Commission for
Communications Regulation

Irish Communications Market

Quarterly Key Data Report

Data as of Q3 2019

QKDR DATA PORTAL

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Corrigendum to Q2 2019 QKDR

Ten operators informed ComReg about incorrect historically provided information.

Note 1: Fixed line retail revenues were revised from Q4 2018 to Q2 2019 following revisions by Vodafone Ireland Limited, with these revisions ranging from +€1.361m to +€2.376m. This impacted market share by retail revenue (figure 2.1.1.1) to the order of 0.6%.

Note 2: Fixed line wholesale revenues were revised from Q1 2016 to Q2 2019 following revisions by ESB Telecoms (Q2 2019), Hibernia Atlantic Cable Systems Limited (Q1 2019 and Q2 2019), BT Communications Ireland Limited (Q4 2017 to Q2 2019) and Virgin Media Ireland Limited (Q1 2016 to Q2 2019), with these revisions ranging from -€132k to -€3.616m. Combined with revisions in note 1, market share by retail and wholesale revenue (figure 2.1.1.2) was impacted to the order of 0.5%.

Note 3: Mobile revenue proportions (figure 4.4.1) were revised from Q1 2018 to Q2 2019 following revenue categorisation revisions by Tesco Mobile Ireland Limited, with these revisions resulting in no net change but component re-categorisation of up to 544k.

Note 4: Fixed broadband subscriptions were revised from Q4 2018 to Q2 2019 following revisions by Vodafone Ireland Limited (Q4 2018 to Q2 2019) and a change of methodology in collating FTTP subscription data by ComReg (see note P on page 9 for more detail). The combined effect of these revisions and amendments resulted in net changes of +2,106 for Q1 2019 and +7,051 for Q2 2019 (both in FTTP). Market shares by subscriptions for fixed broadband were affected (by +0.1% in Q1 2019 and by +0.5% in Q2 2019 for OAOs). Further, revisions by Vodafone resulted in DSL and VDSL changes to residential and non-residential subscription proportions in Q4 2018 to Q2 2019 to the order of 780 to 1,651 for DSL and 407 to 514 for VDSL (total DSL and VDSL counts unaffected).

Note 5: Fixed voice subscriptions (and therefore fixed subscriptions also) were revised from Q2 2016 to Q2 2019 following revisions by Blueface Limited, with these revisions ranging from -36 to -663. In turn, VoB subscriptions were impacted following related revisions by Blueface Limited (Q2 2016 to Q2 2019) and Fastcom (Q2 2019) with these revisions ranging from -36 to -597. Market share by fixed voice subscriptions were not materially impacted (less than 0.04%).

Note 6: Fixed voice traffic (non-residential) was revised for Q2 2019 following a revision from Verizon Networks Limited with this revision resulting in no net change, but a re-categorisation of 4,742 minutes from international to domestic.

Note 7: Fixed broadband data volumes for DSL and VDSL were revised from Q3 2018 to Q2 2019 following revisions from Vodafone Ireland Limited with these revisions ranging from -1.7 petabytes (PB) to -6.8 PB for DSL and -11.6 PB to 18.3 PB for VDSL. Monthly data traffic by subscription type and per subscriber by platform (figures 3.4.2 and 3.4.3 respectively) were impacted by these revisions (as well as by broadband subscription revisions detailed in note 4).

Note 8: Mobile 3G and 4G subscriptions were revised from Q3 2018 to Q2 2019 following revised Tesco Mobile Ireland Limited subscription data with these re-categorisations to the order of 128k to 151k subscriptions (no net changes).

Note 9: Mobile 3G and 4G data volume proportions were revised from Q1 2016 to Q2 2019 following revisions from Three Ireland (Hutchison) Limited (Q1 2016 to Q2 2019) and Tesco Mobile Ireland Limited data (Q3 2018 to Q2 2019) with these revisions ranging from a 7.1 percentage point change observed in Q2 2019 to a 12.8 percentage point change in Q4 2017.

