, paragraph 3, of Directive 2002/21/EC, regarding "Wholesale markets of voice call termination on individual mobile networks in Portugal" (file PT/2018/2076). After examining the notification and the additional information provided by ANACOM, in which the Regulatory Authority identified the existence of an error in the beta parameter used to calculate the weighted average cost of capital (WACC), EC, among other comments on the calculation of WACC, requested ANACOM to clearly indicate in its final measure the new WACC value and to update the applicable termination price ceiling.

It follows from the correction of the WACC value that the termination price ceiling amounts to 0.42 Euro cents per minute.

According to the methodology adopted in the Recommendation on relevant markets[33], the starting point for the definition and identification of relevant wholesale markets is the characterization of related retail markets, their geographical size and competitive pressures to which they are subject, on both the demand- and supply-side, in a forward-looking manner. As such, this first stage aims to analyse whether markets concerned present competition failures that could justify the maintenance or imposition of regulatory obligations in related wholesale markets.

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[33] Cf. Explanatory Note accompanying the Recommendation on relevant markets, Section 2.1., available at http://ec.europa.eu/information_society/newsroom/cf/dae/document.cfm?action=display&doc_id=7056.

Subsequently, related wholesale markets are defined having regard to the same dimensions - product market(s) and geographic market(s) - and an assessment of any SMP in these markets is performed. Finally, an analysis is made as regards regulatory obligations to be imposed on companies with SMP, or, in the absence of SMP, how obligations previously imposed should be withdrawn.

This document thus sets out ANACOM's new decision on the definition of product markets and geographic markets, the assessment of SMP and the imposition, maintenance, amendment or withdrawal of regulatory obligations on wholesale markets for voice call termination on individual mobile networks.

It must be referred that utmost account was taken of positions adopted, not only by EC, but also by the Body of European Regulators for Electronic Communications (BEREC).

More specifically, principles defined in ERG *Guidance on the application of the three criteria test* are taken into account. Principles established in the scope of ERG common position on the imposition of obligations in electronic communications markets are also taken into account in the review and definition of obligations to be imposed (or withdrawn).

As regards the imposition of *ex ante* regulatory obligations, it must be highlighted that EC Recommendation on relevant markets provides that regulatory obligations at retail level should only be imposed where NRA consider that measures applicable at the level of wholesale markets do not guarantee an effective competition and compliance with public interest objectives.

The main purpose of this review is thus to identify whether effective competition exists in wholesale markets for call termination on individual mobile networks. In fact, it follows from EC Explanatory Note that the market definition exercise if not an end in itself, but a means to attain an end - "*The objective* (of market definition) *is to identify whether competitors are capable of constraining each other's behaviour and preventing the others from behaving independently of consumers within the defined market*". Market definition is thus a necessary means to assess whether users of a given product or service are protected by effective competition or, on the contrary, whether the imposition of *ex ante* regulation is required to guarantee it.

2. Mobile electronic communications services

The mobile telephone service (MTS) is a public electronic communications service, where the access network is made up of radio means and where terminal equipment is mobile. The provision of this service allows calls to be made and received through a number or numbers that integrate the National Numbering Plan (NNP).

The service is provided by bodies qualified for the purpose, and the use of frequencies required for the respective operation depends on the allocation of individual rights of use, pursuant to paragraph 3 of article 19 of ECL. Bodies that do not hold rights of use for frequencies, the so-called MVNO[34], are also able to provide the mobile telephone service, supporting their activity on the radio access network of qualified mobile network operators.

In general terms, it is considered that the mobile telephone service in Portugal may include the retail provision of full duplex voice services, video-call services, short message services (SMS), data services, including multimedia messaging services (MMS) and broadband Internet access services, as well as a range of different features.

Services concerned are provided to a wide range of business and non-business customers, by all active mobile network operators over the respective networks, using GSM[35] and UMTS[36] technologies, and more recently LTE[37] or 4G, the implementation of which started in Portugal in 2012, the provision of voice services over LTE (VoLTE) having been made

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[34] There is no legal definition for MVNO. However, on 09.02.2007, ANACOM approved the MVNO activity framework (available at https://www.anacom.pt/render.jsp?contentId=454206), which states as follows: "*There are many economic operations which can be included under the designation MVNO, which however have as a common denominator the fact that these operators do not use rights of use for frequencies and are consequently not provided with their own radio access network infrastructures, being thus required to support themselves on radio means supplied by network operators who own the respective rights of use.*"

More recently, in the scope of the Multiband Auction, and for the purpose of the respective Regulation, it was deemed that an MVNO is "*a body that in its virtual mobile operation does not use rights of use for frequencies and consequently self-owned infrastructures associated to the radio access network, being supported on radio means provided by network operators who hold the respective rights of use. Different types of operations may be deemed to be MVNO operations, according to the degree of use of self-owned infrastructures and systems*".

[35] GSM – Global System for Mobile Communications.

[36] UMTS – Universal Mobile Telecommunications System.

[37] LTE – Long Term Evolution.

public in 2015. Today, newer 4G versions are available, such as the case of 4G+, and in October 2017 one of the operators carried out the first demonstration in Portugal of the 5G mobile network.

MVNOs provide some of the referred services, focusing however their activity on low-speed voice and data services, aimed in some cases at specific market segments.

Nowadays, there are in Portugal MVNO which could be considered to be "light" MVNO, while others could be deemed to be "full" MVNO[38]. Without prejudice to their characteristics, all MVNO are able to negotiate interconnection and to obtain access to or interconnection with other companies providing electronic communications networks and services, under the conditions and in the terms set out in ECL[39].

Several bodies operate at present on the national electronic communications market, the three larger operators operating on most markets regulated by ANACOM being MEO, Grupo NOS and Vodafone. In addition to these bodies, there are also a few dozens of smaller bodies that operate in geographic segments or with specific customers, and smaller providers that provide services to the general public.

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[38] In its position of 09.02.2007, ANACOM refers as follows: "*A full MVNO holds, in addition to the particulars that characterize a light MVNO, several transmission system and network infrastructure elements, including switches. It may also issue its own SIM cards. A full MVNO fails only to hold the right of use for frequencies, and, as such, it does not own radio access infrastructure elements (such as base stations or network controllers), in contrast to a MNO*".

[39] In its position on MVNO, the following is stated as far as interconnection is concerned:

> "*30. Companies providing publicly available electronic communications networks and services are entitled[25] to negotiate interconnection with and obtain access to or interconnection with other providers of electronic communications networks and services, under the conditions of and in accordance with ECL.*
>
> *31. On the other hand, the same law determines[26] that the terms and conditions of the interconnection offer shall be consistent with obligations imposed by ICP-ANACOM on this matter and that network operators have a right and, when requested by other companies, an obligation, to negotiate interconnection with each other for the purpose of the provision of publicly available electronic communications services[27].*
>
> *32. In this context, MVNOs (both light and full) may invoke the obligation to negotiate interconnection, and other mobile and fixed operators must ensure service interoperability under the law.*
>
> [25] *Pursuant to point a) of article 22 of ECL.*
>
> [26] *Article 64, paragraphs 1 and 2.*
>
> [27] *"Interconnection" is defined by law as the physical and logical linking of public communications networks used by the same company or different companies in order to allow the users of a company to communicate with users of the same or another company, or to access services provided by another company. Services may be provided by the parties involved or by other parties who have access to the network. Interconnection is a specific type of access implemented between public network operators.*"

The land mobile service is currently provided in Portugal at retail level by three mobile network operators, namely MEO, NOS and Vodafone. There are also five mobile virtual operators, CTT, supported on MEO's mobile network, Vectone, supported on NOS' mobile network, Lycamobile Portugal, supported on Vodafone's mobile network, and ONI and NOWO, both supported on MEO's network[40].

It is noted also that there are resellers of mobile telephone services and/or short data (SMS) traffic operating on the retail market.

2.1. Characteristics of the mobile market

Providers of electronic communications services provide, in general, a very diversified range of services and offers that may be marketed on their own (single play or stand-alone offers) or in a bundle (multiple play or multi-play offers), in their various modalities according to the number of services integrated therein[41], that are often adapted and targeted at specific consumption profiles of end-users.

By the end of 2016, there were 715 commercial offers with mobile telephone service aimed at the residential segment[42], 462 more than those registered in 2015. The MTS was included in 657 bundled offers by the end of 2016, concerning for the most part quintuple play offers (466), which in addition include the fixed telephone service (FTS), fixed broadband service (FBB), mobile broadband service (MBB) and pay TV service (PTV), the rate of stand-alone offers not exceeding 8%.

The increase in the number of bundled offers was mainly due to the introduction of new offers with different binding periods following to the entry into force of Law No. 15/2016[43], of 17 June that, among other aspects, maintained the maximum 24-month binding period,

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[40] In addition, there are also three operators registered as providers of the virtual mobile telephone service who are not operating at the moment: G9TELECOM, S.A., Media Capital Digital, S.A. and Lycamobile Limited.

[41] Double play, triple play, quadruple play or quintuple play, or 2P, 3P, 4P and 5P.

[42] Tariffs which allow the user to combine services, rates and minimum top-up amounts were not taken into account, given the wide range of possible combinations, tariffs associated to other bodies (for example, Optimus' *Continente mobile*) and tariffs combined with the Blackberry option. Offers with two or more SIM cards included. Internet or voice additives excluded. Bundled promotional traffic offers and integrated offers that duplicate the mobile offer, where the differentiating factor is the technology used in the fixed element of the package, included.

[43] *Vide* https://www.anacom.pt/render.jsp?contentId=1388733.

ordering companies, however, to make available alternative offers with 12- and 6-month binding periods, as well as without binding periods of any kind.

As regards tariffs made available by mobile network operators, they differ according to the payment/top-up options available, as well as the targeted users (for example, there are several offers aimed at the young segment).

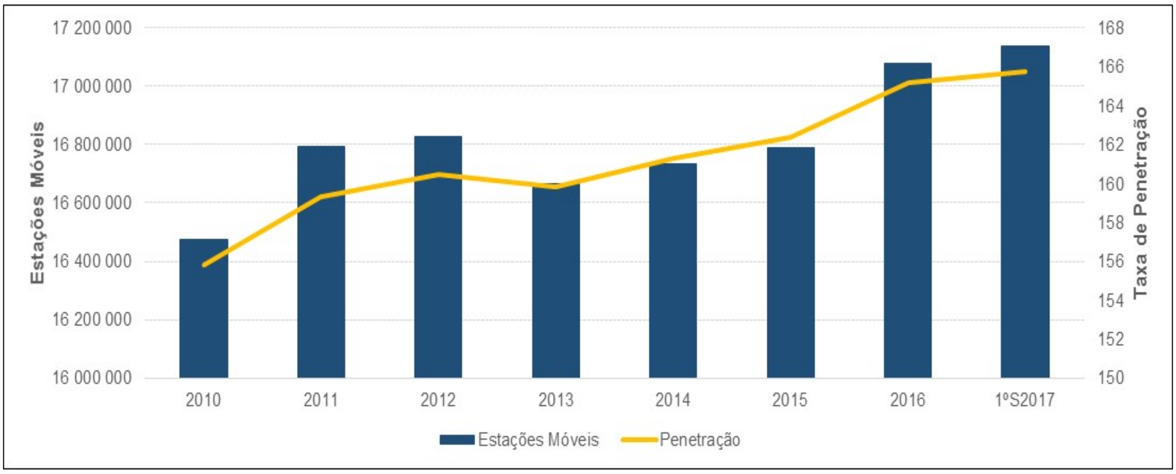
There are pre-paid offers, which require an advance payment (through a top-up system made available by the provider) for the provision of services, which may be associated to the payment of a monthly charge or of a mandatory monthly minimum top-up; post-paid offers, where consumptions are paid after they have been made; there are also hybrid tariff plans which may combine several payment methods (for example, a monthly charge and the possibility of additional top-ups).

The national market has traditionally been characterized by the large incidence of pre-paid tariffs, which were introduced in a pioneering way by national operators, and are deemed to be one of the main reasons for the high penetration rate of MTS in Portugal. In fact, this payment method made the take-up of mobile services easier, as it allows customers to top up according to their own needs, and thus to control their expenses more efficiently.

The national market has always been very dynamic and creative in the launch of commercial and innovative solutions, which have contributed to the development and growth of the electronic communications sector, as well as to maintain the high penetration level of mobile services (active mobile stations[44]), which reached, by the end of the 1st half of 2017, 166 per 100 population.

[44] Active mobile stations include all those that are qualified to use services, whether they have been used or not.

Chart 1 - Evolution of the amount of active mobile stations and of the land mobile service penetration rate



Source: ANACOM

In the past, the mobile retail market in Portugal was characterized by the existence of tariffs with a large discrimination between on-net and off-net tariffs, both for voice calls and for SMS. This factor, which on its own is not necessarily to the detriment of the market, associated with the simultaneous existence of high wholesale termination rates, created the so-called tariff-mediated network effect, thus generating a competition problem in the national market, prejudicial to smaller operators and end-users[45].

Notwithstanding, competition dynamics focused on the provision of new services and products. In this context, it is recalled that, in 2005, low cost offers were launched by the three mobile network operators[46], targeted at voice calls and SMS, that included more affordable tariffs, and were more simple tariff systems, as they introduced a single tariff for voice calls to all networks and for SMS, or included free SMS packages to encourage the use of this service.

These new offers contributed to the increase of traffic, especially of the amount of text messages, which increased by 168% between 2005 and 2006.

[45] This subject is further developed in Chapter 6 of this document.

[46] At the time named TMN (now MEO), Optimus (now NOS) and Vodafone.

Some years later (2007-2008), a set of products was launched, which maintained the tariff differentiation between prices of voice calls and SMS between customers of the same network (on-net) and customers of other operators, that is, communications terminated on networks other than the one of the originating operator (off-net), but broke down also calls to the same network and with the same tariff, known as "on-net sub-group" offers (or as tribal tariffs). These offers concern free calls to customers that use the same type of tariffs, but charge an amount for communications to customers of the same network that use other tariff plans.

Later, in 2011, and in the light of the relative loss of competitiveness of on-net sub-group tariffs, due to the price increase of the latter, operators made available a new range of pre-paid tariffs, which offered free on-net calls with no differentiation within the same network. Compared to on-net sub-group tariffs, this represented an expansion of the proportion of on-net range, where calls are free, which combined with the high level of on-net/off-net differentiation, contributed to enhancing the network effects which have characterized the national market.

However, the fact that these tariffs presented an innovative price structure for voice calls, as well as their integration in bundles of mobile phone internet traffic, represented an important evolution in the segment of pre-paid tariffs.

As from 2013, now with mobile network termination rates set at the level of the long-run incremental cost, the first all-net offers were launched, at first with tariffs aimed at young people (up to the age of 25[47]), who value mobile data traffic more than traditional voice and SMS traffic. These offers combine mobile data traffic offer with the access to a set of apps that enable communication through text messages, voice and image.

In addition, new bundled offers became available, which included, in addition to mobile services, various other services such as FTS, cable or fibre television distribution service, fixed broadband Internet service, mobile broadband Internet service, and even the combination with other sector services, such as the inclusion of cinema tickets[48].

[47] WTF; Moche and Yorn X.

[48] An operator launched in 2014 a package which added cinema tickets to the basic electronic communications service offer, which includes Television, Internet, Fixed Telephone Service and Mobile Telephone Service.

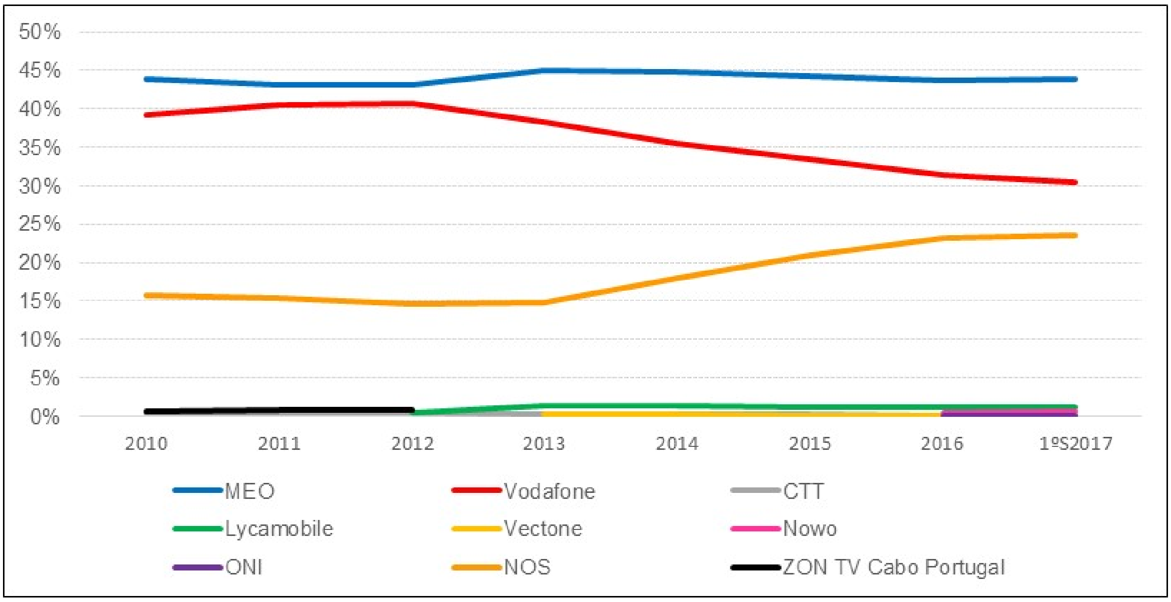
By the end of 2016, the growing trend of the bundled services penetration rate was maintained, with single play MTS offers representing merely 8% of total offers. Around 97% of mobile tariffs included traffic minutes, SMS packages, video minutes, mobile data traffic, or a combination of the latter, in the subscription amount, a significant part of tariffs with traffic included (74%) being part of fixed service packages. According to Marktest's Telecommunications Barometer (TCB), in June 2017, around 40.4% of MTS residential customers subscribed these services in the scope of a bundled offer that integrated services provided at a fixed location[49].

By the end of the 2nd quarter of 2017, there were around 13 million active mobile stations effectively used, associated to post-paid (29.9%), pre-paid (44.1%) and also combined (26%) tariff plans.

As from 2013, NOS' positive evolution stands out (between 2013 and 2014 the company increased by 57% the amount of active and effectively used mobile stations associated to post-paid, pre-paid and combined tariff plans), while the amount of Vodafone's mobile stations decreased (less 22% between 2013 and 2014) and the amount of MEO's mobile stations stabilized. This evolution enabled NOS to bring its rate of active mobile stations effectively used significantly closer to that of the two largest operators.

[49] Cf. MARKTEST – Telecommunications Barometer Report, June 2017 [Basis: households with bundled services (Total)]. The Telecommunications Barometer is a regular study developed by Marktest for the telecommunications sector.

