

BEREC preliminary analysis of intra-EU calls

26 February, 2018

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Executive summary

In light of the September 2017 proposal by the European Parliament, BEREC decided to conduct a preliminary analysis of intra-EU calls. This paper presents BEREC's initial findings, based on a data collection exercise conducted between December 2017 and February 2018, and the subsequent analysis set out here. While, thus far, BEREC has received responses from 24 National Regulatory Authorities (NRAs), BEREC wishes to clearly state that the level of detail and data quality in the responses that NRAs received from operators is not consistent throughout, and therefore the preliminary findings in this paper should not be interpreted as a Europe-wide analysis, rather a presentation of data and derived metrics for a subset of countries whose data was considered acceptable to BEREC.

One of the reasons for a level of inconsistency in the responses to the questionnaire is that NRAs do not collect this detailed data from operators on a regular basis, since this (intra-EU calls) is not a regulated market. It is for this reason that the questionnaire was sent to operators, who were requested to complete it on a voluntary basis. However, clearly some operators had difficulties to provide the required data, resulting in a varying level of detail in the responses, as well as differences with regard to the availability of data for the requested years (2013-2017).

For this preliminary analysis, BEREC has developed a set of derived metrics. The analysis of those metrics suggest that fixed network intra-EU calls represent a tiny fraction of all fixed voice minutes on an annual basis. In 2017, the range of this metric, across 20 different countries, is 0.9%-7.0%. The data indicates that there is a clear decline in fixed voice intra-EU calls over the period of the analysis, an approximate 14% drop in minutes.

For mobile networks, the data indicates that intra-EU calls represent a small portion (less than 3%) of all mobile voice minutes on an annual basis. In 2017, the range of this metric, across 18 countries, is 0.3%-13.4%. The data indicates that subscribers only spend 9-10 minutes per month making intra EU-calls.

It's clear from the data that most intra-EU calls made from landlines are to other landlines (on average more than 70%), and that most intra-EU calls made from mobile phones are to other mobile phones (on average more than 80%).

The data provided by operators on revenues, based on a subset of countries whose data BEREC considers to be of sufficient quality, suggests that the average intra-EU fixed revenues per minute is, over the five year period of the analysis, approximately €0.098, while average intra-EU mobile revenues per minute is approximately €0.146.

It is important to have in mind that, while in the context of the current legislative debate, this topic is referred to as intra-EU calls, the measure proposed by the European Parliament would also cover other types of number based interpersonal communications services (i.e. SMS and MMS). This paper provides a preliminary analysis of intra-EU calls but any future, in-depth analysis of the impact of the proposed measure should also take into account the other types of communications which could be covered. It should also be noted that when examining intra-

EU calls, OTT services and small operators¹ specializing in offers for low-cost international calls should be considered in the analysis. Regarding OTTs, while a concrete quantitative estimation of the substitutional effects is difficult to make, a number of NRAs were able to present survey data that help to understand the impact that OTT services have on traditional intra-EU calls.

Those surveys show that there is a substantial substitution: 34% of Belgian consumers who make international calls exclusively use free online tools and 40% of the respondents of an Austrian survey indicated that they rather used OTT services than traditional telephony for international calls.

In the time available, BEREC focused on gathering data on intra-EU calls and SMS, but has not been able to gather comparable data for national calls. Gathering such data in relation to national calls would be more complicated because of the common practice of including national calls in monthly packages. The preliminary analysis does not, therefore, provide evidence as to the extent of any premium in the price charged for intra-EU calls over national calls, nor does this paper cover intra-EU calls included in bundles, despite the growing importance of bundles offers with respect to international calls.

Finally, the data does not include any analysis of the volumes of intra-EU calls carried by OTT providers, nor of the extent to which OTT services are a constraint on the pricing of intra-EU calls. However, going forward, BEREC will continue its work on this matter, including an analysis of intra-EU SMS, as well a consideration of how the EP proposal could impact operator revenues.

1. Background

The purpose of this BEREC paper is to present a preliminary analysis of telecommunications operator data (for both fixed and mobile operators), recently collected by National Regulatory Authorities (NRAs) on behalf of BEREC, on the matter of intra-European Union (intra-EU) calls. However, it should be made clear from the outset that no policy inferences or conclusions are made in this paper. BEREC has prepared this preliminary analysis in order to add to the material and information that has already been published on this issue.

In its opinion released on 8 September to the European Parliament's lead committee ITRE², regarding the proposal for a European Electronic Communications Code, IMCO³ proposed to introduce article 92a on "intra-Union calls". This proposal envisages that providers of number-based interpersonal communication services (including SMS and MMS) could not charge higher fees to users when calling from mobiles or landlines to another European Union Member State (MS) than they do when calling within their own MS, unless objectively justified by the additional direct costs that the operator might have to bear. Based on the proposal of

¹ Due to the restricted timetable, NRAs were encouraged not to collect data from small operators as it was considered that data covering 80% of each market is sufficiently representative.

² The Committee on Industry, Research and Energy is a committee of the European Parliament.

³ The Committee on Internal Market and Consumer Protection is a committee of the European Parliament.

the EP, BEREC would be asked to set out guidelines on how service providers could recover their incurred costs in other ways. The IMCO proposal was then incorporated in ITRE's first reading report of 9 October.

Subsequent to the EP's proposal, the European Commission (EC) prepared a non-paper on intra-EU calls⁴. While this non-paper, considered to be 'technical assistance' upon the co-legislators' request in the Trilogue, contained interesting demand-side (survey) information, taken from the forthcoming Special Eurobarometer⁵ (#462) on E-communications, there is little detail with respect to traffic, revenues, and costs from the supply-side (operator data) at the European level concerning intra-EU calls.

Given that part of BEREC's mission is to contribute to the development and better functioning of the internal market for electronic communications networks and services in December 2017, through dialogue with the EC, BEREC proposed to gather data on intra-EU calls, and subsequently to prepare and publish a preliminary analysis in early 2018. BEREC circulated a detailed questionnaire to its constituent NRAs requesting annual operator data, for the 2013-2017 period, covering the following high level indicators, as well as a number of sub-indicators⁶:

- Number of fixed and mobile subscribers using intra-EU voice minutes and SMS;
- Volume of fixed and mobile intra-EU voice minutes and SMS;
- Revenues (in Euro) derived from provision of fixed and mobile intra-EU voice minutes and SMS;
- Costs⁷ (in Euro) incurred from provision of fixed and mobile intra-EU voice minutes and SMS.

Between 14 December 2017 and 16 February 2018, BEREC received responses from 24 NRAs⁸, based on data collected from operators in individual MS. In order to be included in this preliminary analysis, the responses had to be received by 16 February, at the latest, so that this paper could be assessed and approved for publication by the BEREC Board of Regulators, through its formal electronic clearance procedure⁹, whereby all of BEREC's constituent NRAs are entitled to one vote. BEREC intends to continue reviewing and refining the data it has already received, as well as receiving additional data from those NRAs that were not able to provide the operators' responses to the questionnaire by 16 February.

⁴ Commission non-paper on intra-EU calls: WK 13452/2017 INIT, 20 November 2017, Brussels.

⁵ As yet unpublished. Fieldwork conducted in May 2017.

⁶ The questionnaire in full is included in Annex 1 of this BEREC paper.

⁷ For the purposes of the questionnaire, total costs were considered as outpayments, defined as termination and transit costs.