Summary

Overall industry retail revenues for Q3 2019 totalled €883 million. There were 1,454,925 fixed broadband subscriptions this quarter which was an increase of 0.7% from Q2 2019 and an increase of 2.5% compared to Q3 2018. Overall voice traffic volumes decreased by 1.0% this quarter. Presented below is a tabular summary of the data presented throughout this Quarterly Key Data Report (QKDR).

Irish Quarterly Communications Market Data Q3 2019				
	Q3 2019	**Q2 2019**	**Quarterly Change**	**Annual change**
Total Retail Market Revenues[1]	€883,813,773	€880,320,648	+0.4%	-0.03%
Fixed Line Retail Revenues[2]	€338,373,312	€344,064,985	-1.7%	-2.1%
Mobile Retail Revenues	€400,142,795	€395,761,964	+1.1%	+0.7%
Broadcasting Retail Revenues	€145,297,666	€140,493,699	+3.4%	+2.9%
Fixed Line Wholesale Revenues[3]	€130,390,226	€128,144,946	+1.8%	-0.6%
Mobile Wholesale Revenues	€46,590,111	€44,462,758	+4.8%	-0.2%
Total Voice Traffic (Minutes)	3,705,754,628	3,744,862,228	-1.0%	-4.6%
Fixed Voice Traffic (Minutes)	620,861,947	616,616,924	+0.7%	-21.7%
Mobile Voice Traffic (Minutes)	3,084,892,681	3,128,245,304	-1.4%	-0.3%
Fixed Broadband Subscriptions[4]	1,454,925	1,445,435	+0.7%	+2.5%
Fixed Subscriptions	2,221,035	2,224,921	-0.2%	-1.2%
Fixed Voice Subscriptions[5]	1,422,162	1,433,821	-0.8%	-2.1%
Total Mobile Subscriptions	6,540,578	6,418,952	+1.9%	+4.8%
Machine to Machine Subscriptions	1,154,738	1,112,082	+3.8%	+18.5%
Mobile Broadband Subscriptions	306,633	303,836	+0.9%	+2.6%
Mobile Voice Subscriptions	5,079,207	5,003,034	+1.5%	+2.3%

[1] Mobile and fixed line wholesale revenues are excluded from this figure.

[2] Fixed line retail revenues were revised for Q2 2019. See note 1 within the corrigendum.

[3] Fixed line wholesale revenues were revised from Q1 2016 to Q2 2019. See note 2 within the corrigendum.

[4] Fixed broadband subscriptions were revised from Q4 2018 to Q2 2019. See note 4 within the corrigendum.

[5] Fixed voice subscriptions were revised from Q1 2016 to Q2 2019. See note 5 within the corrigendum.

- Overall electronic communications network and service retail revenues at the end of Q3 2019 were over €883.9 million for the quarter.
- At the end of Q3 2019 there were 1,422,162 fixed voice subscriptions, a decrease of 0.8% since last quarter and a decrease of 2.1% since Q3 2018.
- Total voice traffic minutes decreased by 1.0% this quarter and were 4.6% lower than in Q3 2018. Mobile minutes form the majority of voice minutes at 83.2%, with fixed minutes representing the remaining 16.8%. Mobile voice minutes decreased by 1.4% while fixed voice minutes decreased by 0.7% this quarter.
- Fixed broadband subscriptions increased by 0.7% this quarter and were up by 2.5% compared to Q3 2018. VDSL (+0.3%), FTTP (+14.2%), cable (+0.5%), FWA (+5.3%) and mobile broadband (+0.9%) showed positive growth this quarter. DSL (-5.5%) and satellite (-2.0%) fell this quarter.
- The estimated fixed broadband household penetration rate was 68.3% in Q3 2019. The fixed broadband per capita penetration rate was 29.5%. The broadband per capita penetration rate (including mobile broadband) was 35.7%.
- Average fixed broadband speeds continue to increase. In Q3 2019 approximately 89.5% of all fixed broadband subscriptions were equal to or greater than 10Mbps up from 86.7% in Q3 2018. 80.9% of all fixed broadband subscriptions were equal to or greater than 30Mbps, up from 75.9% in Q3 2018.
- At the end of Q3 2019 there were 6,540,578 mobile subscriptions (inc. mobile broadband and M2M), an increase of 1.9% since the last quarter. Mobile subscriptions (exc. mobile broadband and M2M) totalled 5,079,207, an increase of 1.5% since last quarter.
- There were 1,154,738 M2M subscriptions at the end of Q3 2019. This is an increase of 18.5% since Q3 2018 and represents 17.7% of all mobile subscriptions.
- The number of voice and data subscribers using 3G/4G networks increased to 4,825,020, up by 1.7% from Q2 2019 and up by 3.0% compared to Q3 2018.
- There were 513,071 gross additions in the number of mobile subscriptions in Q3 2019. Of these, 103,467 were subscriptions with ported phone numbers. On average, there were 97,228 mobile numbers ported and 484,704 total gross additions per quarter over the last 12 months.