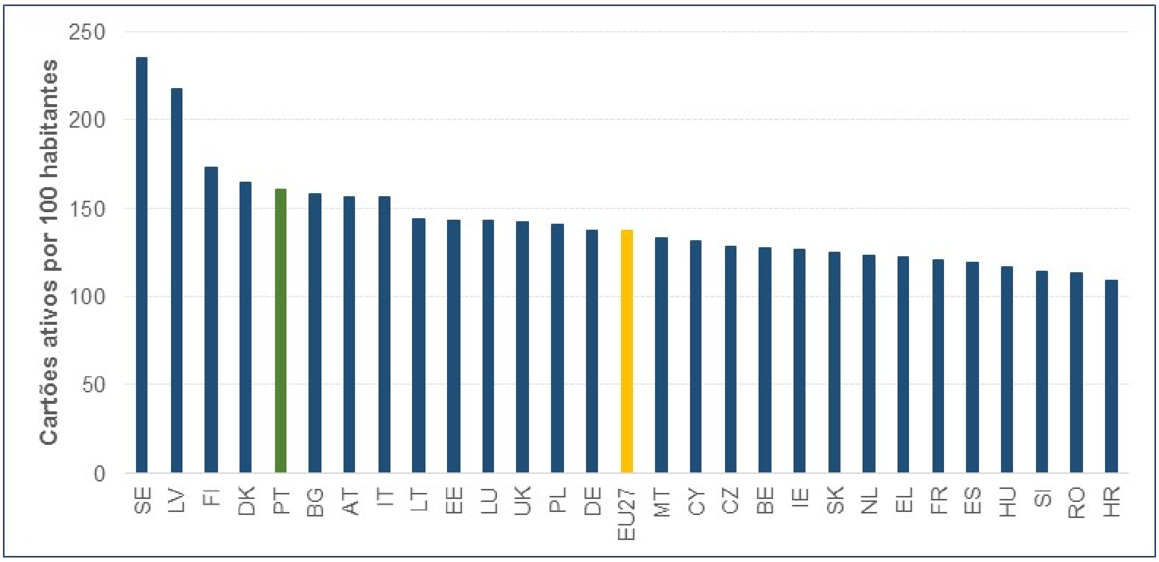
Chart 2 - Evolution of market shares (active mobile stations effectively used)



Source: ANACOM

At European Union level, it may be seen that Portugal is considerably above the EU average, being in 2015 the 5th EC country with the highest amount of active voice and data SIM cards.

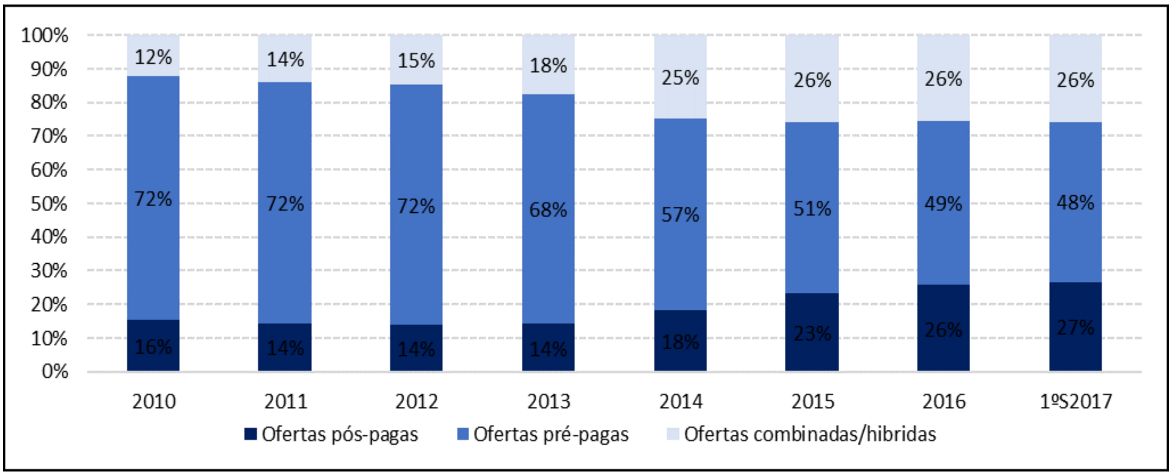
Chart 3 - Active voice and data SIM cards, per Member State, in 2015



Source: EC, Digital Scoreboard.

With the dissemination of bundled offers, and notwithstanding the increase in the amount of mobile stations, the proportion of pre-paid subscribers gradually decreased, reaching in the 2nd half of 2017 the lowest level ever registered (48%). Post-paid plans showed, on their turn, a growing trend and values associated with combined tariffs were maintained (Chart 4). The reduction also took place in absolute terms and although this was especially clear in 2014 (less 16% than in 2013), the decrease in the amount of mobile stations engaged in pre-paid plans remained in subsequent periods.

Chart 4 - Evolution of offers per type of user in Portugal



Source: ANACOM

This evolution essentially follows from the increase of the penetration of multiple play tariffs that integrate the mobile telephone service, as referred earlier.

The trend for the increase of the weight of offers with no tariff differentiation between networks was also maintained, representing by the end of 2016 around 94% of total voice call tariffs, the weight of these tariffs having increased by around 45% in the last four years.

The growth of tariffs with specific monthly charges for international networks (2% of total offers) also stands out in 2016, due to the entry into the market of an MVNO especially dedicated to this segment.

The increase of mobile phone internet offers (over 200% between 2015 and 2016) must also be pointed out, representing 96% of all mobile broadband (MBB) offers.

By the end of the 2nd quarter of 2017, the number of active users that actually used 3G and 4G services (such as video telephony, broadband data transfer, mobile TV) reached 6.8 million (an increase by 17.7% compared to the same period in 2016).

This increase in the number of service users results from the increase of Internet access via the mobile phone, especially through the association of bundled offers, as well as the mass use of smartphones, which according to TCB reached a penetration rate by 72.7% in June 2017[50].

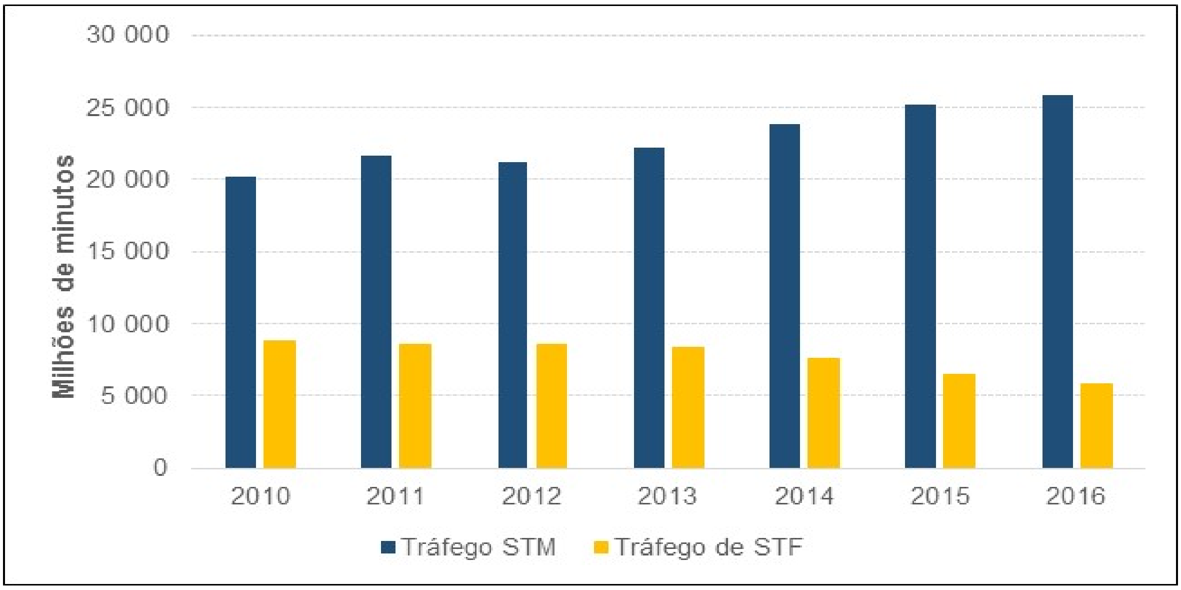
As regards the average monthly charge of commercial offers, by the end of 2016, stand-alone offers were charged 6.93€ (less 5.9% than in 2015). The monthly charge of multiple play packages tended to vary according to the amount of services included in the package and to other specific characteristics thereof (download and upload speed, amount of TV channels available, amount of voice minutes included, amount of cards and traffic included).

A comparison between the fixed sector and the mobile sector showed that the penetration rate of the latter remains far higher (by the end of 2016, the rate per 100 population was 46.3 for FTS and 165.2 for MTS), the mobile sector registering a very significant weight in the voice market.

In absolute terms, and comparing the voice traffic evolution, MTS voice traffic in minutes maintained a positive growth trend, in contrast to FTS voice traffic in minutes, amounting in 2016 to around 25.8 billion minutes, which represented an increase compared to the traffic volume at the time of the last market review in 2014 by around 8%. This voice traffic evolution resulted from the penetration increase of bundled offers that integrated mobile and fixed services (4P/5P) and included free calls to all networks.

[50] Cf. MARKTEST – Telecommunications Barometer Report, June 2017 [Basis: Owners of mobile phones (Total)]. Non-responses not included.

Chart 5 - Evolution of fixed and mobile traffic in minutes



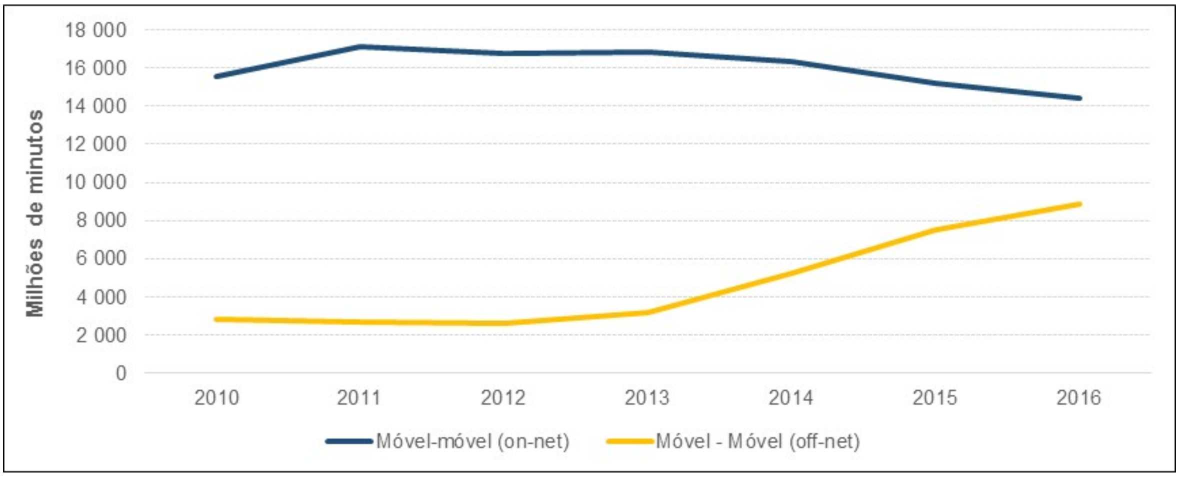
Source: ANACOM

The evolution of mobile traffic data reflects the impact of new offers made available by operators, integrated in bundles of services that remove or greatly reduce on-net/off-net differentiation or which include packages of calls to all national networks.

Off-net traffic maintains a positive growth trend for all operators, registering an increase by 70% in the period between the last market review (which at the time was based on data for 2014) and 2016, although in the period 2015-2016 (18%) that increase was less significant than in the periods 2013-2014 (64%) and 2014-2015 (44%). This type of traffic represents in the 2nd quarter of 2017 37% of all traffic from mobile networks, 15 percentage points p.p. more than in 2014. In contrast, most operators show a trend for the reduction of on-net traffic. [Beginning of Confidential Information - BCI]

[End of Confidential Information - ECI]

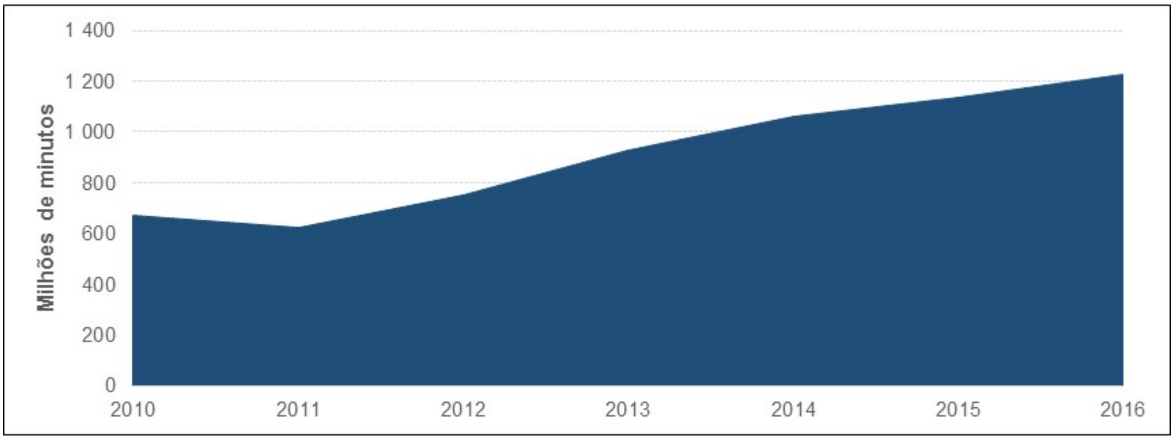
Chart 6 - Evolution of mobile-to-mobile originated traffic (on-net and off-net)



Source: ANACOM

Mobile-to-fixed traffic (Chart 7) reflects the impact of new offers, namely the fact that new packages include mobile and fixed communications, and registers a continuing growth, as demonstrated by the chart below. Between 2014 and the end of 2016, this traffic increased by around 15% and represents in the 2nd quarter of 2017 around 5% of all mobile originated traffic.

Chart 7 - Evolution of mobile-to-fixed originated traffic

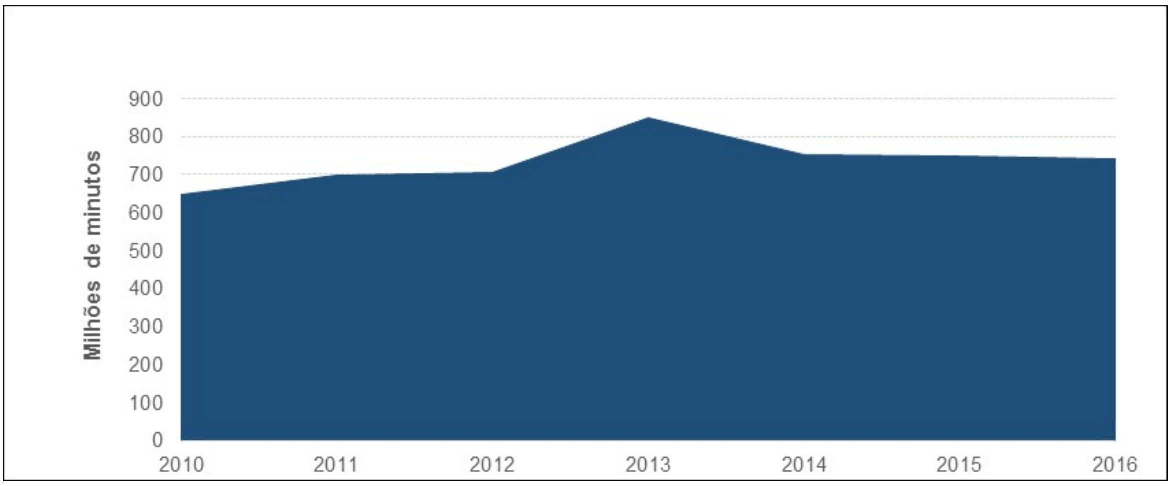


Source: ANACOM

International traffic (Chart 8), which registered an increase up to 2013, influenced by the effect of traffic generated by MVNO, decreased between 2013 and 2014 (around 12%), possibly as a result of the increasing use of substitutes for the telephone service made available by OTT services, and remaining relatively stable as from that period.

It is noted that international outgoing traffic originating on MVNO, providers that in some cases have made available tariff offers targeted at international communications, has decreased as from 2014. By contrast, this traffic has increased for two mobile network operators, which allowed the stability of the traffic value between 2014 and 2016 to be maintained, as shown in the chart below.

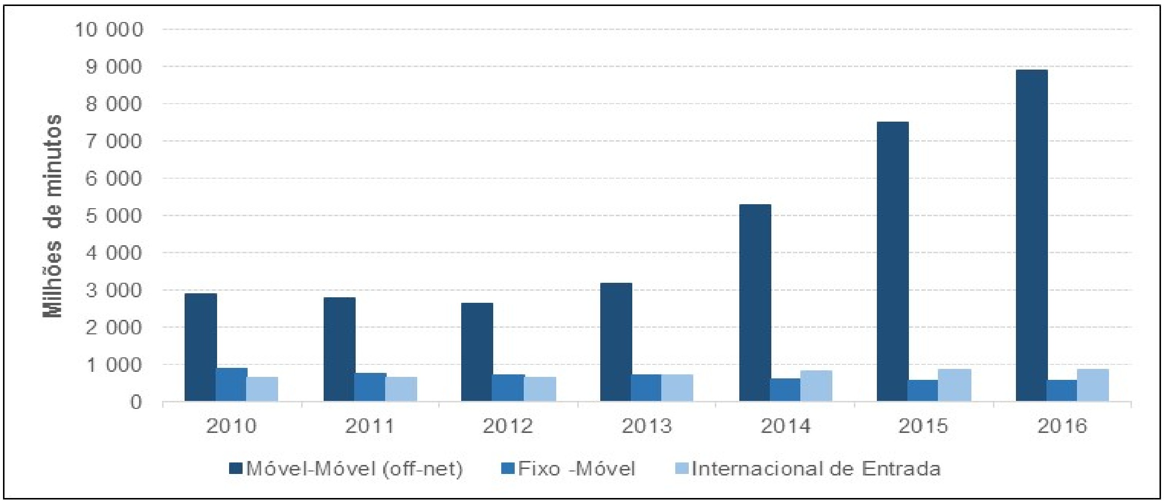
Chart 8 - Evolution of international outgoing traffic



Source: ANACOM

At far as terminated traffic is concerned, by the end of 2016 around 10.5 billion minutes were terminated on mobile providers, which represented an increase compared to 2014 by 53%.

Chart 9 - Evolution of the amount of minutes terminated on national mobile providers per type of call



Source: ANACOM

The chart below illustrates the evolution of retail traffic per provider from 2010 up to the 2nd quarter of 2017. NOS's growing evolution stands out, especially as from 2014, although MEO remains as the provider with the heaviest volume of retail traffic, which contributes to the fact that the volume of traffic originated on the three largest providers achieves the closest values ever.

Chart 10 - Evolution of retail traffic per provider

[BCI]

[ECI] Source: ANACOM

As regards the evolution of MVNO retail traffic, much clearer in the chart below, attention must be drawn to the decrease in the traffic volume originated by the three MVNO that have been established the longest in the market (CTT, Lycamobile and Vectone), which in the period between the end of 2014 and the 2nd quarter of 2017 decreased as a whole by 54%, while Lycamobile shows some occasional fluctuations that counteract this trend.