⁸ 24 responding NRAs (as of 16 February 2018): CTU (Czech Republic), OCECPR (Cyprus), RTR (Austria), BIPT (Belgium), Anacom (Portugal), UKE (Poland), MCA (Malta), SPRK (Latvia), DBA (Denmark), EETT (Greece), RRT (Lithuania), Arcep (France), Nkom (Norway), Ancom (Romania), ECA (Estonia), Ficora (Finland), NMHH (Hungary), ACM (Netherlands), Agcom (Italy), CNMC (Spain), BNetzA (Germany), AKOS (Slovenia), RU (Slovakia), CRC (Bulgaria).

⁹ See BEREC Rules of Procedure.

Despite the relative detail and complexity of the questionnaire, as elaborated in Annex 1 of this paper, BEREC received responses from 24 NRAs¹⁰. However, BEREC wishes to clearly state that the level of detail in NRA responses is not consistent throughout. While, within the restricted submission period, a limited number of NRAs were able to provide practically complete datasets over the five years which information was requested for, this was not the case for all responses, and the lack of consistency in the data provided by NRAs was also down to an inability, on the behalf of all operators, to provide data over the five year period, 2013-2017. The next chapter of this paper presents an overview of the data, discusses its quality, and explains, in brief, the methodology used by BEREC in its preliminary analysis. Chapter 3 of the paper then presents in some more detail, where possible, BEREC's interpretation of the data, including graphical representation. As already indicated, this is a preliminary analysis; BEREC has reviewed the data submitted by operators to NRAs, and only includes in its analysis data from those countries that BEREC considers to be of sufficient quality and consistency.

2. Data

In its December 2017 questionnaire, which was circulated to NRAs who then requested operators to complete, BEREC sought to (a) understand better the nature of intra-EU calls, and (b) minimise the burden of the ad hoc nature of the request to operators. Therefore, BEREC asked NRAs to only collect data from operators representing 80% of both the fixed and mobile markets in their respective MS. This would, it was felt, help to provide BEREC, and other interested parties, with a reasonable understanding and perspective on the dynamics of intra-EU calls.

However, the short period of time that BEREC had to develop this work meant that operators were also under a time constraint to respond to their respective NRAs, which may have impacted the quality of their response to the questionnaire. Given this, not all NRAs, that provided a response, were able to report completely at 80% of their Member State's market shares for the fixed and mobile markets. It should be noted that NRAs do not collect data on intra-EU calls on a regular basis, since it is not a recommended 'relevant market'. Therefore, NRAs were reliant on operators to complete the questionnaire. However, clearly some operators were not able to provide data to the extent required, and over the entirety of the years requested. For those operators that did respond, their respective NRAs aggregated the responses and submitted to BEREC. In summary, across the 24 European countries, which (varying levels of) data has been collected for, and over the five year time period, the average market share covered for fixed markets is 70% and for mobile markets, the average market share covered is 69%, based on the same time period and number of countries. Also, it should be noted that, in light of the decision to minimise the burden of the ad hoc nature of the request to operators, small operators were not included in the data collection. However, some small operators serve niche markets and inter alia specialize on offers for international calls. The

¹⁰ Including European Union Member States, the accession countries to the European Union, and the European Free Trade Association Member States.

effect of not including such operators in the analysis cannot be estimated, at this time, by BEREC.

BEREC collated all responses received, as of 16 February 2018, and prepared a database of the indicators set out in the questionnaire. In total, BEREC's questionnaire requested data for 22 fixed indicators and 33 mobile indicators (including SMS¹¹ information), the detail of which can be seen in Annex 1. A quality assessment of all 24 responses received was conducted by BEREC. Table 1, below, summarises the quality of the responses¹². This assessment covers the quality of the response to each of the indicators (55 in total, across fixed and mobile markets), and the time series of the data. 'Yes' indicates that the response by an individual NRA would allow for further analysis, 'Limited' means that further analysis is open for interpretation, and 'No' implies that no further analysis could be completed based on the lack of quality in the response, with respect to either the quality of the data for indicators, generally, and/or the quality of the time series.

		Fixed networks	Mobile networks
		# NRA responses	# NRA responses
Quality of indicators	Yes	12	10
	Limited	8	6
	No	4	8
Quality of time series	Yes	9	8
	Limited	8	10
	No	7	6

Table 1: Summary of NRA response quality assessment.

Difficulties with the quality of the indicators include, but are not limited to:

- Limited number of data points;
- NRA admitted the data lacked quality;
- Number of operators providing data varies, which creates a consistency issue.

In addition, difficulties with the quality of the time series include, but are not limited to:

- Number of operators providing data over time varies, which creates a consistency issue;
- Limited periodicity (i.e. only one year of data provided).

¹¹ An analysis of SMS data has not been conducted in this BEREC paper. The focus of this paper is solely on fixed and mobile intra-EU voice calls.

¹² Essentially, each NRA's response counts as 2 datasets (one for fixed, and one for mobile).

So, based on its assessment of the responses received, BEREC was satisfied that the data provided by operators to at least 12 NRAs was of acceptable quality, with respect to the quality of the fixed network indicators, to be used in its preliminary analysis. BEREC was satisfied that the data provided by operators to at least 10 NRAs was of acceptable quality, with respect to the quality of the mobile network indicators, to be used in its preliminary analysis. Regarding the quality of the time series of the data, BEREC was satisfied that at least 9 NRAs received good data from fixed network operators and at least 8 NRAs received good data from mobile network operators.

Rather than simply present the statistics on the indicators for which data is collected, BEREC considered it worthwhile and important to interpret these indicators in such a way as to add value to the data provided by operators through their respective NRAs.

Therefore, BEREC developed a set of derived metrics based on the indicators listed in the questionnaire, which BEREC circulated in December 2017. BEREC considers that these derived metrics allow for the most intuitive presentation of its preliminary analysis of intra-EU calls.

Given the commercial sensitivity of data provided to NRAs by operators, particularly data on revenues and outpayments (defined in BEREC's questionnaire as transit and termination costs), and the fact that BEREC intends to continue analysing this data, the information underpinning this preliminary analysis remains absolutely confidential, and BEREC does not intend to make the database publically available.

Finally, in light of BEREC's review of the data provided by operators on outpayments, BEREC is not prepared at this time to present this data.

3. Preliminary analysis of derived metrics

As indicated in chapter 2 above, based on the indicators in its December 2017 questionnaire, and the subsequent responses, BEREC has developed several derived metrics, which are presented in this chapter as its preliminary analysis of intra-EU calls. The analysis presented is based on data provided by a subset of the 24 NRAs that originally responded to the BEREC questionnaire, therefore no inference or extrapolation should be made for those countries not included in the analysis.

Given that the questionnaire covered both fixed networks and mobile networks, the derived metrics are presented similarly below.

3.1. Intra-EU calls originating on fixed networks

Figure 1 below presents an analysis of intra-EU fixed voice minutes as a percentage of all fixed voice minutes over the five year period from 2013 to 2017. This derived metric is based

on data provided by a subset of the 24 NRAs¹³ that originally responded to the BEREC questionnaire.

Essentially, even with an improving dataset over time, the data indicates that, across Europe, fixed network intra-EU calls represent a tiny fraction of all fixed voice minutes on an annual basis. In 2017, the range of this metric, across 20 different countries, is 0.9%-7.0%.