Notes to data:

A. Data published in previous QKDRs may have been amended since their publication. Amendments to the Q3 2019 QKDR are noted in the corrigendum notice on page 5 of this report.

B. Extracts of data used in this report can be downloaded at http://www.comreg.ie/industry/electronic-communications/data-portal

C. Further explanations and descriptions of data supplied in this report can be found in the accompanying explanatory memorandum 19/112a.

D. While quarter on quarter comparisons are made in the report, definitive conclusions with regard to trends cannot be drawn from this and year on year comparisons are used to improve the reliability of the analysis.

E. In most cases data has been rounded to one decimal place in this report. Not all charts in this report may sum exactly to 100% due to rounding.

F. A number of external sources are used for international comparisons. These include the CSO, Eurostat and Strategy Analytics (Teligen).

G. Irish population estimates of 4,932,900 and an estimated household number of 1,893,700 are used in this report. These statistics are obtained from the Central Statistics Office (CSO) Labour Force Survey (LFS) for Q3 2019.

H. Cable broadband traffic reported from Q3 2015 to Q2 2018 is based on estimates from Virgin Media Ireland Limited due to issues with reporting accurate data.

I. From Q4 2017 broadcasting revenue include data provided by Sky Ireland. Prior to this data had not been included in previous QKDRs. Data prior to Q4 2017 has not been made available. Comparisons with revenues from Q4 2017 are therefore not valid.

J. From Q4 2017 total fixed subscriptions include actual TV subscription data provided by Sky Ireland. Prior to this, actual data had not been included. For data prior to Q4 2017 ComReg estimated Sky Ireland's TV subscriber data when sold in bundles, with this estimation based on extrapolations from market survey data. Comparisons prior to Q4 2017 are therefore not valid.

K. ComReg was previously notified that mobile data traffic reported prior to Q2 2018 from Three Ireland (Hutchison) Limited was underreported (phones and mobile broadband). Due to issues with reporting systems the range of periods affected was not provided by Three Ireland (Hutchison) Limited. ComReg, however does not believe the underreporting to be of material impact.

L. Subscriptions for 2G, 3G and 4G from Three Ireland (Hutchison) Limited for Q1 2019 were based on estimates due to issues with reporting measured data.

M. ComReg is aware of developments in accounting standards applicable to industry, namely IFRS 15 regarding revenue recognition. Revenue data for QKDR Q3 2019 has been assessed accordingly and in line with the same approach to that of previous QKDRs in order to maintain consistency in relevant revenue-related trends.

N. In QKDR Q2 2019 the methodology underpinning figure 4.3.6 was amended. Previously roaming data volumes were included in the '2G and 3G' category given no technology breakout. With increasing roaming data volumes this would lead to over-represented '2G and 3G' proportions. Therefore, in order to improve accuracy, roaming data volumes have been excluded with the same approach applied retrospectively. M2M and auxiliary traffic which was assumed to be 2G or 3G has also been removed. Figure 4.3.6 now consists solely of 3G and 4G traffic.

O. ComReg notes off-trend 3G and 4G proportions in Q2 2019 compared to Q3 2019 as presented in *Figure 4.2.6 – Mobile Subscriptions by Network Used*. This is directly due to off-trend subscription data submitted from Three Ireland (Hutchison) Limited, currently under reservation at the time of publication, pending further investigation.