The appearance on the market in early 2016 of two new MVNO, NOWO and ONI, is highlighted, both of the Apax Group, supported on MEO's network. It is recalled that these two providers have different profiles, as ONI focuses on the business market and its customers include companies and public bodies, while NOWO operates with the residential segment, and provides offers that compete at retail level with operators holding their own network, including internet access services, FTS and pay-TV distribution service, in addition to MTS. Both providers register a growing evolution in the volume of MTS traffic originated by their own customers, NOWO's traffic having increased by around 90% between the end of 2016 and the 2nd quarter of 2017 and ONI Telecom by around 50%. By the end of the 2nd quarter of 2017 NOWO ranked 1st as MVNO with the highest level of originated traffic.

Chart 11 - Evolution of MVNO retail traffic

[BCI]

[ECI] Source: ANACOM

As has already been noted, the launch of tariff offers with no price difference between off-net or on-net calls, or with calls included for all national networks, boosted the positive evolution of traffic that had already been referred in the market review concluded by ANACOM in 2015, especially the growth of off-net traffic, as opposed to the slight reduction of on-net traffic.

These tariff changes contributed to decrease the intensity of the network effect or club effect, according to which the user prefers to be customer of the network used by most of its contacts, which always weighted heavily Portugal.

In this respect it is recalled that on-net/off-net discrimination places larger providers at an advantage, as lower on-net prices attract customers to the provider with the largest database, forcing smaller operators to decrease the respective off-net prices to levels equivalent to on-net prices of larger operators, in order to compete with them.

The simultaneous existence of price discrimination and above-cost wholesale termination rates creates the so-called tariff-mediated network effect, that is, although on-net/off-net discrimination is not a problem on its own, when combined with high termination rates it constitutes a potential competition distortion.

On the other hand, the reduction of off-net prices generates a higher outgoing traffic flow originated in smaller operators, which is not compensated by an increase of the outgoing flow in larger operators. The presence of flows with asymmetrical dimension - the so-called traffic imbalance - may generate significant financial transfers between operators of different size (financial imbalance).

Traditionally, in Portugal, traffic profiles have been significantly biased in favour of on-net communications, on account of the significant discrimination between on-net/off-net prices, which, combined with high termination rates, created a competitive disadvantage for the smallest operator on the market.

The launch in 2008, by the three mobile network operators, of the so-called tribal tariffs, which established a price difference between on-net calls (and even within the network, to specific groups) and off-net calls, but which at the same time presented relatively low off-net calls, led to the significant increase of retail traffic, especially off-net traffic, which in the case of the smallest operator, associated to the fact that termination rates were still well above costs, aggravated its financial imbalance.

ANACOM's decisions of 2010, and especially 2012, which set termination rates at levels based on results of the "pure" LRIC cost model, contributed to the launch of new retail offers that, on account of their characteristics, led to the reduction of price differentials between on-net and off-net calls.

As demonstrated in the last market review, the reduction of this differential became clear in 2013 and 2014, in particular due to the increase of bundled offers that included free calls to all networks. This trend remained and was strengthened further to ANACOM's 2015 Decision.

Charts below show the evolution of on-net and off-net traffic for the three largest providers, and it may be seen that, in the case of on-net traffic, the traffic volume for these providers become more closely aligned. This is due to the fact that both MEO and Vodafone show a trend to decrease their weight of on-net traffic - [BCI] [ECI] – more significantly than NOS, that has historically been the provider with the smallest proportion of this type of traffic – [BCI] [ECI].

It is stressed also that the most marked variation of on-net traffic for these providers took place after the 2015 Decision and subsequent price ceiling updates that took effect in July 2016 and July 2017, with MEO and Vodafone registering a decrease of on-net traffic and NOS registering a positive variation for this type of traffic as from 2013, which becomes more evident as from the end of 2015.

Chart 12 - Evolution of on-net traffic of operators with their own network

[BCI]

[ECI] Source: ANACOM

The evolution of off-net traffic shows the growth of this type of traffic in the three operators with their own networks. Without prejudice to this growth, which is more significant for NOS, NOS's off-net traffic shows a relative stabilisation, [BCI] [ECI]. By contrast, MEO's and Vodafone's off-net traffic weight registers an increase compared to the total mobile traffic for these providers [BCI] [ECI].

Chart 13 - Evolution of off-net traffic of operators with their own network

[BCI]

[ECI] Source: ANACOM

This traffic evolution allows the inversion of some trends that were registered at the level of imbalances in former periods of time. Vodafone presents a level of imbalance that benefits it, [BCI] [ECI]. In the case of MEO, which registered since 2013 an unfavourable imbalance, as from 2015 such imbalance is broadly offset [BCI] [ECI].

It is stressed that this traffic imbalance continues to be registered by NOS, [BCI] [ECI].

Chart 14 - Evolution of traffic imbalance per operator with its own network

[BCI]

[ECI] Source: ANACOM

As referred above, the launch of bundled tariff offers with no price difference between off-net or on-net calls, or with calls included for all national networks, boosted the positive evolution of traffic and the growth of off-net traffic for all operators.

In the case of NOS, although its position in the retail market was strengthened, the significant increase of off-net traffic contributed to maintain its traffic imbalance situation.

The graph below shows NOS' traffic imbalance compared to MEO and Vodafone [BCI] [ECI].

Chart 15 - Evolution of NOS' traffic imbalance per operator

[BCI]

[ECI] Source: ANACOM

The chart below presents the evolution of NOS' financial imbalance compared to MEO and Vodafone, and it may be seen that since mid-2015 this imbalance has decreased, which is a result of the decrease of traffic imbalance as well as of termination rates set at the level of "pure" LRIC costs, as a result of ANACOM's Decision of August 2015 and of the price update determined in 2016. The update already determined in 2017 is also likely to contribute to an additional reduction.

This chart thus makes it clear that a time coincidence exists between ANACOM's decisions to update price ceilings of voice call termination on mobile networks and the moments when NOS' financial imbalance is attenuated.

Chart 16 - Evolution of NOS’ financial imbalance

[BCI]

[ECI] Source: ANACOM

3. Definition of the wholesale market for voice call termination on individual mobile networks

According to the Community regulatory framework applicable to electronic communications, which follows the Community competition law, the wholesale market for voice call termination on individual mobile networks may be defined through the intersection of two different dimensions: the product market and the geographic market. This chapter will focus on these two dimensions to delineate the market under review.

As regards the **product market**, its process of definition depends on national circumstances, taking the Recommendation on relevant markets and the Guidelines into account, and aims to identify all products and/or services which are sufficiently interchangeable or substitutable, both in terms of their objective characteristics and in terms of their prices, their intended use, competition conditions and/or the structure of demand and supply in the market under consideration, This process of recognition thus begins by grouping together products or services used by consumers for the same purposes/end use, i.e., according to demand.

Products and services concerned will form part of the same relevant market where the behaviour of producers or suppliers of services involved are subject to the same kind of competitive constraints, i.e., on the supply side, particularly in terms of pricing.

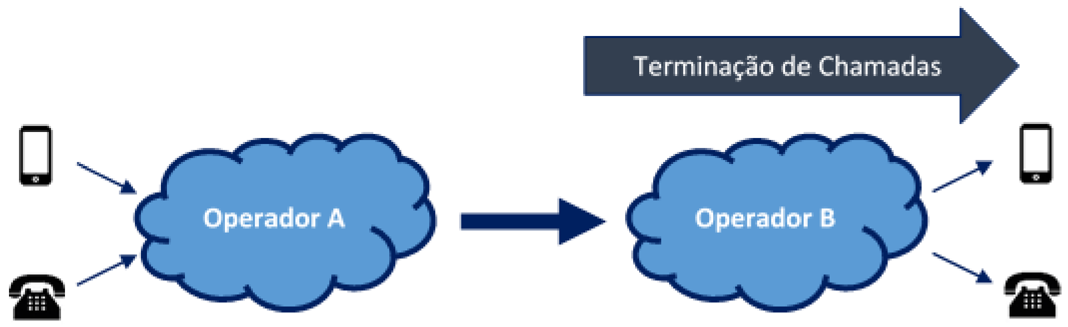
In this context, two main types of competition constraints are identified (i) demand-side substitutability; and (ii) supply-side substitutability. These competition constraints may, in isolation or in conjunction, constitute a basis for the definition of a particular product market.

On its turn, the relevant **geographic market** is identified through the area where companies concerned are involved in the supply and demand of the relevant products or services, and where competition conditions are similar or sufficiently homogeneous in relation to neighbouring areas.

3.1. Wholesale market for voice call termination on individual mobile networks

Networks of the various providers of voice communications services must be interconnected and a wholesale call termination service must be provided between them so that customers of such providers may communicate with one another. As such, the wholesale call termination service corresponds to the service whereby an operator (Operator B) terminates, on its own network, a call made to a terminal point of that network, which was carried by another operator with whom it has established an interconnection agreement (Operator A). Termination is fixed or mobile according to the operator providing the termination service.

Figure 1 - Provision of the call termination service



Operator A Operator B Call termination

Source: ANACOM

The call termination service is essential to the establishment of communications between mobile and fixed providers and between the latter and other market providers, being deemed by EC to be the least replicable inputs for the provision of retail voice services, reason for which they remain in the list of relevant markets susceptible to *ex ante* regulation[51].

Mobile termination specifically is a wholesale service whereby each mobile provider enables other providers - either fixed or mobile, national or international providers - to terminate calls made by customers of the latter to a customer of the former. This service may be provided by an operator with its own network or by mobile virtual network operators (MVNO), given

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[51] Cf. Explanatory Note accompanying Recommendation on relevant markets, section 4.1.3, paragraph 28, available at http://ec.europa.eu/information_society/newsroom/cf/dae/document.cfm?action=display&doc_id=7056.

that both are able to negotiate interconnection with other providers and terminate calls received at the various interconnection points.

The difference in the provision of termination services between mobile network operators and MVNO lies in the fact that network operators established their own mobile access network, while MVNO do not necessarily have their own network, and depend on third parties to provide their services. Although both types of operators supply mobile termination services to all other providers, in the specific case of MVNO, there may be situations where these providers earn no revenues for the provision of the call termination on numbers concerned. This situation occurs where there is an agreement between the referred providers and third parties on whom their activity is supported, whereby revenues resulting from the provision of the call termination service on numbers of the provider supplying the retail service belong to the supporting provider. When situations such as these take place, it is deemed that the MVNO is not the provider of the referred voice call termination service.

As in most European countries, mobile termination markets in Portugal use a charging system based on the “calling party pays” principle, that means, the principle according to which the caller pays the provider for the full price of the call, the retail price being set by the latter. In other words, the customer that receives the call does not pay for it. Notwithstanding, the reception of calls has a cost, and rates associated to the call termination service supplied by the provider of the customer to whom the call is made are defined by that provider.

Given that providers purchasing termination are also sellers, the call termination service is made in a reciprocal way, thus financial transfers associated to this service represent costs and revenues for providers.

3.2. Definition of the product market

According to the Guidelines, “*the relevant product/ service market comprises all those products or services that are sufficiently interchangeable or substitutable, not only in terms of their objective characteristics, by virtue of which they are particularly suitable for satisfying the constant needs of consumers, their prices or their intended use, but also in terms of the conditions of competition and/or the structure of supply and demand on the* *market in question*". The definition of the relevant product market thus requires, as referred earlier, the analysis of the demand-side and supply-side substitutability, as well as the assessment of potential competition.

In line with the position taken by EC[52], ANACOM takes the view that the starting point for the definition of the product market is to consider the dimension of the wholesale call termination market, which in this case corresponds to each of the individual mobile networks.

Moreover, and also according to EC[53], ANACOM considers that an analysis of demand and supply substitutability shows that there are no substitutes at wholesale level, currently or in the foreseeable future, which might constrain the setting of termination charges.

Given that a call does not replace another call, it could be possible, in theory, to define a market restricted to each user, or, in another perspective, to include retail and wholesale termination services in a single national market for mobile services. However, these definitions are deemed not to be appropriate, given that, on the one hand, it is not feasible for mobile providers to differentiate each user/call terminated on its network with differentiated rates, which would be a pre-condition for the existence of a market for each user; and, on the other hand, although certain groups of users may exercise some countervailing power which in theory could support the consideration of a single mobile market, it can be observed that operators easily segment their customers in different groups of users by providing them offers which are also differentiated (for example, a discount plan for a group of users). As such, given that the referred segmentation is performed so that, overall, providers remain unconstrained in the setting of the respective termination rates, the possibility of defining a large wholesale and retail national market becomes unfeasible.

[52] Cfr. 2014 Explanatory Note accompanying the Recommendation on relevant markets, Section 4.1.3., p. 28, available at
http://ec.europa.eu/information_society/newsroom/cf/dae/document.cfm?action=display&doc_id=7056.

[53] Cfr. Explanatory Note accompanying the Recommendation on relevant markets, Section 4.1.3., p. 28.

Moreover, retail calls as a whole are subject to different types of competitive pressure, and as such, on the demand side, there are no grounds to integrate them in a single wholesale and retail market. On the supply-side, it would also not be appropriate to define s single market for termination services, given that there are technical restrictions which prevent providers from substituting one another in this provision, and also because, if termination rates were increased, there would be no companies able to enter the market to provide the same termination service, as they lack access to SIM card data of customers on whom calls are terminated.

At the level of demand-side substitutability, taking only the wholesale market into account, it is observed that providers are constrained by the choice made by their retail customers, as they are not able to opt to deliver a call to be terminated on a network other than the one chosen by the customer who made the call. As a result, it is deemed that providers purchasing the termination service do not have any alternative but to acquire it from the mobile provider to whom the called end-user belongs. Likewise, it is deemed also that there is no supply-side substitutability at wholesale level, given that, as mentioned earlier, only the mobile provider of the customer receiving the calls, that issued its SIM card, is able to access that information, and may not be substituted by a hypothetical third-party operator that intends to provide the termination service.

It may therefore be concluded that at wholesale level there is currently no potential for substitution, either on the demand-side and on the supply-side, and it is deemed that on the short term there will be no technological developments able to modify this conclusion. As such, the position taken in the former market review, according to which the wholesale call termination market corresponds at the very least to the dimension of each network, remains, although mobile virtual operators hold even fewer network elements.

Nevertheless, given that the demand for wholesale products stems from the retail market, and is affected by its characteristics, the assessment of wholesale markets, as indicated by the Recommendation on relevant markets, requires also a forward-looking assessment of relevant retail markets, bearing in mind the demand-side and supply-side substitutability[54].

[54] Cfr. paragraph 7 of Recommendation 2014/710/EU on relevant markets http://eur-lex.europa.eu/legal-content/PT/TXT/PDF/?uri=CELEX:32014H0710&from=PT.

This means that in addition to “direct” constrains resulting from substitution at wholesale level, it is also necessary to consider “indirect” constrains resulting from the retail market that arise due to the fact that an increase of wholesale prices may be transferred to the retail market, compelling retail customers to switch operators or even communications services. These indirect constrains may cause certain products to be included in the same relevant market, even if these products do not constrain each other directly at wholesale level.

At retail level, in the light of the “calling party pays” principle, even if in theory the existence of constrains arising from the demand-side substitutability could be referred, as a rule the customer that originates the call is not able to influence the price of the termination service, given that it is not set by its provider and, on its turn, the end-user that receives the call, who does not pay any charge for receiving the call, is naturally not very sensitive to the price of the wholesale service, as it does not affect him/her directly, and as such he/she generally lacks incentives to push for a price decrease. As such, the “calling party pays” principle significantly decreases the downward pressure felt by an operator when defining the termination price to be charged to operators purchasing the termination service.

In this context, and on the basis of the definition of a market for each network, the possibility of demand-side and supply-side substitutability between termination services and different types of networks, types of calls, types of services, such as voice, SMS and data services, and types of technology, must now be assessed. As such, it is now examined in more detail whether demand and supply for other services or technologies, which could potentially be considered by consumers to be substitutes, may exert sufficient competitive pressure to justify the broadening of the product market definition.

3.2.1. Voice call termination on mobile networks vs. voice call termination on fixed networks

This section weights whether to maintain the position according to which the mobile termination market constitutes a separate market from the market for termination on fixed networks.

When the called party may be reached both through a fixed access and through a mobile access (for example, at work or at home), in principle, the caller may opt to make a call to the fixed network as a substitute for a call to the mobile network. As such, the substitution of a call to a mobile number for a call to a fixed number is feasible where the recipient of the communication holds both a fixed access and a mobile access, being additionally in a position that enables him/her to access both services. However, as identified in the 2015 Decision, even where this condition is fulfilled, it is possible to identify factors that determine that calls to fixed networks are not, in general, a sufficiently close substitute for calls to numbers of the mobile network to allow them to be included in the same market. This is due to fundamental differences between fixed and mobile services, namely:

- Calls to a fixed access require the recipient to be at a specific location at a given moment, while calls to mobile numbers are more likely to allow an immediate contact, especially in situations where the call between the caller and the recipient is not planned. The possibility of immediate contact, as well as the associated increased mobility, is thus an important factor in the decision to call someone to its mobile access instead of using other means.

- The substitution of a call to the mobile network for a call to a fixed access also requires that the caller knows, or easily finds out, the fixed number in alternative to the mobile number of the party intended to be called. This could be the case among family members or close friends, or maybe companies that make available different means of contact, but it is unlikely that this will be true for all or most call recipients.
- Unlike FTS, the mobile service is associated to a more personal use, as mobile terminals are less likely to be shared with other users. As such, mobile terminals provide greater privacy and security in the scope of received calls and access to voice mail services. In general, users value these features are valued and, as such, the latter may determine the choice for making a call to the mobile network instead of the fixed network.
- There are also differences in terms of the quality of communications perceived by the user to be associated to the fixed service and to the mobile service, making them sufficiently different for them not to be considered by the user to be substitutes.

- Notwithstanding the increase of bundled offers, which in many cases combine both services, the conditions for stand-alone provision of the two services are different, involving different rates and payment methods.
- Moreover, the substitution between a call to a fixed number and a call to a mobile number would only be relevant where consumers were aware in some way of the differences between rates of calls to the fixed network and to the mobile network. This suggests that even where there was an increase in the price of calls to a mobile network, consumers may not be aware whether a call to the fixed network could be a cheaper alternative (or even the best closest alternative in terms of prices).

In the light of the above, although a voice call to a fixed number may be deemed by some users to be an alternative, it is unlikely that a significant amount of such users changes its intention to make a call to a mobile number, opting for a call to a number of the fixed network, in response to a small but significant increase in the retail price of a call to a mobile number. In this context, it is deemed that call termination on mobile networks is not constrained by the possibility of making retail calls terminated on fixed networks.

Moreover, on the supply-side at wholesale level, given the high entry barriers that characterize mobile markets, resulting not only from limitations in available spectrum but also from investments required to develop a mobile network, it is unlikely that fixed network operators, further to a small increase in the price of the call termination service on mobile networks, are able to enter the market in order to provide a termination service that competes with the service already available.

It must be also taken into account that, although there are other bodies that maintain both fixed and mobile operations (such as bodies that entered the mobile market by negotiating access agreements as MVNO, or operators on the fixed market that purchased mobile operations via merger processes), they provide both fixed and mobile wholesale termination services under different conditions, namely in terms of rates. It is noted, in this respect, that the termination rate of mobile networks still is substantially higher than the termination rate of fixed networks, and there is no evidence that the latter is able to exert any significant pressure on the setting of prices of mobile network termination.