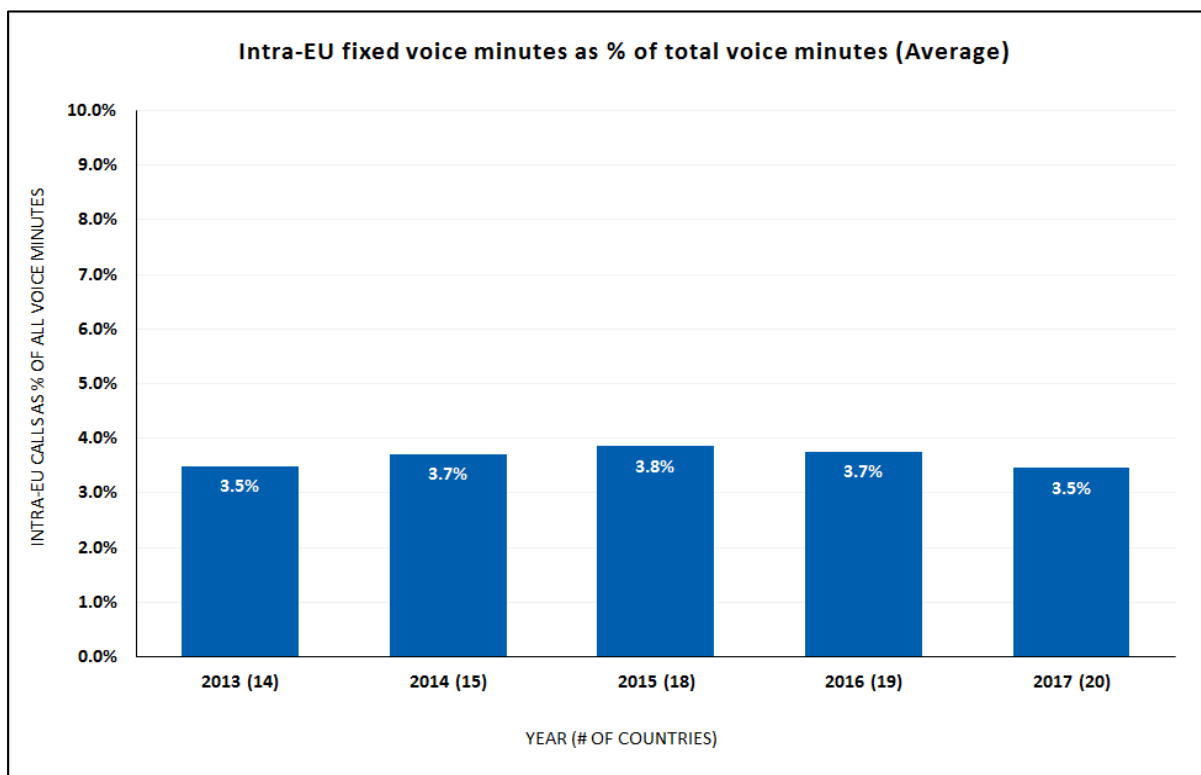


Figure 1: Fixed network intra-EU voice minutes as % of total fixed voice minutes¹⁴.

The derived metric illustrated in Figure 2 explains how much of all fixed intra-EU calls are made to other landlines, and how much of all fixed intra-EU calls are made to mobile phones. The analysis is based on a smaller (but also increasing) set¹⁵ of countries than that presented in Figure 1. The data suggests that on average, over the five year period of the analysis, approximately 70% of all fixed intra-EU minutes are made between landlines.

The range of data, submitted by NRAs, suggests that there are some countries where up to 90% of fixed intra-EU voice calls are made between landlines, while conversely the range of data also indicates that there are some countries where almost 50% of fixed intra-EU voice calls are made to mobile phones.

¹³ 14 in 2013, 15 in 2014, 18 in 2015, 19 in 2016, and 20 in 2017.

¹⁴ Countries considered: 2013: IT, LT, DK, EL, LV, DE, CY, CZ, SK, PL, PT, RO, SI, NL; 2014: the same as 2013 plus ES; 2015: The same as 2014 plus HU, FI, NO, FR; 2016: the same as 2015 plus MT and excluding NL; 2017: the same as 2016 plus EE.

¹⁵ 7 in 2013, 10 in 2014, 13 in 2015, 12 in 2016, and 12 in 2017.

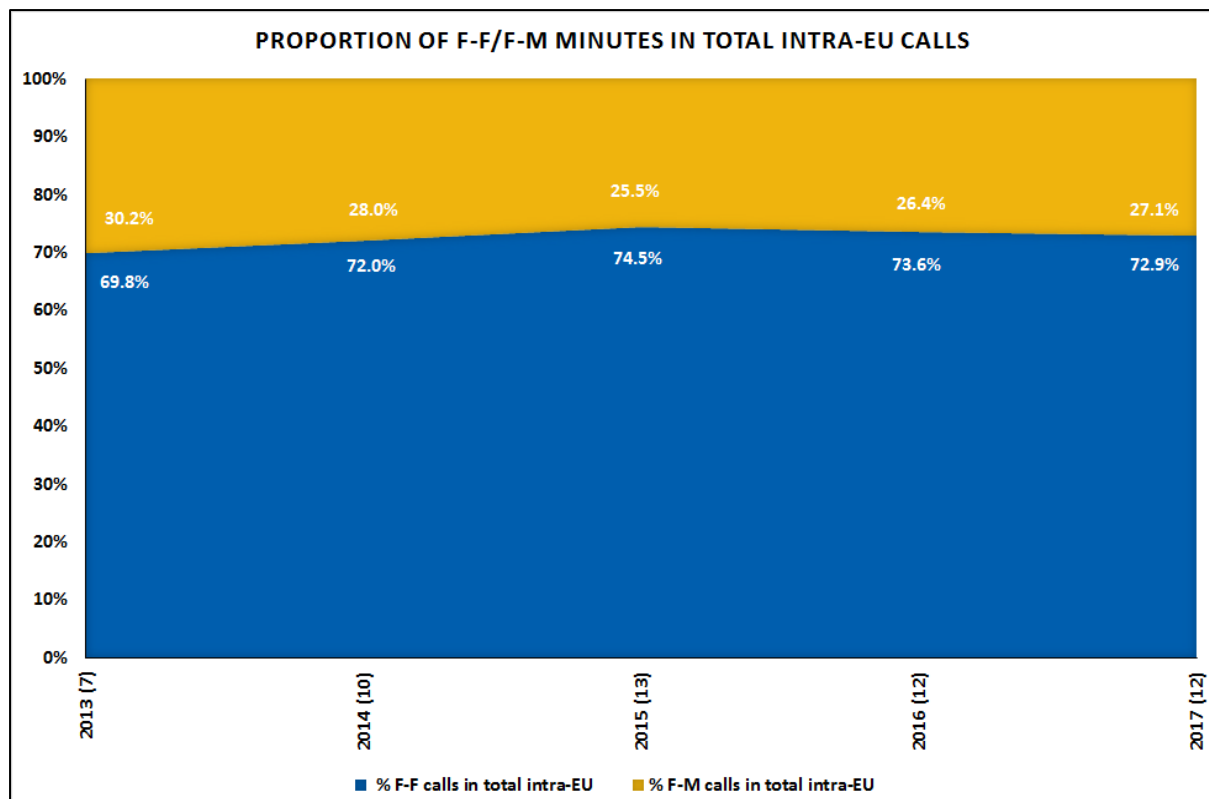


Figure 2: Proportion of fixed-fixed and fixed-mobile minutes in intra-EU calls¹⁶.

Figure 3 below presents the evolution of fixed voice intra-EU calls, averaged across 13 countries, between 2013 and 2017. The data indicates that, year-on-year, there is a clear decline in this type of call; on average, for these 13 countries (across the period of the analysis), an approximate 14% drop in minutes. The most significant negative annual change, for an individual country, was an approximate 30% drop in minutes in 2017.

¹⁶ Considered countries: 2013: DK, LT, LV, NL, PT, RO, SK; 2014: the same as 2013 plus AT, CY, ES; 2015: The same as 2014 plus FR, HU, NO; 2016: the same as 2015 excluding NL; 2017: the same as 2016 plus EE and excluding CY.