P. In QKDR Q3 2019 the methodology applied in compiling FTTP subscription data was amended to include additional FTTP subscription data available to ComReg via other reporting sources. This was retrospectively implemented from Q1 2019 and used in the compilation of *Figure 3.1.10b - FTTP Subscription Market Share*, itself published for the first time in QKDR Q3 2019 reflecting salient market developments.

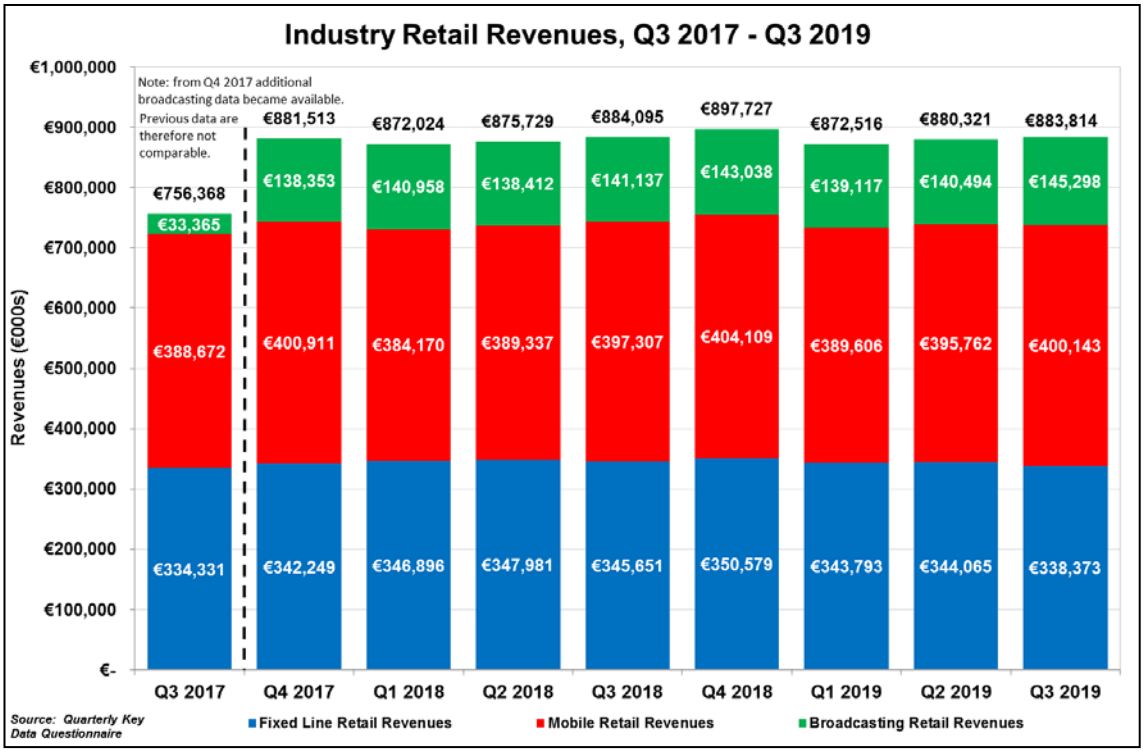
1. Overall Market Data

Data presented in this Quarterly Key Data Report is based on questionnaires completed by certain authorised operators[6] for the period from 1 July to 30 September 2019. The report is based on submissions from 45 active operators.

1.1 Overall Electronic Communications Revenues[7]

Figure 1.1.1 shows the developments in revenues attributable to the provision of fixed line, mobile and certain TV broadcasting services. In Q3 2019 mobile revenues accounted for 45.3% of total industry retail revenues followed by fixed line (38.3%) and broadcasting (16.4%) revenues. This quarter, mobile retail revenues increased by 1.1% and increased by 0.7% compared to Q3 2018. Fixed line retail revenues decreased by 1.7% this quarter and decreased by 2.1% compared to Q3 2018.

Figure 1.1.1 – Fixed, Mobile & Broadcasting Retail Revenues[8]



According to the CSO, Ireland's Gross National Product for Q2 2019[9] was approximately €60.4 billion. Based on the Q2 2019 retail revenue data reported to ComReg by operators in the Irish communications sector, these revenues were approximately 1.5% of GNP in that quarter.