It must also be stressed that, notwithstanding the considerable increase, as referred earlier, in the offer of bundled services that provide both fixed and mobile services, the fact that it is acknowledged that this will have impact at retail level in consumer perception, in the sense that consumers may consider fixed and mobile services to be less and less different, the greater convergence of both types of offers still assumes an essentially commercial nature, existing data pointing towards the existence of some complementarity, rather than substitutability, of FTS and MTS offers.

In fact, the most popular bundled offer modality continues to be, according to data for the 2nd quarter of 2017, the 5P offer[55], with 1491 million subscribers (41.3%). Moreover, according to data from the TCB[56], among people with access to the mobile telephone service in the 3rd quarter of 2017, around 74.4% held both types of access (FTS and MTS) [57]. According to the “E-Communications and the Digital Single Market Communications” Eurobarometer[58], in October 2015 66% of Portuguese households held both FTS and MTS, exceeding the European average which stood, in the same period, at 59%.

In short, in the light of the above, it is concluded that call termination on individual mobile networks and call termination on public individual telephone networks at a fixed location do not integrate the same relevant markets.

3.2.2. Voice call termination on mobile networks vs. on-net calls

It was concluded in the former review that on-net calls do not exercise sufficient competitive constraint on mobile call termination so as to justify their inclusion in the same product market.

[55] Which includes FBB, FTS, PTV, MTS and MBB.

[56] Quoted in ANACOM (2016): “The 2015 electronic communications consumer”, p. 37.

[57] Base: Individuals aged 15 years or over with access to the telephone service (non-responses not considered). Note: all estimates are reliable (coefficient of variation lower than 10%).The accuracy of estimates does not only depend only on the sample size, but is also influenced by the value of the estimate itself (e.g. for a fixed sample size, the reliability measured by the coefficient of variation is lower when the estimate value is lower).

[58] Available at http://ec.europa.eu/COMMFrontOffice/publicopinion/index.cfm/Survey/getSurveyDetail/instruments/SPECIAL/surveyKy/2062 [accessed on 12.04.2017].

If the existence of a higher mobile termination rate significantly increased the price of a fixed-to-mobile call or of a call to other mobile networks (off-net calls) compared to calls to the same network (on-net calls), a likely response from the consumer would be to switch off-net calls for on-net calls. However, this substitution is only possible where users have multiple mobile subscriptions (several SIM cards), and are thus able to opt for making calls on the recipient's network.

In this respect, it must be stressed that only a small proportion of consumers have more than one SIM card. According to TCB data, in November 2017 each mobile phone owner had in average 1.1 active cards, a value that does not seem to be very significant, as it suggests that at least 90% have a single active card (this value may be even higher as some users may own more than 2 active cards). Moreover, it is possible that a user may hold more than one SIM card of the same network operator, which means that the fact that a consumer holds several SIM cards does not necessarily indicate that this would allow him/her to avoid higher prices to call a given mobile network switching the referred cards.

Another possible means for replacing off-net calls for on-net calls would be the coordination of a group of contacts so that the same network is used. However, according to TCB data, in November 2017 around merely 9% of consumers indicated that the mobile operator choice factor was the fact that people with whom they contact subscribed that same network, a value that in fact decreased 4 p.p. compared to the corresponding period in 2016 and 12 p.p. compared to the last market review (August 2015), and which is reflected in the increase of off-net traffic of the three operators with their own network. On the other hand, there is limited capacity as regards coordinating the creation of these groups, in the light of the variety of persons to be included therein and the fact that there are other potential contacts.

Moreover, and as referred earlier, providers have supplied customers with specific tariff options which allows them to make calls to a group of persons at a controlled cost or with tariffs with calls at the same rate for all networks (or even at no cost - all net calls). This strategy enables providers not to feel any pressure in the scope of the setting of termination rates.

In addition, without prejudice to the high proportion of on-net calls, there is no evidence that these calls impose any constraint on the setting of termination rates, as it is a fact that, over more than 10 years of regulatory intervention, mobile termination rates have remained almost always at levels that correspond to price ceilings determined by regulation.

In the light of the above, ANACOM maintains its position according to which the substitution of mobile termination for on-net calls is not such as to constrain wholesale termination rates, thus voice call termination on mobile markets and on-net retail calls do not integrate the same market.

3.2.3. Internet communications

In the scope of the 2015 Decision, ANACOM considered that there was no reason why Internet-originated communications should integrate the same relevant market as mobile call termination. In the light of recent technological evolutions and the continued growth of service offers that allow the establishment of voice communications via Internet-based apps[59], ANACOM takes the view that it must weight again whether the referred apps could be integrated in the same market of traditional calls that terminate on the mobile network.

According to the TCB, around 73% of mobile phone holders used smartphones in November 2017, which represents an increase by around 13 p.p. compared to the last market review (2015). The development of this type of terminals, which allows access to higher Internet access speeds via the mobile service, has enabled an increasing use of Internet-based communications.

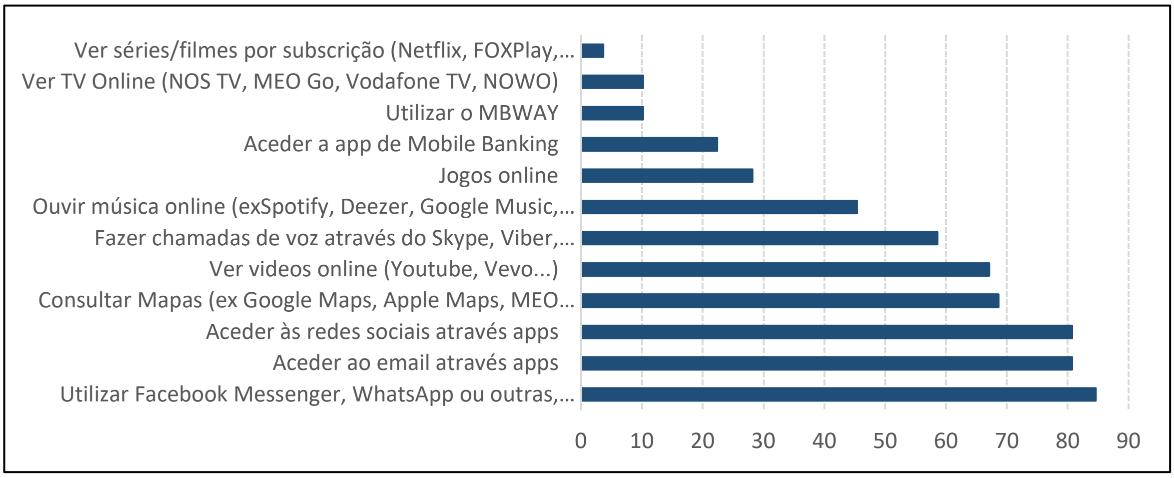
Nevertheless, according to data from the same TCB, in the 2nd quarter of 2017, around only 22% of consumers «fully agrees» with the existence of substitution between traditional and OTT services, whereby in a scale from 1 (no substitution) to 10 (full substitution), consumers considered the degree of substitution between traditional mobile voice services and OTT services to achieve 6.89 in average.

Notwithstanding the high penetration of this type of equipment, it is observed, according to the chart below, that in November 2017, customers of the mobile phone Internet service

[59] Such as Skype, Viber or Whatsapp.

preferred to use other services, such as the access to instant messaging tools (84.6%), email via apps (80.7%) and social networks (80.7%), which were only then followed by the Internet voice call service, reaching 59% of people using mobile phone internet.

Chart 17- Services used when accessing the Internet on the mobile phone (%)



Base: Individuals aged 10 years or over with mobile phone Internet access

Source: Marktest Telecommunications Barometer.

Moreover, although there is a growing trend for Internet-based voice calls, its use is stronger among Greater Lisbon users, students and people with higher levels of schooling (secondary and higher education). As such, it is not disseminated among the rest of the population and tends to focus mainly on international communications.

At European level, according to EC's survey "Information and Communication Technologies in households and by individuals", in early 2016, 39% of Internet users in Portugal made voice or video calls over the Internet (a value that corresponded to the average of EU28). Portugal ranked 20th in the ranking of EU28.

According to the E-Communications and Telecom Single Market Household Survey[60], users declared that traditional voice services are more significant than OTT services (voice/video calls over the Internet, but also services such as instant messaging) in their daily lives. This

[60] According to EC's *E-Communications and Telecom Single Market Household Survey*, of October 2015, respondents were asked about the first service/app that was the most important in their everyday lives, followed by the other most important three.

could be the result of some constraints that are currently associated to the more general use of these apps, namely the quality of service perceived by end-users associated to some Internet-based voice services, which is irregular and in some cases not comparable to more traditional voice services; lack of trust in the security of these communications; its interoperability which requires not only that both the user making the call but also the one receiving the call have compatible terminals but also the same apps.

Moreover, although there are in Portugal several available apps that allow Internet-based voice communications, the recent evolution of mobile traffic (*vide* analysis in Chapter 2) does not indicate that end-users are substituting retail voice calls made over traditional mobile networks for services provided over the Internet, at least not in such a way as to make it likely that, in the presence of a small but transitory price increase of mobile voice calls, users would substitute them in a significant manner for the referred apps.

Note that the EC itself considers, in the Recommendation on relevant markets, that these services are not substitutes for services provided by mobile operators - "currently OTT services are not yet at a level in which they can be considered actual substitutes to the services provided by infrastructure operators"[61], BEREC's report on OTT services also reaching the conclusion that "In general the analyses of NRAs for voice markets lead to the conclusion that OTT voice services, at least at this moment, are not substitutes to traditional voice"[62].

In short, the competitive pressure that these apps create on the traditional voice call service does not seem to prevent a mobile operator from profitably increasing prices of mobile termination, thus the definition of a broader market seems not to be justified.

Without prejudice to the above, communications originated over the Internet that are terminated on mobile networks, thus generating interconnection costs for providers that terminate them, that is, costs for the provision of the termination service, should integrate the same relevant market of the market for termination of mobile communications, given

[61] Cfr. Explanatory Note accompanying the Recommendation on relevant markets, Section 3.2, p. 17, available at http://ec.europa.eu/information_society/newsroom/cf/dae/document.cfm?action=display&doc_id=7056.

[62] Cf. BEREC Report on OTT services, BoR (16) 35, p. 19, available at http://berec.europa.eu/eng/document_register/subject_matter/berec/reports/5751-berec-report-on-ott-services.

that this wholesale service does not differ from the one intended to terminate any other type of voice call.

3.2.4. Voice call termination on mobile networks vs. data call termination (SMS) on mobile networks and other voiceless communications (e-mail and instant messaging)

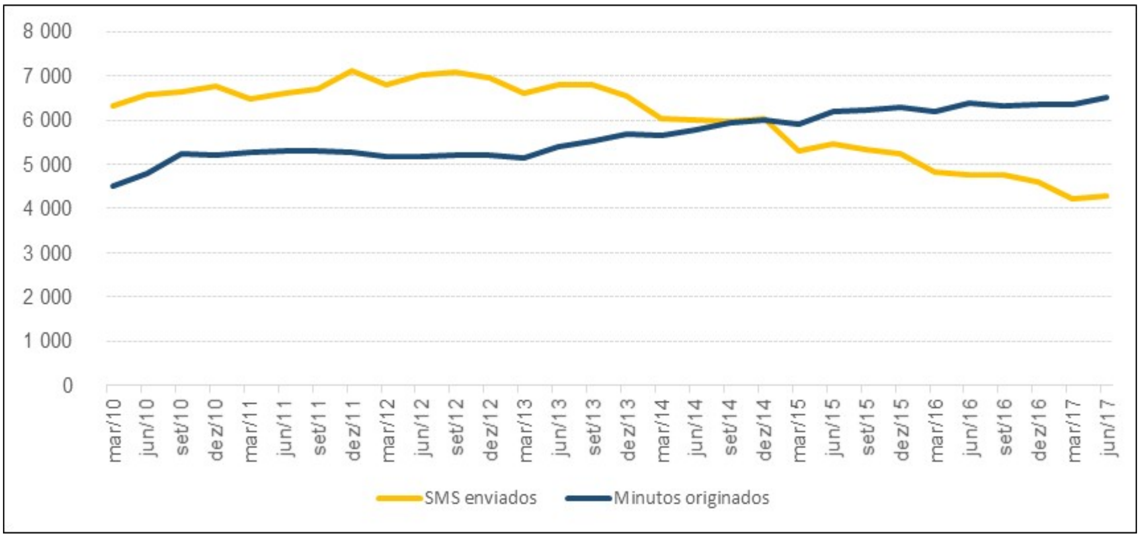
There are several means of communication between mobile equipment that in theory may act as substitutes for a voice call without, however, involving the use of voice, which include data services (texts or SMS), email and the use of instant messaging in social networks.

ANACOM concluded in its previous reviews that data services (SMS), at retail level, and as a consequence, at wholesale level, do not exercise sufficient competition constraint on the setting of rates of voice call termination on mobile networks so as to justify their inclusion in the same market.

Notwithstanding the fact that they are frequently marketed as a package, at retail level voice and SMS services are not necessarily substitute each other, being preferably considered to be complementary services as they show different characteristics, on account of the nature and dimension of contents transferred, the purpose given by users, the type of use considering different segments of the population, different tariff structures and charges, and the fact that SMS are sometimes sent with delay to addressees, especially during high traffic periods.

The chart below (Chart 18) shows the traffic evolution associated to voice calls and SMS originated on mobile providers since 2010. Although the use of SMS continues to be widespread among mobile users (penetration reached 73.5% according to data for the 1st quarter of 2017), it may be observed that SMS traffic decreased by around 32% between the 1st quarter of 2010 and June 2017. By contrast, voice call traffic, in the same period, increased by around 44%. As such, traditional voice calls and SMS have demonstrated different dynamics, although there are no signs that this evolution is correlated, that is, that this could be the result of any kind of substitutability between voice calls and SMS.

Chart 18 - Evolution of traffic in minutes originated and SMS sent (millions)



Source: ANACOM

The decrease in the amount of SMS could be the result of the competitive pressure of instant messaging services provided by bodies (OTT) other than mobile service providers, frequently at lower prices, or for free, and which are currently the service most widely used via a mobile access (*vide* Chart 17).

In fact, according to the TCB[63], in the 2nd quarter of 2017, around 51.7% of mobile phone users aged 10 or over uses instant messaging services[64], and around four out of five users with internet access services on the mobile phone send instant messages.

This growth suggests that end-users may be more dependent on their daily lives of communications other than voice services and, as such, that they could consider them to be acceptable alternatives to a voice call.

However, as already observed in the case of SMS, there are fundamental differences between the nature of a voice call and the nature of potential "alternatives" described above.

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[63] The universe of the Telecommunications Barometer - Mobile Network comprises individuals aged 10 and over living in mainland Portugal or in the Autonomous Regions of Madeira and the Azores; a sample is compiled on a monthly basis which is proportional to and representative of the study's universe, corresponding to 1200 interviews per month (3500 interviews per quarter).

[64] The question in the survey refers to "services that you normally use on your mobile phone".

Emails, just like SMS, are subject to delays in their delivery, that may be longer not only on account of traffic congestion, but also given that its effective use depends on how regularly the recipient checks its inbox and sends a reply. On its turn, the instant messaging service, notwithstanding its potential to allow quicker conversations, between two or more people, and to involve a wider range of content (such as videos, photos and GIF[65]), basically operates between restricted user groups, given that not all consumers have the same messaging apps or compatible equipment. The main use of social networks is communicating to groups of people. The study on content and application services (over-the-top - OTT)[66] refers that 68.8% of surveyed people found that the main reason for the use of social networks was the amount of people already connected to a given social network. It was found also that use of instant messaging remains higher in the range of users below 35[67] and, as referred in section 3.2.3, users continue to consider that traditional voice services are more relevant than OTT services, which is particularly significant taking into account that many of these OTT services are provided for free, unlike voice services.

These alternative means of communication, including SMS, are also not able to properly convey a fundamental aspect of communication associated to the various voice modalities or paralanguage, which include changes of pitch, intensity and rhythm, which supply information on the emotional state of the speaker, a fact that contributes even further to the distinction between these alternatives and voice calls.

At wholesale level, the evolution of rates applicable to voice termination always depended on regulatory intervention, which was not the case with SMS termination, which is a non-regulated service (Chart 19). As such, reductions of the SMS termination rate depended on commercial negotiations between the various providers.

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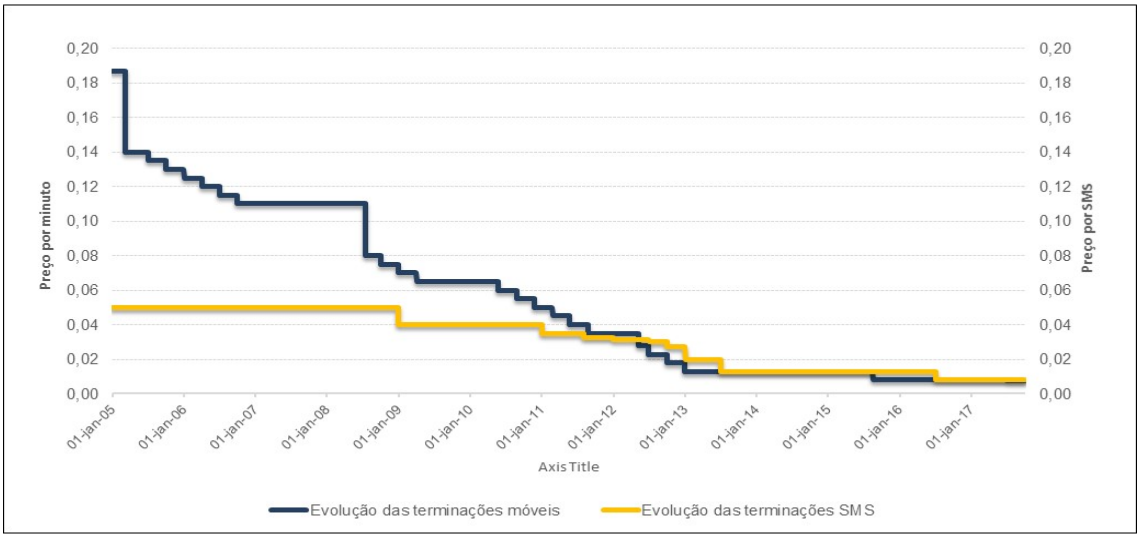
[65] GIF – Graphics Interchange Format.

[66] Available at: https://www.anacom.pt/streaming/RelatorioIntegrado_VersaoPublica_20160122.pdf?contentId=1378519&field=ATTACHED_FILE.

[67] ANACOM estimate using discrete choice econometric models - logit - on the basis of microdata from Marktest Barometer for the 2nd quarter of 2016.

Chart 19 - Evolution of mobile voice termination and SMS termination rates



Source: ANACOM

In the light of the above, and taking into account that, for end-users (demand-side perspective), voice and SMS services are differentiated services, with different means of use and rates, and that, on the supply-side, all operators provide both services, both at retail and wholesale level, and as such the setting of voice call termination rates is not constrained by the setting of SMS termination rates, ANACOM maintains its view that there is no substitutability between voice call termination on mobile networks and data call termination (SMS) on mobile networks.

With the constant change in communication patterns, it is natural that alternative means continue to develop, nevertheless this Authority believes that price changes do not provide for sufficient competitive pressure such as to result in changes from one type of voice communication to another in a different format, which is a relevant factor to assess the definition of the product market. In short, ANACOM maintains its view that characteristics of these alternative means of communication, email and instant messaging, do not make them susceptible to be sufficiently close substitutes such as to be included in the same relevant market of voice call termination on mobile markets.