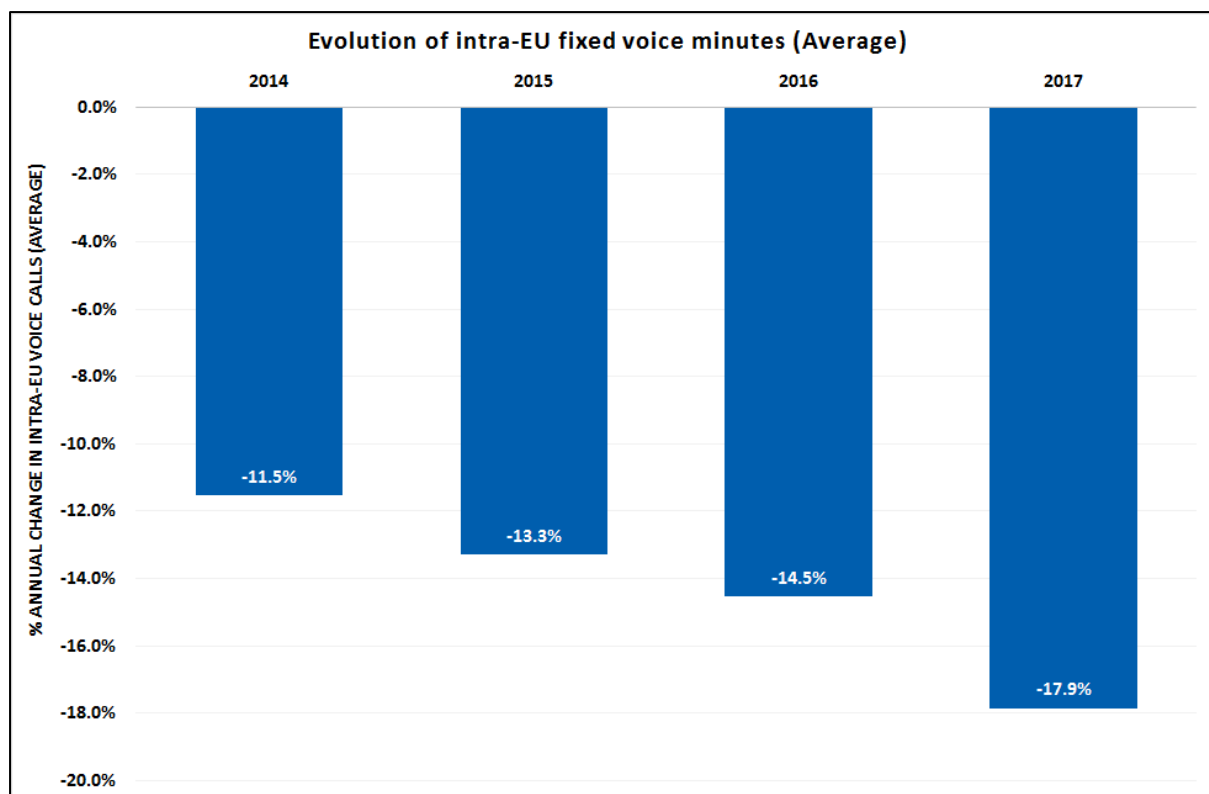


Figure 3: Evolution of intra-EU fixed voice minutes¹⁷.

Perhaps the most difficult data for operators to provide to NRAs (and subsequently to BEREC) as part of this data collection exercise is data on intra-EU revenues and outpayments (as defined in BEREC's questionnaire as transit and terminations costs).

As already mentioned in chapter 2, despite receiving a relatively complete dataset on outpayments from a significant number of NRAs, BEREC has made the decision to exclude this data from its analysis, as it has yet to be thoroughly verified. Therefore, Figure 4 below simply illustrates the per-minute revenues for fixed intra-EU calls between 2013 and 2017 for a small subset of countries¹⁸.

It should be noted that revenues of intra-EU calls included in bundled offers are difficult to measure and most operators only provided (to their respective NRAs) total revenues of intra-EU calls without specifying if they include revenues from bundles. Moreover, only one country provided consistent data on bundle revenues. Thus, the analysis presented in the chart considers the total revenue data, provided by operators, including revenue share from packages/bundles.

¹⁷ Considered countries (13 in total) across the five year period of the analysis: CY, CZ, DE, DK, ES, FI, FR, HU, IT, LT, LV, NO, PT.

¹⁸ It should be noted that usable data is presented for 10 countries in 2016 and 2017.

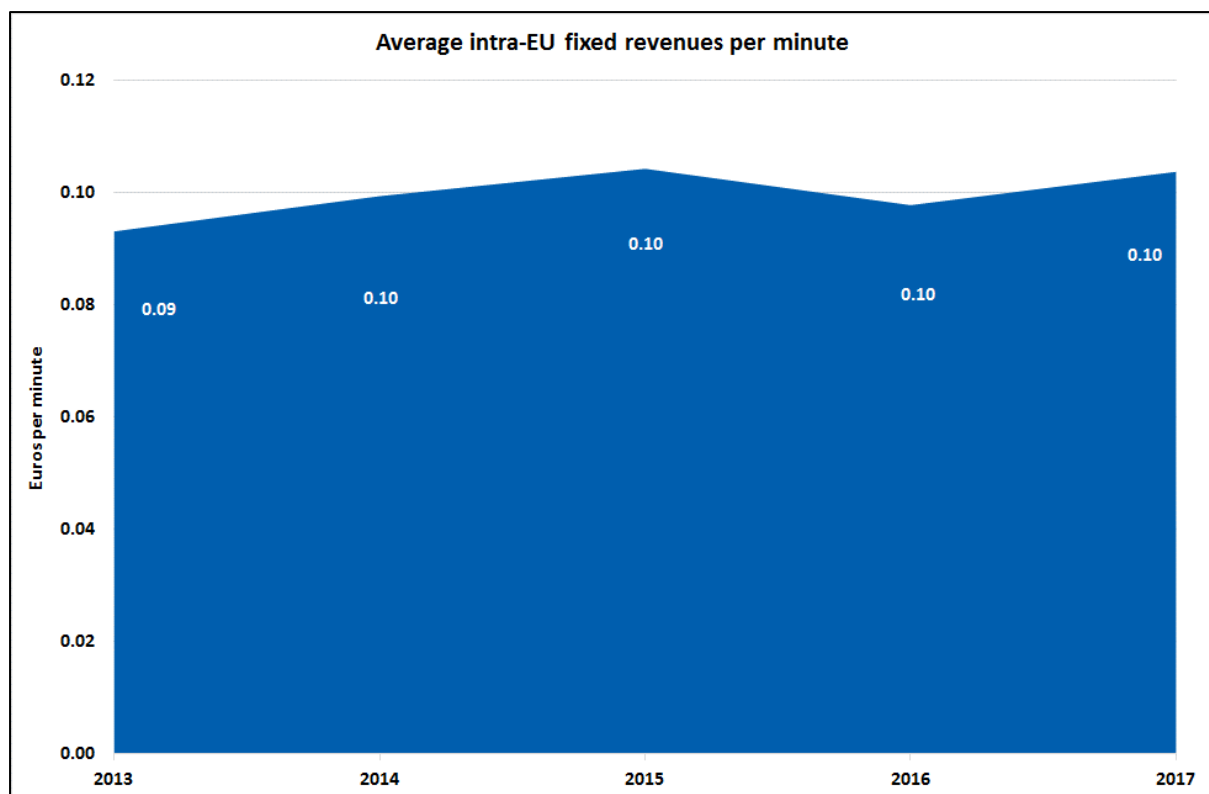


Figure 4: Average intra-EU fixed revenues per minute¹⁹.