[6] Operators who generate in excess of €500,000 in retail and/or wholesale revenues from electronic communications networks and services per annum. See table A2 in the Appendix on page 81 for the list of respondents who submitted data to ComReg.

[7] Further detail on terms and definitions - ComReg Doc. 19/112a Explanatory Memorandum.

[8] Fixed line retail revenues were revised from Q4 2018 to Q2 2019. See note 1 in the corrigendum.

[9] Latest period for which GNP data is available.

1.2 Overall Call Volumes

Figure 1.2.1 – Fixed and Mobile Voice Call Volumes (Minutes)[10]

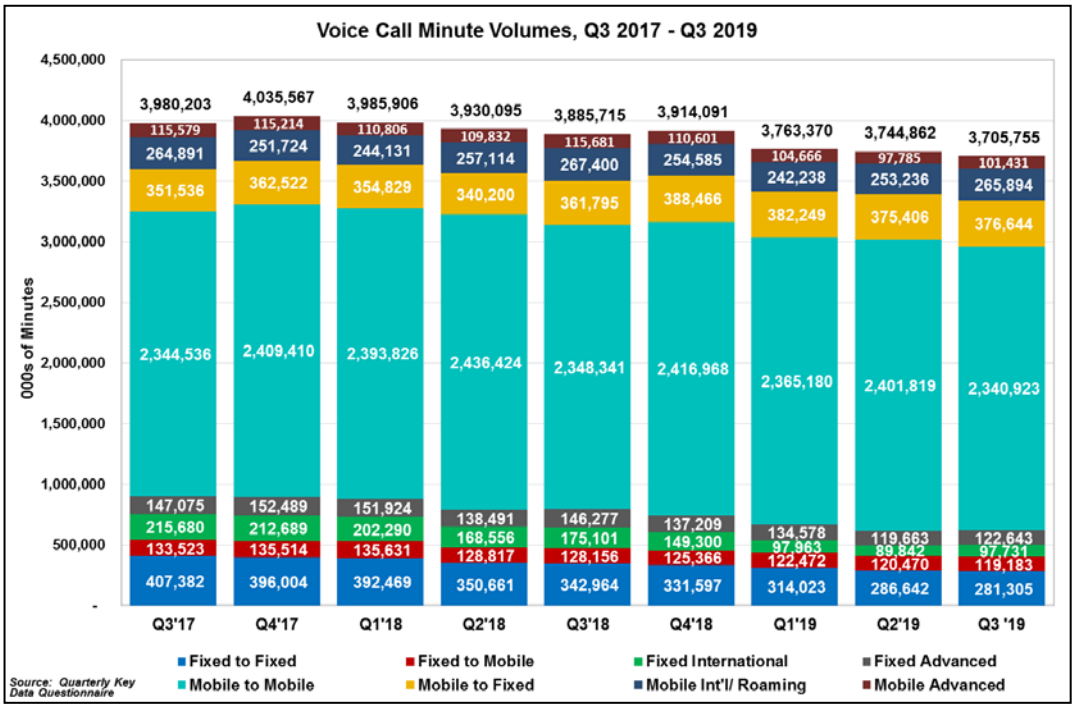


Figure 1.2.1 profiles volumes of originating voice calls by call type on both fixed and mobile networks on a quarterly basis. There was a decrease in total voice minutes this quarter. Voice minutes for Q3 2019 totalled 3.706 billion minutes, there were 15.128 billion minutes in the twelve months to the end of Q3 2019. Total voice minutes decreased by 1.0% from the previous quarter[11] and decreased by 4.6% since Q3 2018.

It should be noted that managed VoB minutes are included with calls originating from fixed networks in figure 1.2.1, and are split according to the same call categorisations (i.e. domestic, international, mobile, other).

Mobile originating voice minutes (down 0.3% on Q3 2018) accounted for 83.2% of all voice minutes in Q3 2019 (compared to 79.6% in Q3 2018) while traffic originating on fixed line networks (down 21.7% on Q3 2018) accounted for the remaining 16.8% of all voice minutes (compared to 20.4% in Q3 2018). Figure 1.2.2 shows total voice traffic in Ireland for Q3 2019.