3.2.5. Voice call termination on mobile networks of various technologies

In former reviews, ANACOM concluded that there is a single market for voice call termination on the network of each provider that integrates the provision of services based on GSM and UMTS systems.

On the demand-side, at retail level, not only is the end-user indifferent as to which technology or network is used to terminate the call, but he/she may frequently not even be aware that calls he/she makes may use different networks to connect to the caller, such as 2G, 3G, 4G and in the future 5G. The destination user (the one receiving the voice call) is, in general, also not aware of the technology used by its provider to terminate that call.

Notwithstanding the development and implementation of new technologies or layers, such as 4G, including in Portugal the provision of LTE-based voice services, there is no evidence that end-users will become more sensitive as to the type of technology based on which calls are made or received.

On the supply side, there are no elements that allow an assessment of possible competition constraints between termination on 2nd and 3rd generation networks, given that services concerned continue to be provided by the same operators.

In this context, ANACOM considers that premises which supported its conclusion in previous reviews, that call termination on mobile networks is independent of the type of network on which that provision is supported, still remain.

3.2.6. Voice call origin and definition of the product market

It was concluded in the last market review that the reference market included the provision of mobile termination voice call services regardless of their origin, thus including calls made in the European Economic Area (EEA) and elsewhere.

Notwithstanding this characteristic in the definition of the product market, this Authority considered it appropriate to distinguish obligations imposed on operators identified at the time as having SMP according to the origin of the call, that is, calls delivered to national providers made in countries outside the EEA ceased to be subject to the obligations for price control, non-discrimination and prior publication of prices of services for termination of this type of calls.

The differentiation at the level of *ex ante* regulation must not, however, affect the definition of the product market, given that, in a technical and economic perspective, the same termination service is concerned.

ANACOM thus maintains its position that the product market should include termination of any voice call, regardless of its geographic origin. The possible differentiation in regulation according to the intra- or extra- EEA origin of traffic is analysed in the chapter on regulatory measures to be applied on operators identified with SMP.

3.2.7. Definition of the product market: conclusion

In light of the above, ANACOM concludes that the product market consists of wholesale services of voice call termination provided to third parties by each mobile network operator and by MVNO, covering termination supported on any technology used in the access network (and of all voice calls), regardless of the type of network, the body originating the call and the geographic origin of the call.

This definition includes termination of calls to numbers ported to the provider concerned, as well as termination on voicemail of the respective customers.

3.3. Definition of the geographic market

According to case law, "*the relevant geographic market comprises an area in which the undertakings concerned are involved in the supply and demand of the relevant products or services, in which area the conditions of competition are similar or sufficiently homogeneous and which can be distinguished from neighbouring areas in which the prevailing conditions of competition are appreciably different*".

Just like in former market reviews, the geographic market will be defined based on two main criteria: the area covered by networks and the existence of legal and regulatory instruments, including restrictions associated with authorizations assigned to providers, tariff obligations and service provision obligations.

It can be noted that mobile providers operating in Portugal are not restricted as regards as geographic areas where the respective services are provided, and retail offers are made available under uniform tariff conditions throughout the national territory. Moreover, at wholesale level, the termination service provided also presents uniform pricing, and there are no differentiated competitive conditions according to geographic areas where the offer is provided.

In the light of the above, and to the extent that the market product is constituted by wholesale services of voice call termination on each of the existing mobile networks, ANACOM maintains its position that the geographic delineation of the relevant market coincides with the geographic coverage of each termination network, and as such, there are homogeneous conditions of competition at national level.

3.4. Conclusion

In the light of the review conducted, it is deemed that, in Portugal, the dimension of wholesale markets of voice call termination on mobile networks corresponds to the network of the provider supplying the service, involving the provision to third parties of the wholesale voice call termination service by mobile network operators and by mobile virtual operators, regardless of the type of network, technology, body originating the call and the geographic origin of the call.

4. Markets susceptible to *ex ante* regulation

According to EC, markets identified for the purpose of *ex ante* regulation must meet all of the following three criteria:

- Barriers to entry and development of competition: persistence of high entry barriers, whether of a structural, legal or regulatory nature;

- Dynamic aspects: the characteristics of the market will not lead in due time towards effective competition, *ex ante* regulatory intervention being required. The application of this criterion involves an examination of the state of competition behind barriers to entry;

- Relative effectiveness of competition law and additional *ex ante* regulation: insufficiency of competition law by itself to deal with persistent market failures.

Given that the product market defined in the scope of the market for voice call termination on individual mobile networks corresponds to the relevant market recommended by EC and that, according to EC, markets listed in the new Recommendation on relevant markets continue to be identified on the basis of the three cumulative criteria described above, it is considered that the market defined in this review procedure is relevant for the purpose of *ex ante* regulation, and for this reason, the existence of SMP therein will be assessed, a prior examination of the three-criteria test not being required[68].

[68] Cf. Explanatory Note accompanying the Recommendation on relevant markets, Section 2.3, p. 11: "*Given the analysis conducted by the Commission in the Explanatory Note of retail markets and their related wholesale markets, for the markets listed in the Recommendation, a presumption exists that the three criteria are met. Therefore, NRAs do not need to reconsider them when adopting a measure to address a market failure in one of the listed markets.*", available at
http://ec.europa.eu/information_society/newsroom/cf/dae/document.cfm?action=display&doc_id=7056

5. Assessment of SMP in markets for voice call termination on individual mobile networks

Having relevant product and geographic markets been defined, the next step is to assess, under the ECL and Community regulatory framework, whether the market is effectively competitive, *ex ante* regulatory obligations being imposed where companies with SMP are found to operate in these markets.

According to article 60, paragraph 1, of ECL (article 14 of Framework Directive), "*a company shall be deemed to have SMP if, either individually or jointly with others, it enjoys a position equivalent to dominance, that is to say a position of economic strength affording it the power to behave to an appreciable extent independently of competitors, customers and consumers".*

As reflected in the description quoted above, SMP may be held by a single company or by more than one entity in the market, respectively single dominance or joint dominance[69], and additionally, where a company has SMP in a specific market, it could also have SMP in a closely related market. This is the case where links between the two markets, the specific market and the related market, are such as to allow the market power held in one market to be leveraged into the other market, thereby strengthening the market power of the company (SMP leveraging).

It should be noted that the assessment of SMP assumes the so-called "*modified Greenfield approach*"[70], that is, the hypothesis that that there is no current or potential regulation of SMP in the relevant market, given that the results of an assessment of SMP entails testing whether or not any regulatory intervention is required, bearing in mind, however, the regulatory measures imposed (if any) in upstream markets. Therefore, the assessment of SMP in the market for voice call termination on individual mobile networks

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[69] ECL, article 60, paragraph 3.
The NRA may consider that two or more companies are in a joint dominant position, even in the absence of structural or other links between them, where they operate in a market which is characterised by a lack of effective competition and where no single company has significant market power.

[70] Cf. Recomendação – Exposição de Motivos, secção 2.2 e 2.5. Disponível em: http://ec.europa.eu/information_society/newsroom/cf/dae/document.cfm?action=display&doc_id=7056 (apenas versão em inglês).

requires the assumption of a hypothetical market with no SMP regulation (or no "threat" of SMP regulation), observing, at the same time, the possible effect of the existence of regulation in upstream or related markets.

5.1. Criteria for assessing SMP

The starting point for the assessment of SMP consists in taking EC Guidelines[71] into account, namely the fact that "*a dominant position is found by reference to a number of criteria and its assessment is based*, (...), *on a forward-looking market analysis based on existing market conditions*"[72]. The reviewed working paper on SMP of the European Regulators Group (currently BEREC)[73], that adds relevant considerations to the Guidelines, must also be considered.

The Guidelines indicate that market shares are an indicator that may be used as proxy for market power, referring that, although a high market share may not be sufficient to determine the existence of SMP, "*according to established case-law, very large market shares — in excess of 50% — are in themselves, save in exceptional circumstances, evidence of the existence of a dominant position*"[74], [75].

Nevertheless, EC refers also in the Guidelines[76] that the existence (or absence) of a dominant position cannot be established exclusively through the analysis of market shares, whereby NRAs are required to make use of a combination of other criteria, among those referred in the same document.

[71] Available at http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2002:165:0006:0031:PT:PDF.

[72] Cfr. Guidelines §75.

[73] Available at: http://berec.europa.eu/doc/publications/public_hearing_concept_smp/erg_03_09rev3_smp_common_concept.pdf.

[74] Cf. Guidelines §75.

[75] In EC's decision-making practice, concerns on situations of individual dominant position have been raised in general in the case of companies with market shares exceeding 40%, however there may be situations of dominant position even where market shares are lower or situations of companies with higher market shares that are not considered to be dominant companies.

[76] Cf. Guidelines, §78.

Available at http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2002:165:0006:0031:PT:PDF.

As such, this review will focus on four criteria deemed by ANACOM to be the most appropriate in the scope of the assessment of markets under analysis: market shares, barriers to market entry, countervailing buying power and rates applied[77].

It should be noted that, given that each market for voice call termination on individual networks has a single operator, joint dominance does not apply, reason for which only the existence of individual dominance will be assessed.

The review carried out below takes into consideration the definition of company provided for in the Competition Act currently in force[78].

5.1.1. Market shares

According to the definition of relevant markets presented in Chapter 3, a single provider of termination services exists in each market, thus all mobile telephone service operators in the market hold a 100% market share, that is, they all have a monopolistic position with respect to the supply of the wholesale voice call termination service, regardless of the respective dimension and of the amount of services provided.

ANACOM acknowledges that mobile users are able to receive calls for which the respective provider of mobile communications services has not defined a termination rate, namely calls made through OTT services. However, as referred earlier, these calls are not considered to integrate the same relevant market, and it is deemed also that the evolution of traffic terminated on the mobile network also shows that these calls do not place a significant competitive pressure, such as to impact the wholesale termination service provided, namely rates.

Notwithstanding the fact that they hold a monopolistic position in the wholesale termination market, in order to determine the size of each of these termination markets, the following

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[77] Although rates applied are not one of the criteria defined in EC Guidelines, excessive prices are listed as a criterion in ERG's position. It is particularly referred in paragraph 20 that "...*the ability to price at a level which keeps profits persistently and significantly above the competitive level is an important indicator for market power*."

[78] Law No. 19/2012, of 8 May.

graph (Chart 20) shows the evolution of minutes of mobile termination according to service provider.

Chart 20 - Evolution of mobile termination traffic per operator with its own network

[BCI]

[FIC] * Note: NOS data for 2013 incorporate the effects of the merger between Optimus and the ZON Group.

Source: ANACOM

Chart 21 - Evolution of mobile termination traffic per MVNO

[BCI]

[FIC]

Source: ANACOM

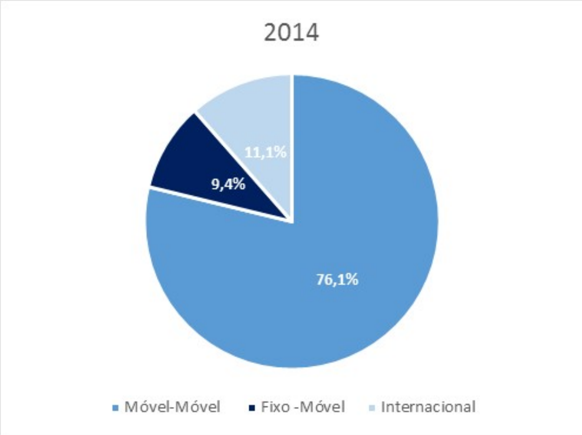
Although between 2010 and 2012 mobile termination traffic showed some stagnation, most providers registered as from 2013, and up to the 2nd quarter of 2017, a sharp and general increase of termination traffic, each of the three mobile operators with their own network having terminated in 2016 between 2800 and 3800 million minutes.

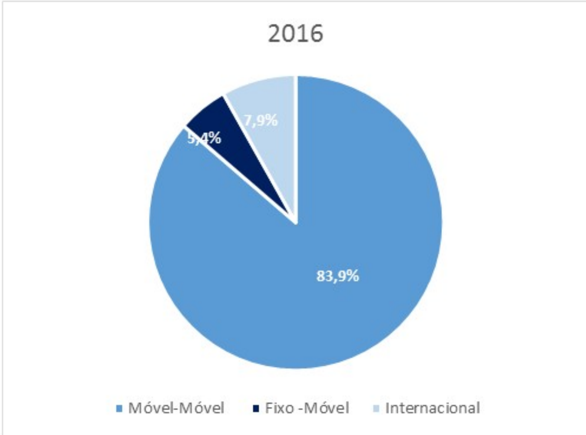
By the end of the period under analysis, MEO was the operator which registered the most traffic (originated on other networks) terminated on its network and NOS the operator that showed the highest growth in terms of traffic termination between 2014 and 2016 (the number of minutes terminated on its network more than doubled).

The volume of mobile termination traffic of MVNO on the market remained in the period under analysis significantly below the level registered by operators with their own network. In average, and considering the period between the moment the first MVNO emerged in Portugal and the 2nd quarter of 2017, the volume of traffic terminated by this group of operators represents less than 2% of the volume of traffic terminated by operators of the mobile network. It is stressed, however, that this proportion increased as from 2016, to which the entry in the market of a new MVNO contributed a great deal.

It is deemed that the increasing integration of the MTS in bundled offers, and the fact that many of such offers include free mobile calls to all networks (all net), justifies the increase of mobile termination traffic. The dissemination of all net offers seems also to justify the evolution of the composition of termination traffic (Chart 22), the most significant proportion still corresponding to traffic terminated with origin on mobile networks, which increased, since the last market review (2014), by around 8 p.p.

Chart 22 - Structure of mobile termination traffic per type of termination, 2014 and 2016





Source: ANACOM

As regards termination revenues, given the reduction of termination rates imposed by ANACOM in 2010 and 2012, and bearing in mind the decreasing evolution of traffic in that period, a decrease of termination revenues and, as such, of costs incurred by purchasers of the service, took place in the period between 2010 and 2013. Notwithstanding, in view of the increase of termination traffic registered as from 2013, revenues of the service and, consequently, overall costs of purchasers of the service, increased once more, a trend which however began to reverse with the imposition of new termination rates in 2015 and its update in 2016 (and 2017).

As EC itself acknowledges[79], although it is considered that monopolistic market shares (100%) are in themselves a strong indication of SMP power, their existence does not necessarily mean that all operators hold SMP, and other factors able to limit that market power, which are analysed below, must also be assessed.

[79] In this context, EC refers in the Explanatory Note that: "*While a 100% market share provides a very strong presumption of SMP, in accordance with competition law principles, a finding that there is no SMP may occur if there is sufficient countervailing buyer power, which would render any non-transitory price increase unprofitable.*" and that: "*(…) the fact that each operator is a monopolist on its own network does not automatically mean that it has significant market power, and that the extent to which countervailing buyer power effectively constrains the ability of terminating operators to charge excessive termination charges has to be assessed on a case-by-case basis in the context of the SMP assessment*" (p. 32).

5.1.2. Barriers to market entry

This section focuses on whether it is possible for a provider of electronic communications service to enter the relevant market, providing termination services on the network of another provider. This situation could call into question the existence of SMP, due either to the effective entry of a competitor on the market or to the threat of entry.

In theory, it could be possible to enter the relevant market of a body that provided mobile termination services, insofar as it invested in infrastructure that allowed termination services to be provided on the network of third parties. However, this hypothesis has never materialized, not is it foreseeable that it occurs in the short term, not only because there seem not to be technologies that allow it, but also because even if such technologies existed, it would be unlikely that an operator with 100% market share in its own relevant market would have incentive to invest in these technologies, knowing that, as such technologies would certainly be within the reach of its competitors, it would put at risk the monopolistic profits achieved in its own market.

Although this Authority considers, as discussed in Chapter 3, that OTT services are not part of the same product market and, as such, of the same relevant market, an alternative to a traditional voice call is the use of OTT apps to make voice calls. However, there is no evidence that these services restrict the provision of MTS, which, as demonstrated, continues to expand, or the price strategy of the provider of termination services.

It is thus concluded that, given the current technology and taking into account the period covered by this market review, it is unlikely that OTT services contribute to the reduction of market barriers in this market, questioning the presumption of dominance of providers of mobile termination services resulting from their market shares.

In short, as relevant markets were defined as voice call termination on each individual mobile network, and as such only the provider that controls the network elements required for interconnection purposes is able to provide termination of calls to its own customers, and given that at the moment there are no technical solutions to allow a termination service provided by an operator to be substituted for the termination service of another operator, an absolute structural barrier thus exists, preventing a potential entry of another operator in the market, so as to constrain termination rates.

5.1.3. Countervailing buying power

The ability of an operator to act independently of the demand addressed to it, that is, of its buyers, depends on its position in negotiations established with the latter. In general, the countervailing power of a buyer depends, on the one hand, on its own relative importance to the seller as regards its proportion on the total volume of calls terminated by that termination provider; and, on the other hand, on its ability to switch its provider, to significantly reduce its consumption or even to cease the use of the service, further to an increase of prices, thus constraining the setting of mobile termination rates on the part of the service provider.

However, in the wholesale mobile termination market, the ability to exert countervailing buying power presents some specificities that are characteristic of the environment in which the negotiation of termination rates takes place. On the one hand, MTS users value the mobility granted by this service, that is, the fact that they are available at all times, and that they may contact other users whenever required, regardless of the type of network they use, thus mobile operators must ensure their interconnection with other operators. On the other hand, although the provider of the wholesale mobile termination service enjoys a monopolistic position in the provision of this service, it is also a buyer of the equivalent termination service provided by other mobile operators and fixed operators. Any provider of the mobile termination service, mobile network operator or MVNO, will be thus required to negotiate with other mobile operators, as well as with fixed operators, the technical and economic conditions for termination on their own networks.

In this sense, negotiations take place in an environment of bilateral monopolies, where the countervailing power of each party is always minimized by the need to correspond to the expectations of its own customers that they will be able to make calls to all destinations, and where the capacity of a provider/buyer to exert pressure so as to constrain the setting of termination rates of other providers will be constrained by its own capacity to meet, in a credible and effective manner, the conditions imposed by the operator with whom it is negotiating, that is, its capacity to discourage that provider from exerting its monopolistic power.

Customers of wholesale mobile termination services include providers of fixed telephone services, international (fixed and mobile) operators and providers competing on the national retail mobile market. Just like in the last market review, the countervailing buying power that may be exerted by fixed providers is analysed first, followed by the analysis of the countervailing buying power of mobile providers.

5.1.3.1. Countervailing buying power of fixed providers

Wholesale mobile termination rates may be constrained by fixed providers where they have sufficient countervailing power to allow them, for example, to reject the delivery of calls on the mobile operator that provides the call termination service or, in the alternative, to threat to reject termination on the mobile operator or to increase their own termination rates so as to put pressure on a decrease of mobile termination rates.

The degree of the countervailing power of each mobile or fixed provider when negotiating with third parties varies to some extent, however, a detailed analysis of each bilateral negotiation is impractical or even impossible. This Authority thus considers it appropriate to start by assessing the fixed provider that would be best placed to exert some countervailing power on mobile providers, that is, the fixed provider with the largest customer database, MEO. Being the largest fixed provider, the negotiations established by MEO with providers of mobile termination (in the scope of the determination of termination rates) set out an important point of reference to influence the behaviour of other providers of electronic communications services that negotiate with wholesale mobile termination providers.