Figure 5 below presents a comparison of the monthly average fixed minutes per subscriber with the average intra-EU fixed minutes per subscriber making intra-EU calls. The 2017 data, based on information provided by 9 countries, suggests that, on average subscribers in those 9 countries spend approximately 35 minutes per month making intra EU-calls, while the average number of minutes (for all calls) per subscriber is approximately 5 times higher.

¹⁹ Countries considered: 5 in 2013 (CZ, DK, LV, NL, PT); 6 in 2014 (+ AT); 8 in 2015 (+HU, FI); 10 in 2016 and 2017 (+SI, SK).

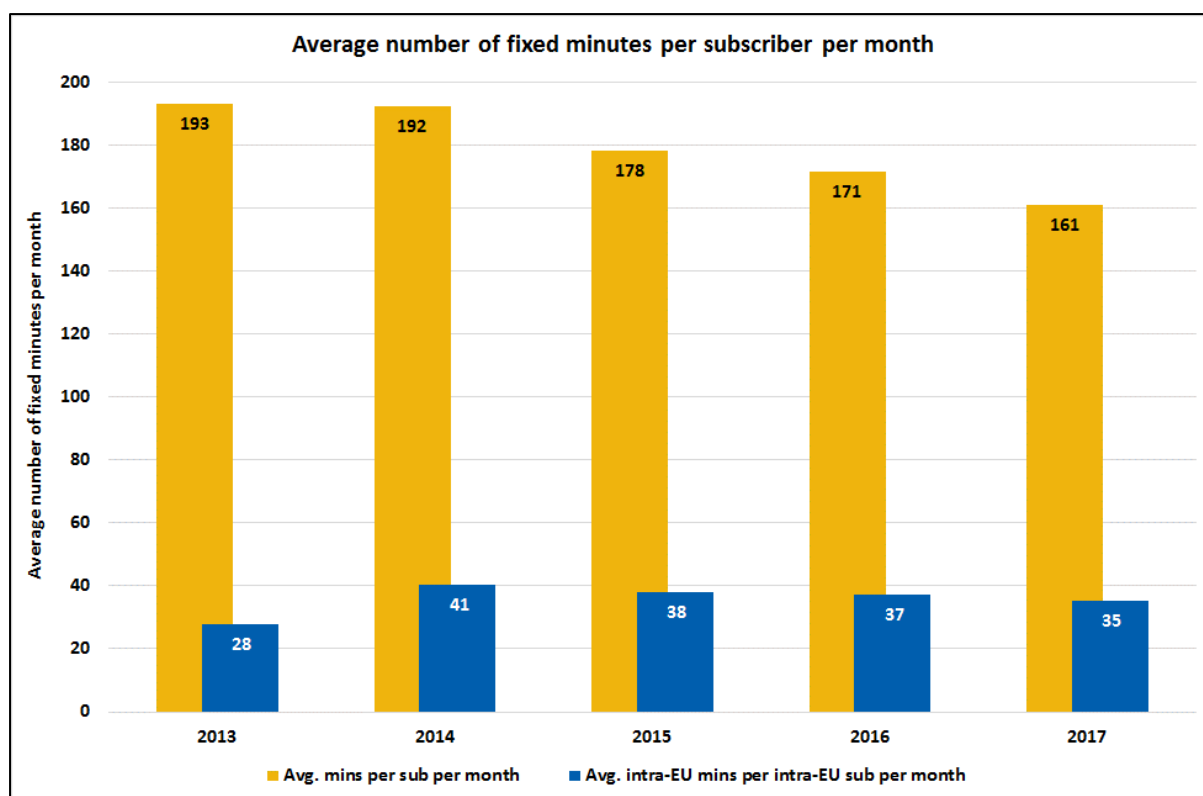


Figure 5: Average number of minutes originating on fixed networks per subscriber per month²⁰.

3.2. Intra-EU calls originating on mobile networks

Figure 6 below presents an analysis of intra-EU mobile voice minutes as a percentage of all mobile voice minutes over the five year period from 2013 to 2017. This derived metric is based on data provided by a subset of the 24 NRAs²¹ that originally responded to the BEREC questionnaire, increasing over the period of the analysis.

Essentially, despite an improving dataset over time, the data indicates that, across Europe, mobile network intra-EU calls represent a small portion (less than 3%) of all mobile voice minutes on an annual basis. In 2017, the range of this metric, across 18 countries, is 0.3%-13.4%.

²⁰ Countries considered: 2013: CZ, DK, IT, LV, PL, SK; 2014: the same plus DE; 2015: the same plus HU; 2016 and 2017: the same plus NO.

²¹ 10 in 2013, 15 in 2014, 16 in 2015, 17 in 2016, and 18 in 2017.

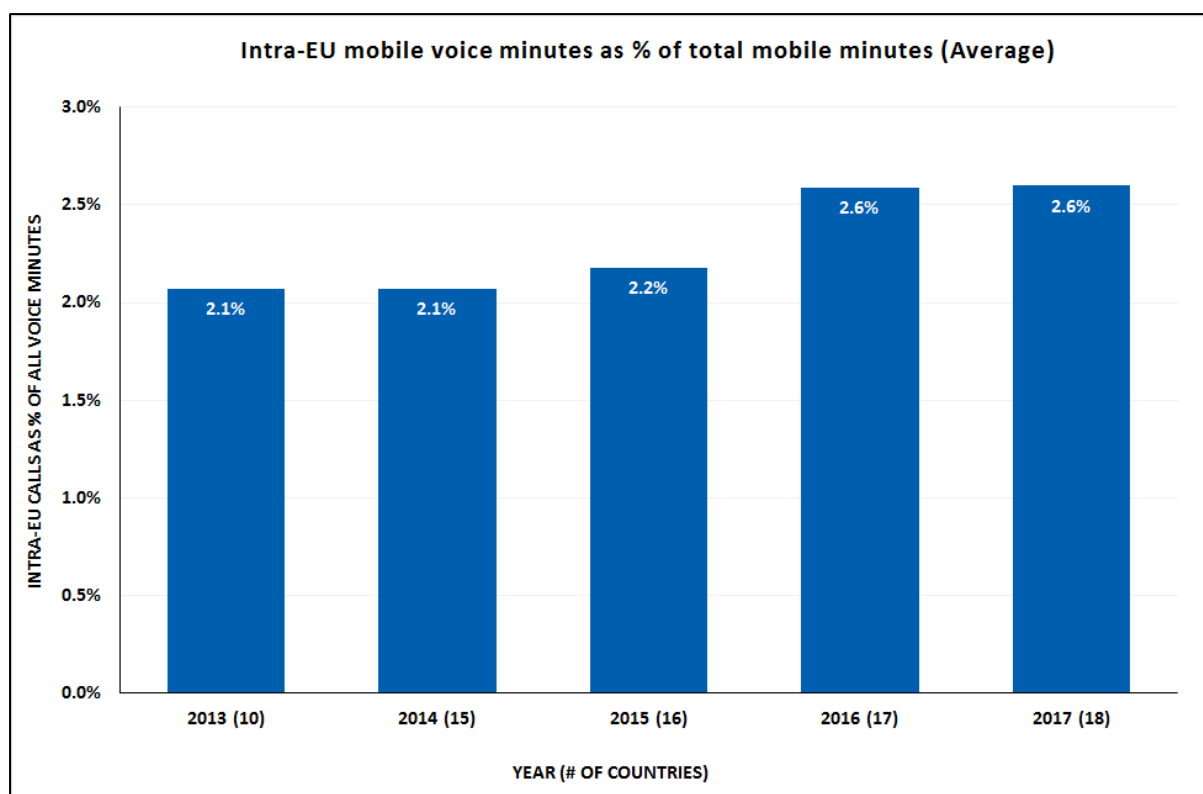


Figure 6: Mobile network intra-EU voice minutes as % of total mobile voice minutes²².