[10] Fixed advanced minutes include premium rate services minutes, freephone minutes, payphone minutes, operator services minutes, national and international virtual private network minutes. Mobile advanced minutes include premium rate services minutes and other mobile minutes such as voicemail, DQ, call completion minutes etc.

[11] Fixed voice traffic was revised for Q2 2019. See note 6 within the corrigendum.

Figure 1.2.2 – Total Voice Traffic

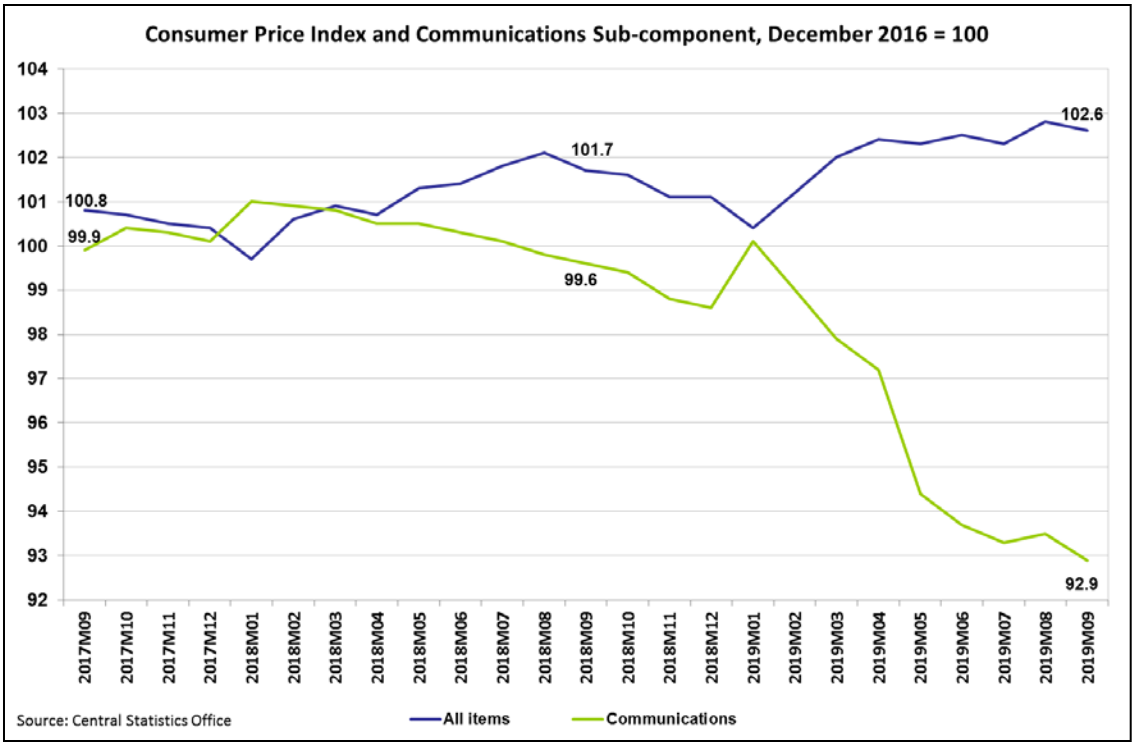
	Q3 2019 Mins	Q1'19 – Q2'19 Growth	Q2'18 – Q2'19 Growth
Fixed Voice Minutes	**620,861,947**	**+0.7%**	**-21.7%**
Mobile Voice Minutes	**3,084,892,681**	**-1.4%**	**-0.3%**
Total Voice Minutes	**3,705,754,628**	**-1.0%**	**-4.6%**

1.3 Communications and the Consumer Price Index

Figure 1.3.1 shows the monthly change in the Consumer Price Index (CPI) and the communications sub-component from September 2017 to September 2019. At the end of Q3 2019 the CSO weighting for the communications basket was 2.96%[12] of the total CPI, down from 3.04% in September 2018.

Using December 2016 as the base period, overall communications prices have decreased over the last 12 months. Since Q3 2018 communication prices have decreased by 6.7 percentage points, while the overall CPI has increased by 0.9 of a percentage point.