However, it is deemed unlikely that MEO has enough countervailing power to prevent a mobile provider to act, to a large extent, independently of its competitors. This is primarily due to the fact that MEO is limited in its capacity to use its own fixed termination rates as bargaining chip, as the latter, under the decision on the definition and review of the market for fixed termination[80], are limited by regulation. For the same reason, although MEO is the most important, and in some cases, the only wholesale provider of access infrastructures, many of these services are regulated (rates included), thus MEO's capacity to use them a key factor in negotiations is also severely handicapped.

Obligations referred above, especially the one that refers to the definition and review of the fixed termination market and price ceilings of termination on fixed networks, do not constrain MEO only. In fact, according to the "*modified greenfield approach*", that is, on the basis of a scenario of absence of regulation in the reviewed market, but bearing in mind current obligations in other markets, it can be noted that the existence of *ex ante* obligations imposed on fixed operators weakens their countervailing power, given that these providers are not able to threaten the increase of their own termination rates in a credible way, thus mobile providers do not face sufficient countervailing power from fixed operators so as to eliminate their ability to behave as monopoly companies in the market for termination on their own networks.

Moreover, any operator, regardless of the size of its customer database, seeks to provide or must even ensure to its customers a general access to all customers of other operators, being also required to ensure interoperability of services, thus its capacity to exercise in a credible way any of the above-mentioned possible threats would remain subdued.

It is noted also that MEO holds, in parallel with its fixed operation, its own mobile operation also, and as such, any pressure on providers of the call termination service would only make sense relatively to other providers and not to its own operation. Other mobile providers, at least the larger ones (excluding MVNO), also hold fixed operations, thus as providers at a fixed location, they would only have an interest in exercising any pressure as purchasers of the call termination service as far as offers made by third party operators were concerned.

As such, fixed providers who simultaneously have mobile and fixed operations of a significant size will have no incentive to exert pressure in order to decrease mobile

[80] Last decision on the wholesale market for call termination on the public telephone network at a fixed location, available at:
https://www.anacom.pt/streaming/DecisaoM1_Publico21dezembro2016.pdf?contentId=1401528&field=ATTACHED_FILE.

termination rates, given that, contrary to fixed providers who do not have any mobile operation, such decrease of prices would not necessarily be to their benefit. As such, it is noted that fixed operators that would be most interested in exercising any countervailing power would be providers with no mobile operations, who, on their turn, are also the smallest providers on the market. Consequently, even if they were able to exert any competitive pressure as purchasers of mobile termination services, such capacity would be fairly limited.

Without prejudice to observations above, it is stressed that there is no record of any situation where mobile termination rates decreased as a result of pressure exerted by fixed providers, notwithstanding the critics of the latter as regards differentials that exist between the two types of termination.

It should also be referred that another means of pressure could be exerted on mobile operators by fixed operators, national or international, if the latter increased substantially retail rates of calls terminated on mobile operators. However, this strategy would only be successful if all operators acted in concert to raise their retail prices at the level of all tariffs, otherwise, the customer would easily opt for switching operators.

In conclusion, it is deemed that, in the absence of regulation, the countervailing power of providers with an operation at a fixed location is insufficient to constrain the behaviour of providers of wholesale mobile termination services, and to limit, in this way, their capacity to act independently of its customers, competitors and consumers. That is, in the absence of regulation, all mobile operators would have the incentive and ability to set excessive termination rates, the presumption that providers operating on the wholesale market for mobile call termination have SMP thus remaining.

5.1.3.2. Countervailing power of mobile providers

In retail mobile communications markets, historically, competition between operators resulted in the creation of tariff structures characterized by lower rates to on-net calls and higher rates to off-net calls, so that network economies could be operated. With this strategy, mobile operators sought to reach an increasing customer database to make the decision to remain in their own networks more appealing, which generated a virtuous circle (typical of markets with network externalities) that enabled them to strengthen their competitive capacity.

Given that the call termination service operates in a reciprocal manner, where providers that purchase termination also sell the same service to other providers that compete on the same retail markets, above-mentioned practises are likely to bring about traffic imbalances that, associated to high mobile termination rates, led the smaller operators on the market to suffer an unjustified competitive disadvantage on the retail market compared to larger operators.

As such, in the absence of *ex ante* regulation, operators with higher market shares would have the incentive to set symmetrical and high termination rates, exploring strategies that differentiate on-net and off-net call prices and the resulting competitive advantages over smaller operators.

As demonstrated in Chapter 2, notwithstanding the gradual removal of the tariff differentiation between on-net and off-net calls or, in other words, the loss of relevance of artificial network externalities that favoured operators with larger market shares, for which, this Authority believes, the regulation of mobile termination rates has contributed, the weight of on-net calls in the total of traffic to the group of operators with their own network continues to exceed the weight of off-net traffic as well as the proportion of on-net traffic of smaller operators (MVNO).

In the light of the above, in the scope of a purely commercial negotiation, there are diverging interests as to the level at which termination rates are to be set, thus making it hard for low and cost-oriented rates to be reached, which in general is only in the interest of smaller operators, who are net payers of mobile termination.

Moreover, it is noted that the reduction of termination rates in Portugal has been always due to regulatory pressure, not to the negotiation of interconnection agreements between operators, which consequently leads to the conclusion that mobile operators do not have sufficient countervailing power to drive down mobile termination rates.

As such, as mentioned earlier as regards the countervailing power of fixed providers as purchasers of the mobile call termination service, it is also concluded in this scope that providers operating on the wholesale market of mobile call termination have SMP, that is, the ability to act independently of their competitors, customers and consumers.

5.1.4. Evolution of termination rates

In line with findings in earlier market reviews, in the absence of sector regulation and in the presence of SMP, operators on voice call termination markets continued to have incentives to act, to a large extent, independently of their competitors, customers and consumers. As such, bearing in mind the competition problems that affect end consumers and operators in wholesale markets for voice call termination on individual mobile networks and related markets in the absence of regulation, this Authority took the view, in the review that led to the Decision of 2015, that the need for its intervention remained, through the imposition, among other measures, of a reduction of mobile termination rates, to prevent potential distortion.

ANACOM thus adopted in 2015, and in line with EC Recommendation 2009/396/EC, of 07.05.2009, on the regulatory treatment of fixed and mobile termination rates in the European Union (Recommendation on Termination)[81], a "pure" LRIC cost methodology (since December 2012, price ceilings for mobile termination have been set on the basis of this model) and determined that, as from 06.08.2015, price ceilings for voice call termination on mobile networks to be applied by mobile operators identified with SMP would be 0.83 cents per minute, with subsequent updates in July 2016 and 2017, price ceilings being set at 0.81 cents per minute as from 01.07.2016 and 0.75 cents per minute as from 01.07.2017, whereby termination rates adopted in Portugal decreased by more than 40% compared to the value in force by the end of 2012 (1.27 cents per minute).

It is noted that, more than 3 years after the 2015 market and cost model reviews, there has been no voluntary decrease of termination rates, which in this period remained always in the maximum limit set out in that determination. This situation was formerly the case also, no reduction of termination rates having ever been registered other than that imposed by regulatory pressure. This fact strengthens the presumption of SMP held by providers in the

[81] Available at http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:124:0067:0074:EN:PDF.

market, adding to the presumption that results from the fact that these providers are monopolistic in the provision of the wholesale call termination service.

5.2. Forward-looking analysis

In the light of factors mentioned above, that point towards the designation of companies that operate in the wholesale market for voice call termination on individual mobile markets as companies with SMP, ANACOM deems that there is no evidence, until the next assessment of SMP, in the short/medium term, that there may be any changes in termination markets that may have a significant impact on the existing dynamics and factors indicated.

5.3. SMP assessment: Conclusion

In the light of the above, ANACOM considers that all providers of voice call termination on individual mobile networks have SMP on this market, such providers including both mobile operators with their own network and virtual mobile operators (MVNO).

This conclusion is supported on the fact that each provider has a monopolistic position with respect to the provision of call termination on its own mobile network (100% share), the existence of high barriers to entry, the evidence that termination rates only decrease further to regulatory intervention and the absence of significant countervailing power on the part of other providers, able to limit the capacity of mobile providers to act independently from them. As such, in the absence of *ex ante* regulation, it is deemed that these operators have conditions and incentives to act to a large extent independently of competitors and customers and to practise excessive termination rates, thereby increasing their revenues and costs of competitors.

It is noted that some companies that provide mobile services in the retail market, and who hold numbering resources for this purpose, may in fact not earn at wholesale level any call termination revenues. This scenario may occur as a result of the agreement between the referred providers (MVNO) and third parties over whose networks their activity is supported, whereby revenues that arise from the provision of call termination on numbers of the provider that supplies the retail service belong to the supporting provider.

However, as concluded in the last market review, it is deemed that providing mobile communications services and holding the corresponding numbering resources grant the provider the power to act and to control call termination on those numbers, at the level of termination rates that are applied, regardless of the type of contract concluded with the operator of the supporting network, which in fact may even be amended over time or subsequently replaced for a provision fully supported on the provider's own network.

As such, providers identified as having SMP on the market under consideration are as follows:

- CTT – Correios de Portugal, S.A.;
- Lycamobile Portugal, Lda.;
- MEO – Serviços de Comunicações e Multimédia, S.A.;
- Vectone Mobile (Portugal) Limited;
- NOS Comunicações, S.A.;
- NOWO Communications, S.A.;
- OniTelecom – Infocomunicações, S. A.;
- Vodafone Portugal – Comunicações Pessoais, S.A..

Without prejudice to the need for new market reviews focusing on providers of mobile communications services (network operators or MVNO) who start operations after this decision is approved, ANACOM will in principle consider, in case it is required to intervene before the referred reviews are carried out, under the dispute settlement procedure provided for in articles 10 to 12 of ECL, namely as regards the provision of wholesale voice call termination service, including wholesale rates of mobile voice termination charged by the referred providers, that obligations imposed in this review constitute the appropriate reference for decisions to be adopted in that context as far as new entrants are concerned.

6. Assessment of the need to impose, maintain, amend or withdraw *ex ante* regulatory obligations on the market for voice call termination on individual mobile networks

In the previous sections, the wholesale market for voice call termination on individual mobile networks was identified and reviewed, having been concluded that all providers of the referred wholesale call termination market have SMP in the respective markets.

In markets where SMP is considered to exist, ANACOM is required to impose one or more regulatory obligations, or to maintain or amend such obligations where they already exist[82]. In this context, it is relevant that market failures are addressed through measures imposed directly at their source, a principle which is in fact laid down in the regulatory framework[83], whereby priority is given to the imposition of obligations on wholesale markets instead of downstream retail markets.

In overall terms, when imposing, amending and withdrawing obligations, ANACOM takes certain principles into consideration which result from the application of ECL, documents issued by the European Commission and ERG/BEREC, as well as, obviously, regulatory principles and objectives established by this Regulatory Authority.

It is deemed appropriate that these principles are understood and taken into consideration before any obligation is imposed (amended or withdrawn) on the market.

6.1. Principles to be considered when imposing, amending and withdrawing obligations

In order to minimise or remove competition concerns that exist in a given market, ANACOM must impose on companies with SMP, in implementation of paragraph 2 of article 66 of ECL, the obligations which it deems to be most appropriate, ensuring that these obligations fulfil certain requirements, including that they:

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[82] Cfr. Guidelines §21and §114 and article 56, point d), and article 59, paragraph 4, of ECL.

[83] Cfr. point b) of paragraph 1 of article 85 of ECL.

- Are appropriate to the nature of the competition problem identified at the stage of SMP assessment, and are proportional and justified in the light of regulatory objectives set forth in article 5 of ECL (article 55, paragraph 3 a) of ECL);

- Are objectively justified in respect of the networks, services or infrastructures to which they refer (article 55, paragraph 3 b) of ECL);

- Do not result in undue discrimination in respect of any entity (article 55, paragraph 3 c) of ECL);

- Are transparent in regard to their purpose (article 55, paragraph 3 d) of ECL).

Consequently, it is incumbent on ANACOM, in strict compliance with the national regulatory framework and Community Directives, to adopt a proportional and duly justified intervention, imposing the minimum obligations required to overcome the identified competition concerns and that contribute effectively to the development of competition.

ANACOM's ultimate regulatory objective is to promote competition in the provision of electronic communications networks and services, and associated facilities and services, to contribute to the development of the internal market of the EU and to protect the interests of citizens[84]. In this scope, ANACOM must, in particular, ensure that users derive maximum benefit in terms of choice, price and quality, guarantee that there is no distortion or restriction of competition in the electronic communications sector, and encourage efficient investment and innovation in new and improved infrastructure.

For this purpose, under articles 67 to 76 of ECL, obligations that could be imposed on bodies with SMP in identified relevant markets are as follows:

- Transparency in relation to the publication of information, including reference offers;

- Non-discrimination in the provision of access and interconnection and in the respective provision of services and information;

[84] Cfr. ECL, article 5.

- Accounting separation in respect of specific activities related to access and interconnection;
- Access to and use of specific network elements and associated facilities;
- Price control and cost accounting.

Where the NRA concludes that obligations imposed under articles 67 to 76 have failed to achieve effective competition and that there are important and persisting competition problems or relevant market failures identified in relation to the wholesale provision of certain access product markets, the Authority, as an exceptional measure, in accordance with paragraph 4 of article 76-A, may impose on vertically integrated companies an obligation for functional separation[85].

In the definition of obligations, particularly as regards the obligation for price control and cost accounting in wholesale call termination markets, EC Recommendation on Termination is taken into consideration. This Recommendation seeks to address significant differences identified among Member States as regards the regulation of voice call termination rates and price control measures, namely as regards the variety of cost methodologies adopted, aiming to remove asymmetries of termination rates charged by the various operators and to reduce these rates so as to eliminate competition distortions promoted by above-cost prices.

In this scope, EC recommends the imposition of an obligation for cost-orientation of prices, proposing, to assess the cost incurred by an efficient operator, the long-run incremental cost methodology, based on a bottom-up model, which takes only into account avoidable costs related to the termination service offer (pure BU-LRIC approach).

In the analysis and definition of obligations to be imposed (amended or withdrawn), account is also taken, as referred earlier, of principles established in the ERG Common Position on

[85] Cfr. paragraph 1 b) of article 66 and article 76-A.

this matter, presented in the document “Revised ERG Common Position on the approach to appropriate remedies in the ECNS regulatory framework” [86], of May 2006.

6.2. Regulatory obligations currently in force in wholesale markets for voice call termination on individual mobile networks

In the 2015 Decision, ANACOM concluded that all providers of the wholesale call termination service have SMP in the respective markets, and determined, in this scope, to impose the following obligations:

- To meet reasonable requests for access;
- Not to discriminate in the offer of access and interconnection, and in the respective provision of information;
- Transparency in the publication of information;
- Price control.

A new decrease of termination rates was also determined, based on the results of a cost model according to the “pure” LRIC methodology, in compliance with the Recommendation on Termination, approved by ANACOM on the same date. In this context, bearing in mind the results of the “pure” LRIC cost model, ANACOM set a termination price ceiling of 0.83 cents per minute, for calls originated on the EEA, on the basis of per second billing throughout the call. In addition, it was determined that in 2016 and 2017 price ceilings would be updated, on the basis also of the cost model results, new price ceilings having taken effect on 01.07.2016 (0.81 cents per minute) and on 01.07.2017 (0.75 cents per minute).

ANACOM identifies below the competition problems associated to these markets, and, on the basis of regulatory obligations that are currently in force, imposed under the former market review, the Authority identifies obligations that should be maintained, amended or withdrawn and any new obligations to be imposed, where justified.

[86] ERG(06)33, of May 2006, available at: https://pfs.is/upload/files/erg_06_33_remedies_common_position_june_06.pdf.

6.3. Identification of competition problems in relevant markets

Previous market reviews identified a group of potential competition problems that can arise in a scenario of absence of regulation, including refusals of access and/or negotiation intended to obtain voice call termination services, the high asymmetry of on-net/off-net prices that, associated to above-cost termination prices, contributes to reinforce network effects (the so-called tariff-mediated network effects) to the detriment of smaller operators and consumers, as well as distortions between mobile and fixed networks.

The existence of providers with SMP, the establishment of the existence of competition problems and their persistence over time, added to the fact that providers under consideration only decrease termination prices further to regulatory determination, justified, from 2005 to the present day, the regulation of termination rates, which have been set on the basis of results of the “pure” LRIC cost model.

It must now be assessed to what extent the referred competition problems remain and, in this framework, to what extent it is justified to maintain the current regulation defined further to the review carried out in 2015, including the review of price ceilings set on the basis of results of the “pure” LRIC cost model, duly updated, in order to maintain such price ceilings at levels that are sufficiently low not to encourage competition distortions, and to contribute to a framework of static and dynamic efficiency.

6.3.1. Refusal (or delay) to negotiate and/or to grant access

The voice termination service is a vital input for the provision of voice call services in corresponding retail markets. In a non-regulated scenario, it is deemed that there would be strong and persistent incentives in the termination market for providers with SMP to refuse or delay and create problems to the supply of access. These practises may include tactics to delay negotiations, unreasonable terms and conditions associated to the intended access, but could also include the unjustified withdrawal of access already granted.

A vertically integrated operator with SMP in the relevant market, and especially with a significant presence in downstream retail markets (which is the case of the three main operators holding their own networks in Portugal), is able, and has incentives, to use its market power to affect the competitive dynamics in retail markets where other providers depend on termination to ensure the voice service to their subscribers.

The refusal or creation of barriers to access will be more damaging to smaller providers or to any new entrants, given their smaller customer database, which makes interconnection with other networks even more essential.

In this context, in the absence of an obligation to meet reasonable requests for access, providers identified with SMP in relevant markets under analysis could reject the negotiation and/or access to their networks (or to supply access under unreasonable conditions), thus excluding smaller providers or preventing the entry of new providers in retail markets, which is restrictive of free competition.

It must be noted that a provider whose interconnection request is rejected or subject to unreasonable conditions could resort to transit operators. In a way, this possibility could decrease damages resulting from that refusal, however it could be more favourable to the provider to interconnect directly with the provider of mobile termination services that prevents this access, given that, in principle, the cost of the call would be lower. This option would also be less convenient to end-users, given that the provider would have to pass on the higher costs of using a transit operator in its retail prices. Moreover, it should be stressed that the mobile termination provider could also refuse to supply access, under fair and reasonable conditions, to one or more transit operators.

6.3.2. Distortions caused by excessive termination rates

Given that, in markets concerned, each provider monopolizes call termination on their own networks, their ability, in the absence of regulation, to set above-cost termination rates, leading to the existence of excessive termination rates[87], is inherently one of the most relevant competition problems[88].

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[87] According to the definition established by the European Competition Law, *excessive pricing* refers to the situation where prices charged by a dominant company in the market (that is, a company with SMP) are not closely related to the value that the relevant service holds for the consumer and/or with the cost of producing or supplying that service. *Vide* Judgment of the Court of 14 February 1978, Case 27/76 United Brands, available at: http://curia.europa.eu/juris/showPdf.jsf?text=&docid=89300&pageIndex=0&doclang=PT&mode=lst&dir.