The derived metric illustrated in Figure 7 explains how much of all mobile intra-EU calls are made to landlines, and how much of all mobile intra-EU calls are made to other mobile phones. The analysis is based on a smaller (but also increasing) set²³ of countries than that presented in Figure 6.

The data suggests that on average, over the five year period of the analysis, approximately 80% of all mobile intra-EU minutes, for the countries analysed, were made between mobile phones.

The range of data, submitted by operators to their respective NRAs, suggests that there are some countries where up to 95% of mobile intra-EU voice calls are made between mobile phones, while conversely the range of data also indicates that there are some countries where almost 45% of mobile intra-EU voice calls are made to landlines.

²² Countries considered: 2013: CZ, DE, EL, IT, LV, NL, PL, PT, RO, SK; 2014: the same as 2013 plus CY, ES; 2015: the same as 2014 plus AT, FR, HU, NO; 2016: the same as 2015 plus BE, LT and excluding NL; 2017: the same as 2016 plus EE, MT and excluding DE.

²³ 7 in 2013, 10 in 2014, 13 in 2015, 12 in 2016, and 12 in 2017.

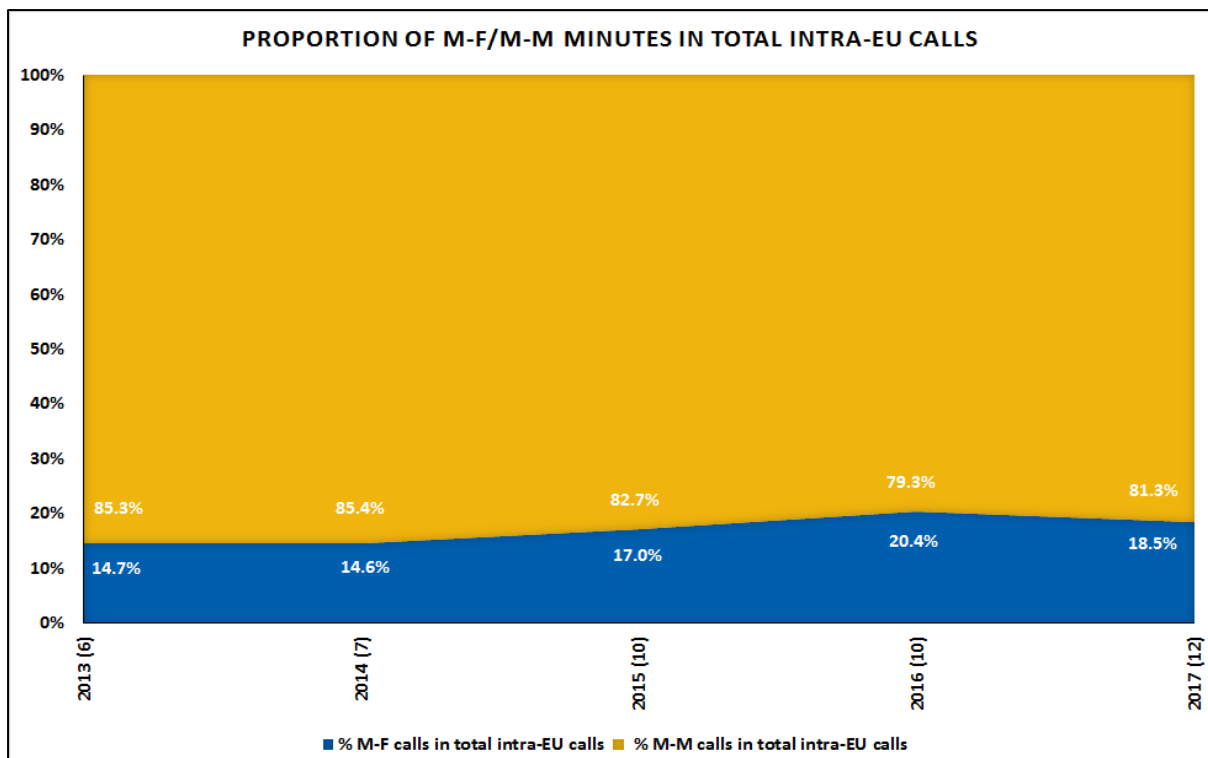


Figure 7: Proportion of mobile-fixed and mobile-mobile minutes in intra-EU calls²⁴.

Figure 8 below presents a comparison of the monthly average mobile minutes per subscriber with the average intra-EU mobile minutes per subscriber making intra-EU calls. The 2017 data, based on information provided by 13 countries, suggests that, on average subscribers making intra-EU calls only spend 9-10 minutes making intra EU-calls, while the average number of minutes per subscriber (for all calls) is 15 times higher.

²⁴ Countries considered: 2013: LV, NL, PT, RO, SK, SI; 2014: the same as 2013 plus CY; 2015: the same as 2014 plus FR, HU, NO; 2016: the same as 2015 plus BE, BG and excluding SI, NL; 2017: the same as 2016 plus EE, PL.

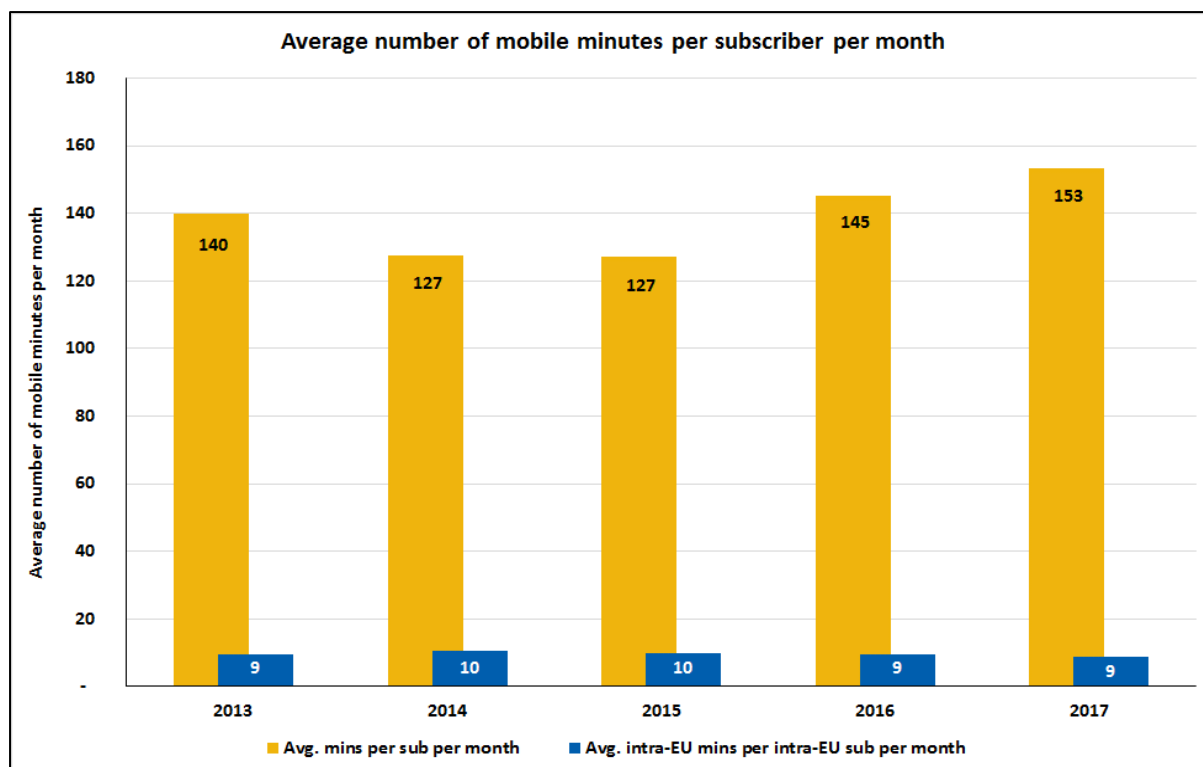


Figure 8: Average number of minutes originating on mobile networks per subscriber per month²⁵.