Figure 1.3.1 – Consumer Price Index and Communications Sub-Component



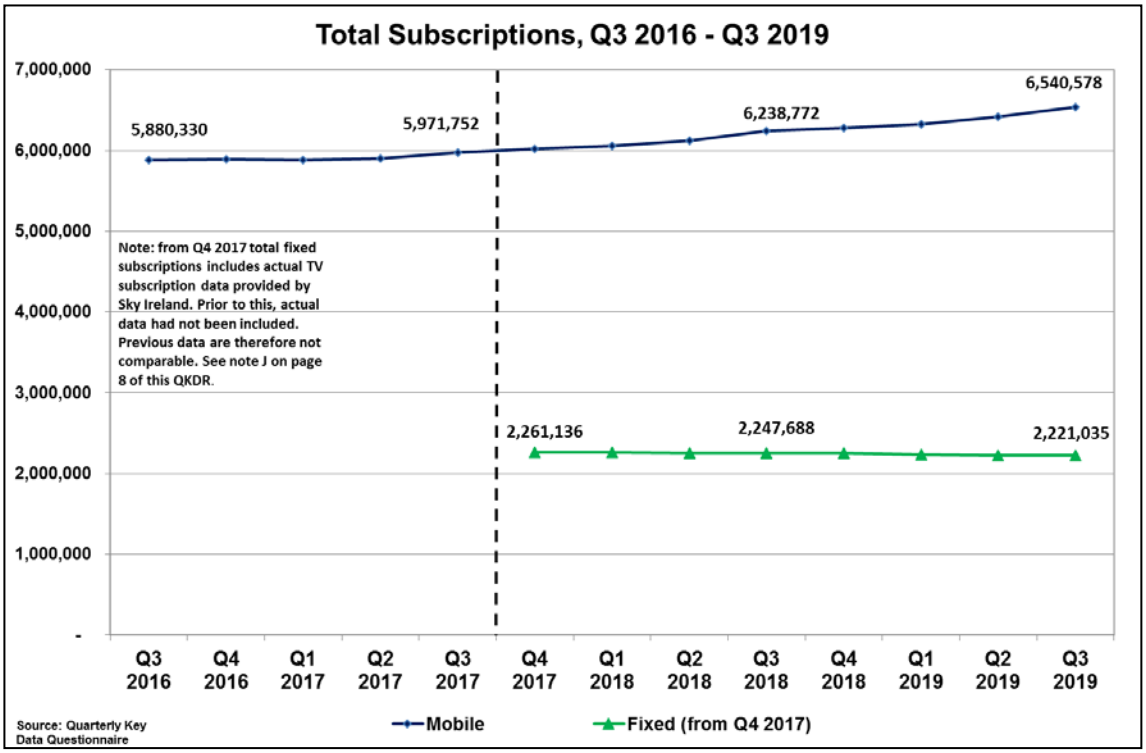
[12] https://www.cso.ie/en/releasesandpublications/er/cpi/consumerpriceindexseptember2019/

1.4 Fixed and Mobile Market Retail Voice, Internet and TV Subscriptions

Figure 1.4.1 shows the total number of mobile subscriptions (inc. mobile broadband and M2M) and the estimated number of fixed subscriptions to voice, internet and TV services (both single play and bundled subscriptions) in Ireland.

Customers purchasing either a single fixed service or more than one service (as part of a bundle) are included in the fixed subscriptions category. Total mobile subscriptions have increased by 1.9% since Q2 2019 while fixed subscriptions decreased by 0.2% over the quarter[13]. It should be noted that it is possible that a customer may have more than one subscription, particularly where a mobile customer has more than one SIM card or in the case of a business customer with multiple fixed line subscriptions across several offices.

Figure 1.4.1 – Total Subscriptions (Fixed and Mobile)[14]



[13] Note: from Q4 2017 additional fixed subscription data became available. Previous data are therefore not comparable. This is reflected in Figure 1.4.1 where, from Q4 2017, a new fixed subscription trend began. See note J on page 8 of this QKDR. Mobile subscriptions were unaffected.