[88] In the Recommendation on Termination, EC refers that, in the case of call termination, *"excessive pricing is the main competition concern of regulatory authorities."* – paragraph 7.

Considering that the termination rate is one of the components of the marginal cost that each provider bears for each minute of calls to customers of other networks, this means that excessive termination rates will necessarily affect retail prices of off-net voice calls made by end consumers. As such, the setting of excessive termination rates allows mobile providers to earn excessive profit from the provision of this service by directly overcharging other providers, and, indirectly, customers of other providers.

As a result, given that these providers have the ability and incentives to charge other providers high termination rates, this could cause competitive distortions in downstream retail markets, where they operate themselves, thus leveraging their position to the detriment of other mobile providers, especially the smaller ones, or of fixed providers, and resulting, ultimately, in the increase of retail prices to the detriment of end consumers.

The setting of excessive prices may also discourage productive efficiency and innovation, given that, when prices are set at such a level, it becomes possible to recover more than costs incurred, thus providers may not feel so acutely the need to minimize costs in other areas of activity. For example, the investment in infrastructures may decrease.

It could be argued that if mobile providers set excessive termination rates, they are able to obtain revenues that are returned to end consumers in the retail market via incentives to the purchase of mobile services, such as the subsidisation of equipment, or the reduction of retail call rates. In addition, some economic literature refers it is possible that the decrease of wholesale mobile termination rates could foster the increase of retail rates, in the attempt to compensate the loss of mobile termination revenues with the increase of revenues from retail services (the so-called the “waterbed” effect).

ANACOM considers, on the one hand, that even if profit gained as a result of excessive prices were transferred to the retail market, which is deemed not to occur, the existence of high prices would continue to be to the detriment of consumers, as it distorts competition in downstream retail markets. On the other hand, there is no evidence that indicates clearly that the waterbed effect has ever taken place in these markets.

a) Distortions in consumer choice and static economic efficiency

As referred earlier, the retail price of a call incorporates also the marginal cost incurred in by each provider for each minute of calls to clients of other networks, thus retail prices of off-net voice calls of end consumers will tend to reflect increases of wholesale prices.

In mobile-to-mobile calls, high mobile termination prices tend to generate higher prices to off-net calls than to on-net calls, which distorts consumer choice between the two types of calls that could lead to changes in traffic patterns. This situation, commonly referred to as tariff-mediated network externality, is one of the most relevant distortions in termination markets, which results, in the presence of tariff discrimination, in greater benefits for customers of mobile providers with a larger client database, which means that clients opt for making on-net calls, however this choice does not truly reflect marginal costs of services concerned, static inefficiency thus being generated.

These distortions also affect consumption patterns of FTS clients, given that excessive prices applied to fixed-to-mobile call termination grant mobile providers sufficient revenues to subsidize their own business, namely their on-net calls, inducing an excessive use of mobile services, to the detriment of fixed services. Where relative rates do not reflect real differences in marginal costs of the two services, consumer choice is distorted and static inefficiency is generated, which would always take place, regardless of the situation in mobile markets.

It is noted, in this scenario, that even if excessive profits earned by mobile providers were fully used in downstream competition (in the retail market), the resulting price structure, both in the retail and in the wholesale market, would probably be inefficient, distorting consumer choices and undermining their interests, given that some services would be consumed in excess of the efficient level and other services less than the efficient level (by comparison to the situation where rates reflect the real costs of the service provision).

However, it must be stressed that, in Portugal, the price difference between on-net/off-net calls has been losing its relevance in the light of the imposition by ANACOM of wholesale termination rates set on the basis of the “pure” LRIC model, both in the wholesale market for mobile termination and for fixed termination, thus distortions resulting from this differentiation have been gradually mitigated. In fact, and as referred earlier, termination rates at levels based on results of the “pure” LRIC cost model have contributed to the launch of new retail offers that, for their characteristics, led to a reduction of price differentials between on-net and off-net calls.

Notwithstanding, it is deemed that, without *ex ante* regulation, and bearing in mind the market structure already analysed in Chapter 2, termination prices would not remain at current levels and would tend to increase. It is thus necessary that termination rates remain at levels where they do not lead larger operators to generate artificial network economies based on on-net/off-net differentiation, that is, at levels that are sufficiently low so as not to create static inefficiencies.

b) Competition distortions in mobile markets

In the presence of a sharp on-net and off-net tariff differentiation, when users are faced with the decision to choose a provider, they will opt for the one that allows a higher proportion of on-net (cheaper) calls to be made, meaning, all other things being equal, and considering network economies that are typical of these markets, a provider with the largest number of customers. As such, it is observed that, in the absence of regulation, a provider with a large customer database has always the incentive to increase the wholesale termination price charged to other operators, charging at the same time, internally, lower prices for an equivalent service, which means that it has incentives to maintain a high degree of tariff differentiation between on-net and off-net calls so as to reinforce existing network externalities.

This tariff differentiation strategy mainly brings about a general increase of costs of off-net calls that, given the larger customer database of a large provider, leads to an artificial increase in the volume of on-net calls to that type of providers, reason for which, under these conditions, the average cost of communications of smaller providers is higher as a result of the heavier weight of off-net calls in the traffic structure of those providers. Given that larger providers would face lower termination costs compared to their competitors, they could pass on the excessive profit of the wholesale service to the retail market by charging more appealing tariffs, thus feeding a vicious circle of network economies.

Smaller providers would thus have their competitive ability seriously affected, due to the difficulty in attracting, maintaining and expanding their customer database, thus being affected twice by differentiation strategies combined with termination rates above costs, not only because they have a lower competitive capacity, but because the approach that could lead to the problem solution involves the increase of the traffic imbalance. It is noted that, frequently, the effort to attract customers frequently forces the reduction of off-net prices so that the choice for a larger or a smaller provider becomes indifferent to customers. However, this rate reduction results in a traffic imbalance, to the detriment of the smaller provider, which, associated to above-cost termination rates, creates important financial imbalances at the expense of smaller operators.

It is stressed also that these strategies reduce the attractiveness of the business, discouraging the entry or expansion of other mobile providers on the market.

The high tariff differentiation between on-net and off-net calls, based on above-cost termination rates, thus generates, without prejudice to distortions identified at the level of static efficiency, also distortions at the level of dynamic efficiency, creating a negative impact on smaller providers, and entailing important barriers to the entry of new operators and, ultimately, jeopardising also consumers, given that, by virtue of the lower level of competition, their ability to choose is restricted given the reduction of offers on the market. In this context, and in order to preclude the emergence or expansion of this type of distortions, it is essential to maintain termination rates at the level of long-run incremental costs.

c) Competition distortions between fixed and mobile markets

Competition distortions that were identified also affect fixed markets, given that, if mobile providers were able, in the absence of regulation, to set excessive termination rates, while fixed providers, subject to regulation, were forced to set cost-oriented termination rates, this would result in a transfer of value from fixed to mobile providers, in the scope of which fixed providers would bear excessive costs of providing the fixed-to-mobile call service, which would ultimately be passed on to the end consumer.

This transfer of value from fixed to mobile providers was particularly relevant in Portugal due to the combination of traffic imbalance - fixed-to-mobile traffic was always greater than mobile-to-fixed traffic - and the fact that mobile termination rates were always higher than fixed termination rates.

The setting of rates at the level of “pure” LRIC costs has subdued the impact of these competitive distortions and contributed to the reduction of net transfers from the fixed to the mobile service. Even following significant decreases of fixed and mobile termination rates, the value of these transfers in 2014 amounted to around seven million Euros per year, and in 2016, further to the new update of termination price ceilings at the level of incremental costs occurred in 2015, as well as changes of traffic patterns (increase of mobile-to-fixed traffic and decrease of fixed-to-mobile traffic), this differential decreased to around four million euros per year.

The practise of above-cost termination pricing is more relevant in a market where large operators have integrated operations and are active in fixed and mobile retail markets, as is the case in Portugal. In the national context, where the retail market is characterized, as seen earlier, by a significant increase of bundled offers, the competitive ability of fixed providers with no mobile operations is particularly jeopardized.

It thus follows that, in the absence of regulation, mobile providers have the incentive and ability to increase the price of the wholesale termination service, imposing an unjustified increment on costs of fixed service providers, who supply a service that is potentially an alternative to mobile calls, or also, in the current context of bundled offers that include the provision of fixed and mobile voice services, making converging products unjustifiably more expensive. It is thus important that the cost model that sets mobile termination rates at the level of the long-run incremental costs of an efficient operator is maintained up-to-date, so as to ensure that prices ceilings correspond to costs of providing the mobile termination service.

6.3.3. Other distortions caused by price discrimination and lack of transparency

In the absence of regulation, SMP providers could exert their market power for exclusion purposes by using discriminatory practises, both at the level of prices and of the quality of service provided, aimed at other providers, jeopardizing in particular smaller providers and hindering new entries in the market. SMP providers could specifically charge higher mobile termination rates and/or supply a lower quality of service to smaller providers or potential new entrants to create barriers to expansion or to the entry of these bodies.

The lack of transparency would also enable termination service providers to tailor their rates according to providers to whom services are supplied. This conduct could facilitate exploiting market power, both by achieving higher revenues, and by facilitating certain price-excluding practises (for example, as referred in the preceding paragraph, price discrimination against new competitors or smaller providers). Although, in theory, the definition of a different price for each purchaser may be efficient (where the marginal customer is able to pay the incremental cost), these prices may result in a great transfer of economic surplus from purchasers to suppliers. Even if some of this imbalance is attenuated in retail markets, these pricing practises in mobile termination markets could distort competition and the efficient behaviour of consumers.

The lack of clarity and certainty with regards to mobile termination rates means that origin or transit providers who require the mobile termination service face uncertainty as to the costs they incur in - especially if there are no other ways of price regulation. This increased risk - caused by the uncertainty about the termination rates to be paid - could harm consumers where providers requiring mobile termination services decided to mitigate this financial risk by increasing their own rates. For example, an electronic communications service provider could react to this financial risk by excluding from its bundled offers calls to mobile numbers with unclear or uncertain termination rates. On its turn, this could result in undesirable consequences for consumers, such as bill shock. The greatest financial risk resulting from tariff certainty could also prevent the market entry of new providers.

6.3.4. Conclusion

ANACOM's review has indicated that each of the providers of the mobile termination service operating in wholesale mobile termination markets has SMP. This Authority's analysis suggests, in addition, that in the absence of regulation each of the providers indicated as having SMP would have the ability to influence several competition parameters, including prices, innovation and a variety or quality of goods and services provided. It would specifically have the incentive, by exploiting its control over inputs of the mobile termination service, to incur in leveraging strategies, based on the setting of excessive pricing and other factors (such as the decrease of the quality of service provided), intended to increase the costs of FTS and MTS competitors, in related downstream markets. On their turn, these practises lead to pricing structures that are necessarily less efficient, both at retail and at wholesale level, causing competition distortions, especially the increase of market barriers and the decrease of competition in downstream markets, which would be harmful for smaller providers on the mobile market, providers operating on the fixed market and, ultimately, consumers, both in terms of higher prices and of lower levels of choice and innovation.

It is thus concluded that, in the absence of regulation, competition problems identified above not only have impact on the allocation of resources (allocation of static efficiency), but are also detrimental at the level of competition on downstream markets (thereby affecting dynamic efficiency).

As such, taking into account the principles invoked above, with a particular focus on whether measures to be applied are appropriate for dealing with or for mitigating competition concerns to be addressed, the following sections analyse regulatory obligations currently in force, so as to assess whether they should be maintained, amended or withdrawn.

6.4. Imposition of obligations on markets for voice call termination on individual mobile networks

6.4.1. Obligation to meet reasonable requests for access (article 72 of ECL)

Article 72, paragraph 1, of ECL, lays down that ANACOM may impose on operators with SMP the obligation "*to meet reasonable requests for access to and use of specific network components and associated facilities, particularly in situations where the denial of access or the setting of unreasonable conditions would hinder the emergence of a sustainable competitive market at retail level or harm the interests of end users*". This obligation was imposed in the scope of the 2015 Decision, and ANACOM maintains its view that this obligation is required to prevent situations of unjustified refusal of negotiation and/or access.

The termination service is an essential input for the provision of retail services, both mobile and fixed, whereby providers depend on access to the network of SMP operators to ensure that their customers are able to make voice calls to customers of providers that supply the termination service.

As referred in point 6.3, in the absence of this obligation, SMP providers have the ability and incentive to refuse or limit access to the network by imposing unreasonable call termination conditions, thus constraining the action of other providers on the market and leveraging their own position on downstream retail markets of this wholesale market, to the detriment of other providers and end consumers.

Although it is acknowledged that smaller operators have lower incentive than larger operators to deny or limit access, it is deemed that the obligation for access should be imposed on all providers, regardless of their customer database. Even providers with less customers could refuse access or create difficulties to other providers in order to impose a high termination rate, which does not reflect the cost associated to the provision of the termination service, or create difficulties to providers of the same size that are its direct competitors in retail markets.

In this context, it is deemed that it is reasonable and appropriate to maintain the obligation to meet reasonable requests for access on all operators designated as having SMP in this market, under fair and reasonable conditions. This obligation is considered to be proportional, as it is required to ensure competition in downstream markets, without requiring unreasonable requests to be met; it is not discriminatory, as it is applied on all operators with SMP; it is transparent, given that the purposes of the proposed measure have been identified; and it is objectively justified given that it is a fundamental measure to ensure the competitive dynamics in downstream retail markets of wholesale markets for voice call termination on individual mobile network, to the benefit of providers of voice services and end consumers. The obligation concerned thus fulfils the regulatory objectives defined in article 5 of ECL and meets conditions defined in paragraph 3 of article 55 of the same statutory instrument.

Moreover, given that this is an obligation which has been in force for many years, its imposition is feasible, its technical and economic viability having been already demonstrated, and no questions remain regarding any risks in terms of the investment made for the provision of access. ANACOM does not expect any material limitation to arise that could hinder the compliance with the obligation for access on the part of operators with SMP.

Where ANACOM finds that it is necessary and appropriate to define specific conditions with respect to the implementation of this obligation, the Authority may determine them in a separate decision, which would naturally be the subject of the applicable consultation procedure.

6.4.2. Non-discrimination in the offer of access and interconnection and in the respective provision of information (article 70 of ECL)

Article 70 of ECL lays down that the obligation of non-discrimination consists of the "*requirement for a company to apply equivalent conditions in equivalent circumstances to other companies providing equivalent services and to provide services and information to third parties under the same conditions and with the same quality as services and information provided to its own departments or to those of its subsidiaries or partners*." In the 2015 Decision, ANACOM imposed the obligation of non-discrimination in the offer of access and interconnection, and in the respective provision of information, considering that operators with SMP in markets for voice call termination on individual mobile networks should not discriminate between different purchasers of services for voice call termination on mobile networks that are in equivalent circumstances.

The imposition of an obligation for non-discrimination seeks to prevent that companies with SMP adopt discriminatory behaviour, perhaps by means of its pricing policy or by providing services of a lower quality, that call into question the sustainable and effective development of competition of downstream retail markets.

The obligation for non-discrimination thus guarantees that a provider with SMP applies equivalent conditions to other operators supplying equivalent services and that it provides to third parties services and information with the same quality that is ensured to its own services or to those of its subsidiaries.

In this context, ANACOM finds that it remains justified, appropriate and proportional to maintain the non-discrimination obligation in the provision of wholesale call termination services for all operators with SMP in markets for voice call termination on individual mobile networks.

ANACOM maintains also its view that this measure should be interpreted so that the rates of call termination on mobile networks should be the same regardless of the origin of the call and irrespective of the operator delivering it to the operator with SMP, taking into account that the service provided is the same. Termination rates must also be independent from purchasers of the service, this obligation not applying to calls from outside the EEA, bearing in mind Chapter 6.4.4.3. Without prejudice, it must be guaranteed that the service is provided in a non-discriminatory manner, namely as far as the quality of service is concerned.

It is stressed also that this obligation does not prevent the provider of the call termination service from requiring from providers purchasing the service that voice calls that are delivered identify in some way the origin of the call or the caller.

This obligation implies also that termination of calls delivered by an operator on whom the call was not originated (transit traffic) must not be refused or hampered through the imposition of specific procedures or practises for the purpose. The non-discrimination obligation requires only that traffic delivered via transit is accepted, and does not constrain providers of the call termination service in the way how they deliver traffic belonging to them to third party operators, whereby they remain able to choose the means of interconnection, direct or transit, as they see fit.

ANACOM believes that the non-discrimination obligation remains appropriate and relevant to address identified competition problems, as it is, in line with article 5 of ECL, a mechanism that promotes competition and ensures maximum benefit for consumers, thus it should remain in the time horizon of the present review, applying to all operators with SMP on markets for voice call termination on individual mobile markets, except for calls originated outside the EEA.

It allows the fulfilment of conditions defined in article 55 of ECL, as it is a non-discriminatory, proportional, justified and transparent measure, which is applied on all operators with SMP, it ensures that purchasers of services concerned who are in equivalent circumstances are not discriminated, thus protects providers of retail electronic communications services and, consequently, end users.

Given that this obligation is already in force, is not a burdensome requirement for operators, and for the reasons set out above it is deemed to be appropriate as to its intended purpose, thus representing an important contribution to preventing the creation of competition distortions in downstream markets.

6.4.3. Transparency in the publication of information (article 67 of ECL)

Article 67 lays down that the obligation for transparency "*consists of the requirement to publish, in the appropriate form, information in relation to operator access and interconnection, such as accounting information, technical specifications, network characteristics, terms and conditions for supply and use, including prices and any conditions limiting access to or use of services and applications where such conditions are allowed by applicable law or regulations*."

The 2015 Decision imposed the obligation for transparency, thus maintaining the position taken in preceding years, stipulating that all providers with SMP must send to ANACOM, within 30 days from the notification of the decision on mobile termination markets, a copy of all interconnection agreements in force at the time, as well as to submit within 10 working days, after that deadline, any agreements that are concluded or amended, and to publish in advance, in their websites, rates of voice call termination on the respective mobile networks.

The transparency obligation helps other obligations, namely the non-discrimination obligation, to be rendered effective, as it ensures its effectiveness by enabling and expediting the detection of any discriminatory behaviour. It minimizes situations where it is difficult to obtain access to information or to provide differentiated information, thus facilitating access to mobile termination services provided with operators with SMP and promoting effective competition in downstream retail markets.

In the light of the above, ANACOM believes that the transparency obligation should be maintained, operators with SMP being required to provide purchasers of voice call termination on mobile networks, upon request, with all the information and specifications required for interconnection, including any alterations with significant impact whenever their implementation is planned. ANACOM maintains the position taken in previous decisions that there are no grounds for imposing a reference interconnection offer setting out the terms and conditions governing the provision of the termination service, bearing in mind that, without prejudice to the existence of SMP, and to competition problems that were identified, the offer has not been deemed to be essential so far, but instead it would impose an implementation cost that would not be negligible, and which is deemed not to be required, nor proportional, compared to the possible benefit of its application.

Notwithstanding, it is deemed that the obligation to publish rates of voice call termination on the respective networks, as well as any alterations thereto that are planned within a reasonable time in advance, should be maintained. The period of publication may be defined by ANACOM, where appropriate. Given that ANACOM determined the obligation to submit all existing interconnection agreements, and all amendments made to existing agreements, or new agreements concluded, it is deemed that it is not necessary to determine once again the submission of concluded agreements. Notwithstanding, new interconnection agreements that are concluded must be submitted with 10 days from the respective date of signature.