As already stated above, perhaps the most difficult data for operators to provide to NRAs (and subsequently to BEREC) as part of this data collection exercise is data on intra-EU revenues and outpayments. As already mentioned in chapter 2, despite receiving a relatively complete dataset on outpayments from a significant number of NRAs, BEREC has made the decision to exclude this data from its analysis, as it has yet to be thoroughly verified.

Therefore, Figure 9 below simply illustrates the per-minute revenues for mobile intra-EU calls between 2013 and 2017 for a small subset of countries whose operators were able to provide this data. It should be noted that small operators, who were not included in the data collection, might specialize in offers for low-cost international calls. This, of course, has an impact on the average revenues per minute.

It should be noted that the drop in average revenues per-minute between 2015 and 2016 is as a result of revenues decreasing for data reported by operators to two NRAs in that period, and the introduction of data reported by operators to one NRA from 2016, whose revenues are lower than the average.

²⁵ Countries considered: 2013: CZ, LV, PL, RO, SK; 2014: the same plus DE, PT; 2015: the same plus HU; 2016: the same as 2014 plus LT, NO, BG; 2017: the same as 2016 plus EE, MT and excluding DE.

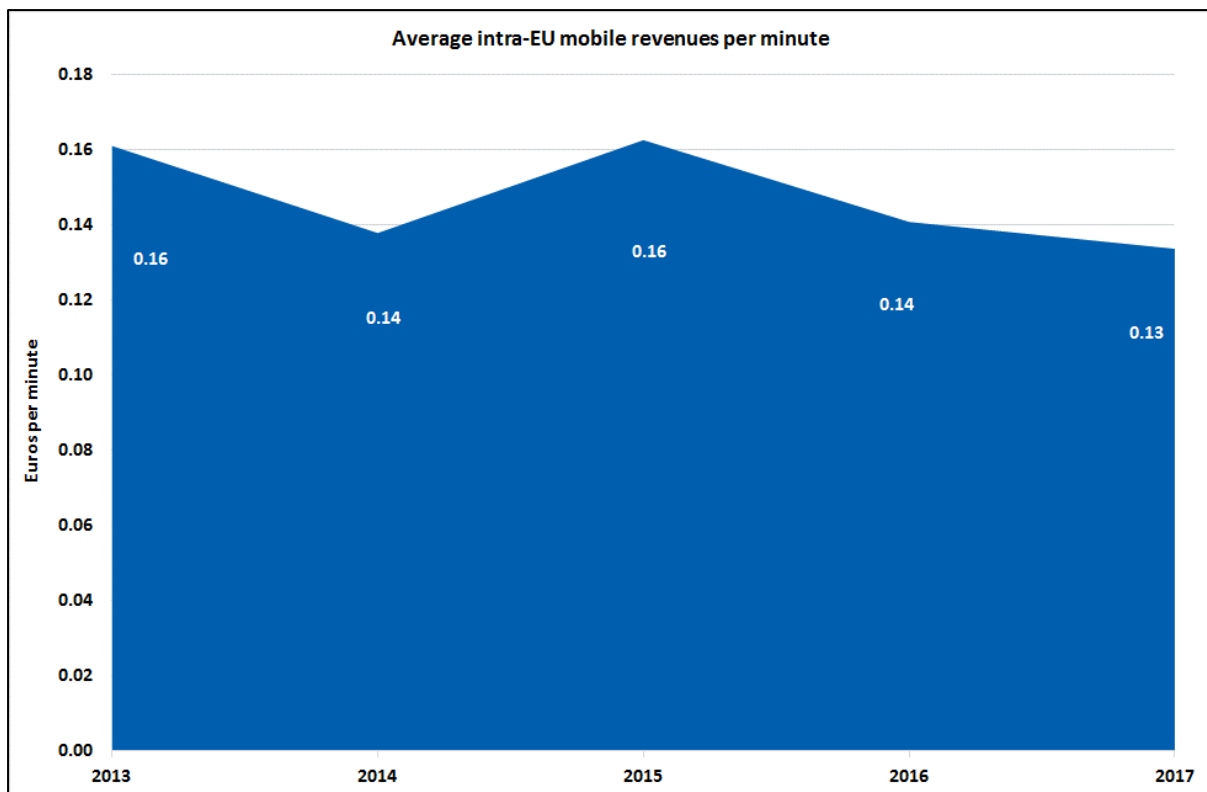


Figure9: Average intra-EU mobile revenues²⁶.

3.3. The role of OTTs and small operators with regard to intra-EU calls

It should be noted that when examining intra-EU calls, OTT services and small operators, specializing in offers for low-cost international calls, should be taken into consideration in the analysis. However, regarding OTTs a definitive quantitative estimation of the substitutional effects is difficult to make, since data on intra-EU calls (number of minutes) made via OTTs is not an easy dataset to acquire. As well as requesting data across the 55 indicators in its December 2017 questionnaire, BEREC also asked a number of qualitative questions of operators. A number of operators were able to provide their respective NRAs with survey data that helps to understand the impact that OTT services have on traditional intra-EU calls.

In a nationally representative survey commissioned in 2017 by RTR, the Austrian NRA, 40% of respondents indicated that they preferred to use OTT services than traditional telephony for international calls. Furthermore, a Belgian Consumer Survey conducted by Ipsos in 2017 showed that, irrespective of age, 34% of consumers who make international calls exclusively use free online tools and another 28% use free online tools and traditional telco services in parallel.

Although concrete data is not available for all countries, there is some evidence to suggest that traditional international phone calls are being substituted by OTT alternatives. According

²⁶ Countries considered: 5 in 2013 (CZ, EL, LV, PL, PT); 6 in 2014 (+ CY); 8 in 2015 (+HU, NO); 10 in 2016 (+BE, SK); 11 in 2017 (+MT).

to the European Commission's 2017 survey, "Information and Communication Technologies in households and by individuals", 39% of Europeans aged 16 to 74 said that they regularly make voice or video calls over the Internet. It is expected that OTT usage will continue to grow, and gain further relevance with respect to international calls in the future, and potentially further reduce the usage of intra-EU calls, which as has been presented in this preliminary analysis, is already relatively limited.

BEREC also understands that small operators specializing in offers for low-cost international calls might have an impact on the average revenue per minute of intra-EU calls and the respective traffic. However, due to the restricted timeframe of this analysis, NRAs were encouraged not to collect data from small operators as it was considered that data covering 80% of each market is sufficiently representative.

4. Preliminary findings

In light of the September 2017 proposal by the European Parliament's lead committee, ITRE, BEREC decided to conduct an own initiative preliminary analysis of intra-EU calls. This paper presents BEREC's preliminary findings of a data collection exercise which BEREC conducted between December 2017 and February 2018. While, thus far, BEREC has received responses from 24 NRAs, BEREC wishes to clearly state that the level of detail in operator responses to NRAs is not consistent throughout.