As such, ANACOM takes the view that there remains the need to maintain the obligation for transparency in the publication of information, as well as for the provision, in a timely manner and upon request from applicants for interconnection, of all information and technical specifications for interconnection, including amendments with significant impact, whenever their implementation is planned, as well as the obligation to send this Authority the copy of interconnection agreements that are subsequently concluded.

ANACOM believes that these obligations meet the regulatory objectives set out in article 5 of ECL, being not discriminatory, justified and proportional, as they apply to all providers with SMP and grant negotiations between providers with the essential predictability as regards conditions for interconnection, to the benefit of the competitive dynamics of retail markets and end consumers. Lastly, its application does not represent a disproportionate burden on targeted providers, as this is a measure which has already been implemented.

Taking account of the content of chapter 6.4.4.3, it is deemed that this obligation for publication of termination rates does not apply to the termination of calls from outside the EEA, however these calls are subject to other determinations that integrate this decision.

6.4.4. Price control (article 74 of ECL)

Article 74 determines that "*where a market analysis indicates that a potential lack of effective competition means that operators may sustain prices at an excessively high level, or may apply a price squeeze, to the detriment of end-users, the NRA may impose obligations relating to cost recovery and price controls, including obligations for cost-orientation of prices* (…)".

ANACOM believes that the provision of the voice call termination service is not subject to sufficiently strong competition pressures. As a result, in a hypothetical scenario of absence of regulation, providers would have the power and incentives to set rates at high levels, constraining competition in downstream retail markets, which this Authority considers to be detrimental to consumers in general and to the fixed and mobile market in particular.

Competition distortions that may be caused or promoted by above-cost termination rates may only be prevented through regulatory intervention, namely by maintaining regulated termination rates.

Previous obligations to meet reasonable requests for access, for non-discrimination and for transparency, although fundamental, as explained in preceding chapters, are not sufficient, however, to ensure the mitigation of the market power exercised by mobile operators, particularly in terms of termination pricing. The imposition of a price control obligation based on the principle of the cost-orientation of prices is thus considered to be essential, in order to guarantee efficient pricing, so as to remove competition distortions identified at the time, promoting efficiency to the benefit of end consumers.

In this context, the methodology deemed by ANACOM to be the most appropriate to determine cost-oriented termination rates is the one based exclusively on long-run incremental costs related to the provision of the termination service, which does not allow for the recovery of any common costs.

Bearing in mind that this is a market with companies that hold a monopoly in the provision of a wholesale service that is essential for the provision of retail services in downstream markets, and that the setting of above-cost termination rates could promote competition distortions with a negative impact on national consumers, the adoption of rates based on the Long Run Incremental Cost (LRIC) cost methodology, of the “pure” LRIC type, that is, that takes account only of incremental costs that directly concern the offer of the termination service, is the one that comes closest to the target of granting greater efficiency to this relevant market, thus maximizing benefits for users and avoiding cross-subsidization between providers and between different markets via the exploitation of excessive margins of the termination service, also associated to traffic imbalances.

In this context, the referred methodology it is also the one that ensures fewer barriers to entry of new companies and which provides better competition conditions for all market players, avoiding competition distortions between providers of different sizes and/or imbalances of financial flows.

In a perspective of static efficiency, a termination rate based on a “pure” LRIC cost model implies lower distortion of the structure of voice call rates, which will thus tend to reflect real inherent marginal costs, and it is also the option that less distorts marginal choices of consumers and the respective total amount of consumed minutes. On the other hand, in a perspective of dynamic efficiency, in the light of identified distortions that could potentially be exploited through above-cost termination pricing, the referred methodology is also the option that best fosters competition, both among mobile providers of different sizes and between fixed and mobile providers.

At the level of the mobile market, it is the most appropriate option, because it is the one that brings off-net call rates closer to their marginal costs. The inclusion of additional costs not directly attributable to the termination service, such as the case of common costs, would place an unjustified burden of such calls, to the detriment of providers who are most dependent on them, and entail cross-subsidization between providers, leading mainly to the decrease of the competitive ability of smaller providers, namely in situations where they may be affected by traffic imbalances with relevant financial impact.

It is noted also that the non-inclusion of common costs does not call into question the principle of cost-orientation of prices. In compliance with the EC Recommendation on Termination, the referred costs must be recovered in the scope of services other than call termination[89]. As such, while the wholesale call termination market is a monopolistic market, downstream retail markets are not, thus rates of services provided therein are subject to competitive pressure, and referred costs must be recovered in that scope.

As such, it is deemed that the "pure" LRIC cost methodology is the one that best fits the setting of termination ceiling prices to apply in the market, whereby prices must be applied symmetrically. Besides, it is the methodology that has been in force since 2012, when ANACOM developed for the first time a cost model based on that methodology and set termination ceiling prices on the basis of results of the model. Termination price ceilings set at the time amounted to 1.27 Euro cents per minute, and have since then suffered several reductions, the most recent, which entered into force on 01.07.2017, having set price ceilings at 0.75 Euro cents per minute, once again based on results of the "pure" LRIC cost model.

The "pure" LRIC cost methodology is also recommended by EC in its Recommendation on Termination. This Recommendation establishes that NRA must ensure that, as from 31.12.2012, termination rates are set at the level of efficient costs based on the application of the bottom-up (BU) model, using the LRIC cost model to calculate long run incremental and forward-looking costs of an operator using to the most efficient technology in the relevant time horizon.

This choice is backed by the concern to foster efficiency and sustainable competition, as well as to maximize benefits for consumers in terms of rates and offers of services. It is intended also to remove competition distortions between fixed and mobile markets.

Although EC's document is a Recommendation, it must be taken nonetheless into the utmost account, under Community directives and national transposition rules, and for this

[89] "(…) *Given the two-sided nature of call termination, not all related termination costs must necessarily be recovered from the wholesale charge levied on the originating operator. Even if wholesale termination rates were set at zero, terminating operators would still have the ability to recover their costs from non-regulated retail services.*"

reason any deviation from it must be objectively justified to EC itself, on the basis of specific national circumstances.

However, reasons that would justify any deviation from the Recommendation have not been identified on the national market. On the contrary, as demonstrated earlier, it is deemed that the recommended methodology is the one that best contributes to promote competition and that, ultimately, best protects end consumers.

It must be highlighted in this respect that, at present, most Member States of the European Union apply the Recommendation, and EC, supported by BEREC, has been very critical of NRA that opt to deviate from the Recommendation, issuing letters of serious doubts.

6.4.4.1. Benchmark of "pure" LRIC rates

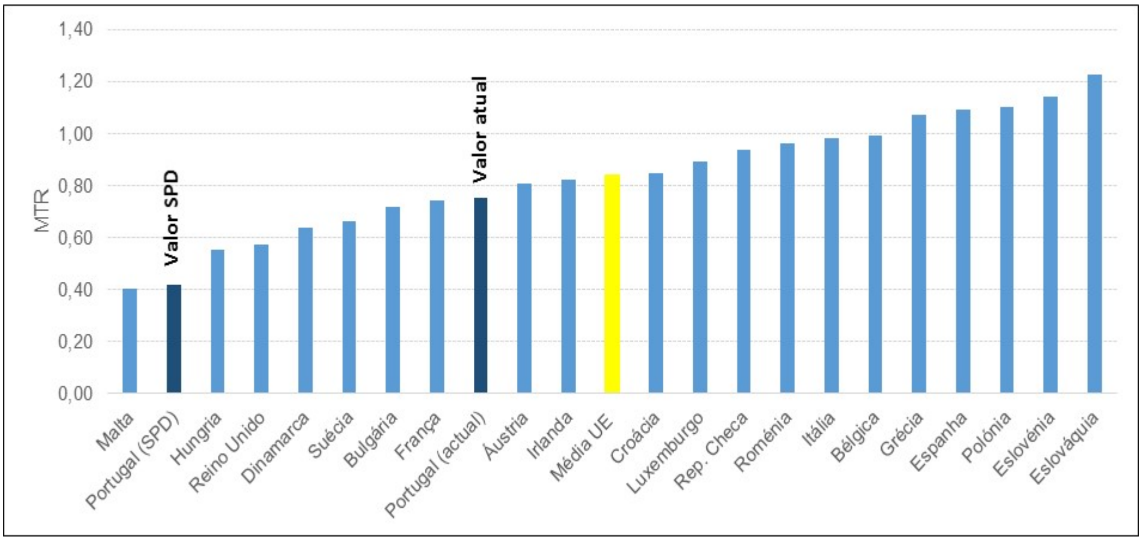
Further to ANACOM's 2015 Decision on the specification of the price control obligation in wholesale markets for voice call termination on individual mobile networks, Portugal became the 8th EU country with the lowest mobile termination rates, ranking roughly mid-table.

Nowadays, most Regulatory Authorities have already notified EC, in the context of reviews of their markets for voice call termination on individual mobile networks, the application of the respective rates defined on the basis of "pure" LRIC[90]. Specifically, of the 28 Member States, only seven do not currently apply "pure" LRIC rates, although six have adopted a benchmark based on "pure" LRIC rates.

Bearing in mind the countries that in the European context have already notified "pure" LRIC mobile termination rates, the chart below shows how Portugal ranks. As such, taking into account prices practised in July 2017, Portugal is the 9th country with the lowest "pure" LRIC rate in the group of countries that already apply the "pure" BU-LRIC model, ranking below the EU average (Chart 23).

[90] Information collected on the basis of the July 2017 benchmark, made available by BEREC at: http://berec.europa.eu/eng/document_register/subject_matter/berec/reports/7524-termination-rates-at-european-level-july-2017.

Chart 23 - "Pure" LRIC rates in EU countries



Source: *BoR Report (17) 227 Termination rates at European level July 2017*, BEREC

It is noted that, having ANACOM identified an error in the beta parameter used in the calculation of WACC, an aspect referred in EC's letter of comments following the notification of the draft decision on "Wholesale markets for voice call termination on individual mobile network - Specification of the price control obligation", the correction of the value of the referred parameter, and consequently, of WACC, was required, which led to the alteration of the termination rate, to 0.42 Euro cents per minute.

The reduction of mobile termination rates that will result from the review of the cost model will allow termination rates to decrease by 44%, allowing Portugal to rank 2nd among EU countries with the mobile termination rates defined by the pure LRIC model.

6.4.4.2. Rates to be applied

The definition of new mobile network termination rates is based on the review of the "pure" LRIC cost model, the results of which are included in a separate document, which has also been submitted to public consultation and prior hearing of stakeholders together with this review.

As such, the price ceiling that may be charged by mobile providers with SMP in Portugal on markets of voice call termination on individual mobile networks for the provision of the referred wholesale voice call termination service is set at 0.42 Euro cents per minute, regardless of the origin of the call, on the basis of per-second billing throughout the call.

in order to promote regulatory certainty, namely by regulating prices for a period which will likely correspond to the period during which this market review will remain in force, allowing it to be taken into account in business and investment plans of providers, ANACOM takes the view that the price ceiling of the wholesale mobile termination service for the next two financial years, that is, 2019 and 2020, must be identified, updated on the basis of inflation data (existing and foreseen), as described in the document of the specification of the price control obligation that is approved together with this market review.

The price ceiling set for 2018 shall take effect ten working days after the approval of the final decision on this process, and price ceilings for 2019 and 2020 shall take effect on 1 July 2019 and 1 July 2020, respectively. This determination does not apply to termination of calls originated outside the EEA.

To make the above-mentioned price update operational, ANACOM shall notify operators with SMP in these markets the resulting update for 2019 and 2020, by the end of the 1st third of the year concerned, making this information available also at its website.

6.4.4.3. Termination of calls originated outside the European Economic Area (EEA)

The provision of termination of traffic originated in countries outside the EEA is subject to a competitive pressure that differs from that to which traffic originated both at national and at Community level is subject. In the light of these differences, ANACOM took the view in the last market review that the price control obligation should be differentiated according to the origin of the call.

As referred earlier, the Recommendation on Termination recommends, in order to address the significant differences identified in the various Member States in the regulation of voice call termination rates and price control measures, the imposition of an obligation for cost-orientation of prices, proposing, to assess the cost incurred in by an efficient operator, the long-run incremental cost methodology, based on a bottom-up model, which only includes avoidable costs related to the offer of the termination service (“pure” BU-LRIC model).

The gradual application of the Recommendation on Termination on the part of the different NRA, with the consequent reduction of termination rates, has led to an enhanced approximation, not only of prices applied at national level, but also of those charged by providers of the various Member States. However, this trend continues not to necessarily cover providers of termination services of third countries, where, depending on the country, wholesale termination rates could be regulated in a different fashion, subject to a probably less demanding regulatory framework, or not even be regulated.

In this context of asymmetrical regulation, a provider of a country outside the EEA naturally enjoys business freedom to set higher termination rates if it deems it appropriate, and no difference associated to characteristics of the service exists to justify it. This situation, associated to likely traffic asymmetries, entails a penalisation of national operators.

This price asymmetry would ultimately be to the detriment of national consumers, given that retail rates would reflect the increased value of wholesale termination rates that national providers would have to bear to terminate calls in countries outside EEA, contrary to consumers of those countries, who would benefit from the fact that their providers paid termination rates based on a “pure” LRIC cost model.

It should be noted that asymmetries in the charging of mobile termination rates could also arise between calls with origin on intra-EEA countries. However, not only has this phenomenon decreased with the increase of the amount of NRA that apply the Recommendation on Termination, but EC has also expressed[91] (supported by BEREC[92]) its opposition against the practise of different termination rates in calls between different Member States, on grounds that this would be discriminatory, thus creating barriers to the internal market. However, EC never raised similar objections as regards proposals of this nature aimed at countries that are not part of EEA, that is, it never opposed to circumstances where termination rates in such cases could be agreed by means of business negotiations.

[91] In March 2016, the European Commission apposed a draft decision of the Austrian NRA, according to which Austrian providers would be entitled to charge providers of other EEA countries differentiated termination rates, depending on the level of termination rates charged by providers of those countries. Available at: https://circabc.europa.eu/sd/a/26c12171-7487-44d2-9d6d-7b8662be6487/AT-2016-1846-1847_ADOPTED_EN.pdf.

[92] Opinion available at: http://berec.europa.eu/eng/document_register/subject_matter/berec/opinions/6035-berec-opinion-on-phase-ii-investigation-pursuant-to-article-7a-of-directive-200221ec-as-amended-by-directive-2009140ec-case-at20161846-1847.

It should be noted also that one of ANACOM's purposes when regulating wholesale mobile termination markets is, among other objectives, to promote the provision of Pan-European services, which requires greater consistency and standardization of approaches adopted, at present or in the future, by other European NRA. In fact, since the last market review, only 8 Member States maintain the regulation of call termination rates with origin in the extra-EEA space.

Bearing in mind considerations described above, this Authority believes that the price control obligation must continue not to cover calls originated outside the EEA, which consequently are also not subject to the non-discrimination obligation nor to the requirement for prior publication of rates of termination services. Without prejudice, the obligation to meet reasonable requests for access imposed on operators with SMP on these markets, and other provisions concerning the transparency obligation, remains.

In this context, ANACOM continues to consider that nothing prevents the provider of the call termination service from requiring providers that purchase that service to identify in some way the origin of the call or the caller of voice calls that are delivered to it, for example through the caller ID (calling party number in the case of SS7) or through any other means, namely any of those identified in ITU Recommendation on International calling party number delivery, and non-identified traffic is subject not to benefit from a regulated rate.

Without prejudice to the above, it is deemed that arguments presented to exclude calls originated outside the EEA from regulation, namely those that concern the existence of different regulation regimes that result in termination rates that are very different from those that apply at national level, usually much higher, do not apply to operators or countries that terminate national traffic charging termination rates that are equal or even lower than regulated rates charged by providers operating in Portugal to traffic originated in the EEA. In these situations, ANACOM considers that voice traffic termination rates charged by providers with SMP should not exceed the regulated price. Operators are granted a 6-month time limit from the date of publication of this decision to ensure the application of the price control obligation is extended to calls originated by operators or countries with extra-EEA numbers with levels of termination rates that are equal to or lower than regulated rates.

6.4.5. Obligations to be imposed on operators with SMP - Conclusion

ANACOM believes that the price control obligation, as well as obligations for access, transparency and non-discrimination, are justified to ensure that termination rates are defined at the appropriate levels to reflect the cost underlying the supply of the mobile termination service, so that there are no differences in the prices charged by providers of these services, nor obstacles to the access and to relevant information required for a proper market operation. In other words, competition distortions that were identified justify the need for regulatory *ex ante* intervention, with the imposition or maintenance of measures, the necessary continuity of the imposition of termination rates in line with the levels of long-run incremental costs of an efficient operator standing out in particular.

As such, ANACOM considers that mobile providers with SMP in wholesale markets for voice call termination on individual mobile networks must be subject, as specified in previous points of this section, to the following obligations:

- To meet reasonable requests for access (article 72 of ECL)
- Non-discrimination in the offer of access and interconnection, and in the respective provision of information (article 70 of ECL)
- Transparency in the publication of information (article 67 of ECL)
- Price control (article 74 of ECL)

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Annex I

List of acronyms and abbreviations

FBB	Fixed broadband
MBB	Mobile broadband
TCB	Marktest's Telecommunications Barometer
WACC	Weighted average cost of capital
GSM	Global system for mobile communications
IP	Internet protocol
ECL	Electronic Communications Law
LRIC	Long run incremental costs
LTE	Long-term evolution
MMS	Multimedia messaging service
MVNO	Mobile Virtual Network Operator
OTT	Over-the-top service
SMP	Significant market power
SMS	Short message service
FTS	Fixed telephone service
MTS	Mobile telephone service
PTV	Pay-TV service
UMTS	Third generation mobile communication systems
VoIP	Voice over Internet Protocol
VoLTE	Voice over LTE

Annex II

List of other bodies/organizations

AdC	Autoridade de Concorrência (the Competition Authority)
ANACOM	Autoridade Nacional de Comunicações (the Portuguese National Regulatory Authority for Communications)
NRA	National Regulatory Authority
BEREC	Body of European Regulators for Electronic Communications
EC	European Commission
EEA	European Economic Area
ERG	European Regulators Group
EU	European Union

Annex III

List of operators

CABOVISÃO	Cabovisão – Televisão por Cabo, S.A.
CTT	CTT – Correios de Portugal, S.A.
GRUPO PT	Grupo Portugal Telecom
LYCAMOBILE	Lycamobile Portugal, Lda.
MEO	Serviços de Comunicações e Multimédia, S.A
MUNDIO	Mundio Mobile (Portugal) Limited
NOS	NOS – Comunicações, S.A.
NOWO	NOWO Communications, S.A.
ONI	OniTelecom – Infocomunicações, S. A.
OPTIMUS	Optimus – Telecomunicações, S. A.
PTC	PT Comunicações, S. A.
TMN	Telecomunicações Móveis Nacionais, S. A.
VECTONE	Vectone Mobile (Portugal) Limited
VODAFONE	Vodafone Portugal – Comunicações Pessoais, S.A.
ZON Multimédia	ZON Multimédia – Serviços de Telecomunicações e Multimédia, SGPS, S. A.