One of the reasons for this is that, NRAs do not collect data at this level of detail on a regular basis, since it is not a recommended 'relevant market'. Therefore, NRAs were reliant on operators to complete the questionnaire. However, clearly some operators were not able to provide data to the extent required, and over the entirety of the years requested. For those operators that did respond, their respective NRAs aggregated the responses and submitted to BEREC.

For this preliminary assessment, BEREC has developed, on the basis of a relatively small dataset, a set of derived metrics. The analysis of those metrics suggests that fixed network intra-EU calls represent a tiny fraction of all fixed voice minutes on an annual basis. In 2017, the range of this metric, across 20 different countries, is 0.9%-7.0%. The data suggests that on average, over the five year period of the analysis, approximately 70% of all fixed intra-EU minutes are made between landlines. Furthermore, the data indicates that there is a clear decline in fixed voice intra-EU calls over the period of the analysis, an approximate 14% drop in minutes.

For mobile networks, the data indicates that intra-EU calls represent a small portion (less than 3%) of all mobile voice minutes on an annual basis. In 2017, the range of this metric, across 18 countries, is 0.3%-13.4%. The data suggests that on average, over the five year period of the analysis, approximately 80% of all mobile intra-EU minutes, for the countries analysed, were made between mobile phones. In addition, the data indicates that subscribers only spend 9-10 minutes per month making intra EU-calls.

It's clear from the data that most intra-EU calls made from landlines are to other landlines (on average more than 70%), and that most intra-EU calls made from mobile phones are to other mobile phones (on average more than 80%).

The most difficult data for operators to provide to NRAs (and subsequently to BEREC) is data on intra-EU revenues and outpayments. BEREC has decided not to present data on outpayments in this preliminary analysis. The data provided by operators on revenues, based on a subset of countries whose data BEREC considers to be of sufficient quality, suggests that the average intra-EU fixed revenues per minute is, over the five year period of the analysis, approximately €0.098, while average intra-EU mobile revenues per minute is approximately €0.146.

It is important also to recognise that when examining intra-EU calls, OTT services and small operators²⁷ specializing in offers for low-cost international calls should be considered in the analysis. While a concrete quantitative estimation of the substitutional effects is difficult to make, survey data show a substantial substitution: 34% of Belgian consumers who make international calls exclusively use free online tools and 40% of the respondents of an Austrian survey indicated that they rather used OTT services than traditional telephony for international calls. The data indicate that OTT usage has a strong impact on traditional intra-EU calls.

Bearing in mind the caveats regarding the data collected, it can indicatively be stated that the overall size of the "problem" seems rather small and that OTT services provide a constraint on telcos. However, going forward, BEREC does intend to continue to work on its overall analysis on this matter, including an analysis of intra-EU SMS, as well a consideration of how the EP proposal could impact operator revenues.

²⁷ Due to the restricted timeframe, NRAs were encouraged not to collect data from small operators as it was considered that data covering 80% of each market is sufficiently representative.

Annex 1: Questionnaire on intra-EU calls

QUESTIONNAIRE ON INTRA-EU CALLS							
	Unit	2013	2014	2015	2016	2017 (estimate)	Comments
FOR FIXED NETWORKS							
Total number of domestic and intra-EU actual minutes in the year (a)	1000 minutes	0	0	0	0	0	
of which to fixed networks (F-F)	1000 minutes						
of which to mobile networks (F-M)	1000 minutes						
Actual Outgoing Minutes Intra-EU calls							
Within a package/ bundle (included in the monthly fee)	1000 minutes	0	0	0	0	0	
of which to fixed networks (F-F)	1000 minutes						
of which to mobile networks (F-M)	1000 minutes						
Outside package/ bundle (included in the monthly fee)	1000 minutes	0	0	0	0	0	
of which to fixed networks (F-F)	1000 minutes						
of which to mobile networks (F-M)	1000 minutes						
Total	1000 minutes	0	0	0	0	0	
of which to fixed networks (F-F)	1000 minutes	0	0	0	0	0	
of which to mobile networks (F-M)	1000 minutes	0	0	0	0	0	
Revenues from outgoing intra-EU calls (Euros)							
Revenues from intra-EU calls (only from minutes outside packages/bundles)	Euros	0	0	0	0	0	
Revenues from F-F intra-EU calls	Euros						
Revenues from F-M intra-EU calls	Euros						
Total Revenues from intra-EU Calls (estimate including revenue share from packages/bundles) (b)	Euros						
Estimate including revenue share from packages/bundles (Euros)	Euros						
If total revenues from intra-EU call are not available: Share of intra-EU calls in the revenue-mix of operators (%)	%						
Total cost of outgoing intra-EU calls (Euros) (c)							
of which cost of intra EU calls terminated in Fixed networks (outpayments)	Euros						
of which cost of intra EU calls terminated in Mobile networks (outpayments)	Euros						
Subscribers (d)							
Total Subscriber (as of 31 December)	1 subscriber						
Of which subscribers using intra-EU calls (e)	1 subscriber						
FOR MOBILE NETWORKS							
Total number of domestic and intra-EU actual minutes in the year (a)	1000 minutes	0	0	0	0	0	
of which to fixed networks (M-F)	1000 minutes						
of which to mobile networks (M-M)	1000 minutes						
Actual outgoing Minutes Intra-EU calls							
Within a package/ bundle (included in the monthly fee)	1000 minutes	0	0	0	0	0	
of which to fixed networks (M-F)	1000 minutes						
of which to mobile networks (M-M)	1000 minutes						
Outside package/ bundle (included in the monthly fee)	1000 minutes	0	0	0	0	0	
of which to fixed networks (M-F)	1000 minutes						
of which to mobile networks (M-M)	1000 minutes						
Total	1000 minutes	0	0	0	0	0	
of which to fixed networks (M-F)	1000 minutes	0	0	0	0	0	
of which to mobile networks (M-M)	1000 minutes	0	0	0	0	0	
Revenues from outgoing intra EU calls (Euros)							
Revenues from intra-EU calls (only from minutes outside packages/bundles)	Euros	0	0	0	0	0	
Revenues from M-F intra-EU calls	Euros						
Revenues from M-M intra-EU calls	Euros						
Total Revenues from intra-EU Calls (estimate including revenue share from packages/bundles) (b)	Euros						
Estimate including revenue share from packages/bundles (Euros)	Euros						
If total revenues from intra-EU call are not available: Share of intra-EU calls in the revenue-mix of operators (%)	%						
Total cost of outgoing intra-EU calls (Euros) (c)							
of which cost of intra-EU calls terminated in Fixed networks (outpayments)	Euros						
of which cost of intra-EU calls terminated in Mobile networks (outpayments)	Euros						
Subscribers (d)							
Total Subscriber (as of 31 December)	1 subscriber						
Of which subscribers using intra-EU calls (e)	1 subscriber						
Number of outgoing SMS Intra EU calls							
Within a package/ bundle (included in the monthly fee)	1000 SMS						
Outside package/ bundle	1000 SMS						
Total	1000 SMS						
Revenues from outgoing Intra-EU SMS (Euros)							
Revenues from intra-EU SMS (only from minutes outside packages/bundles)	Euros						
Total Revenues from Intra-EU SMS (estimate including revenue share from packages/bundles) (b)	Euros						
Estimate including revenue share from packages/bundles (Euros)	Euros						
If total revenues from intra-EU SMS are not available: Share of intra-EU SMS in the revenue-mix of operators (%)	%						
Total cost of outgoing intra-EU SMS (Euros) (c)							
Subscribers using intra-EU SMS (f)	1 subscriber						