[14] Fixed retail market subscriptions by type were revised from Q2 2016 to Q2 2019. See note 5 in the corrigendum.

2. Fixed Market Data

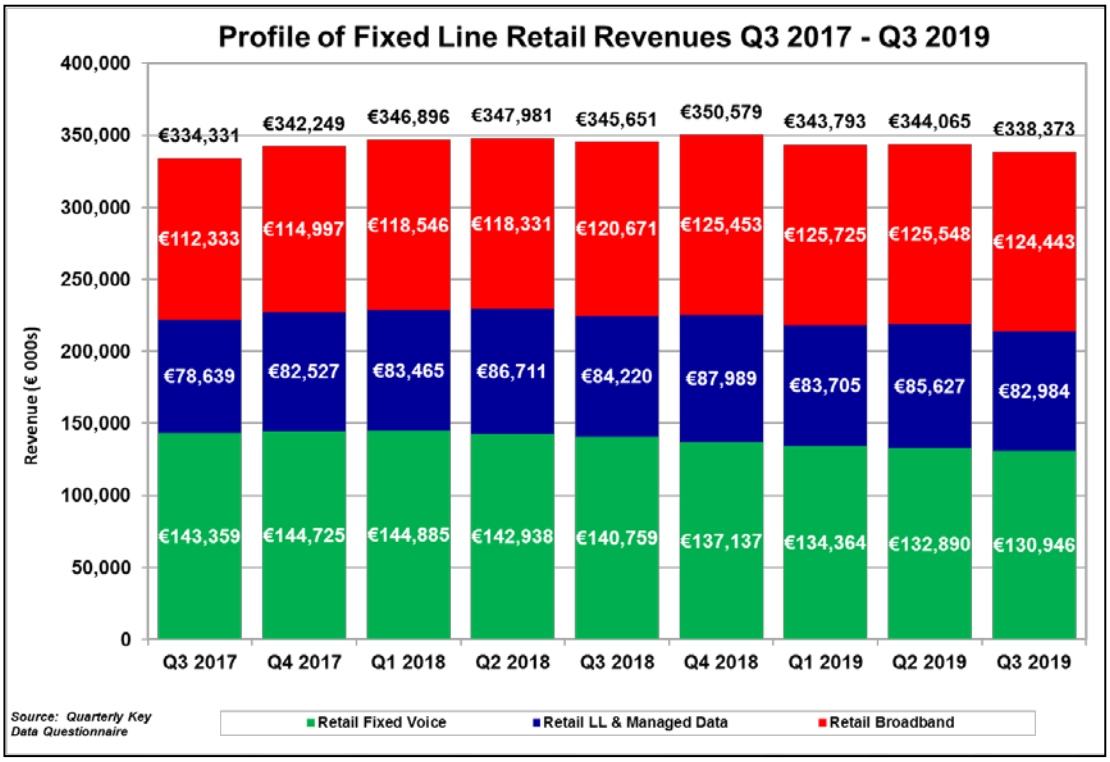
2.1 Fixed Line Revenues[15]

Figure 2.1.1 shows the profile of fixed line retail revenues in Ireland over the last two years. Total fixed line retail revenues for Q3 2019 were over €338 million. This was a decrease of 1.7% on Q2 2019 revenues and a 2.1% decrease on Q3 2018 revenues[16].

Retail broadband revenues (+3.1%) increased on Q3 2018 while retail leased lines, managed and other data services revenues (-1.5%) and retail fixed voice revenues (-7.0%) fell.

Comparing Q3 2018 to Q3 2019, the proportion of retail fixed line revenues attributable to retail leased lines, managed data and other advanced data services increased by 0.2 of a percentage point to 24.5% while retail broadband revenue's share increased by 1.9 percentage points year-on-year to 36.8%. The proportion of retail fixed voice revenues fell by 1.9 percentage points to 38.7% of overall fixed line retail revenues.

Figure 2.1.1 – Profile of Fixed Line Retail Revenues



Fixed line wholesale revenues were over €130 million in Q3 2019, the greatest share of which were related to interconnect and wholesale fixed narrowband access revenues, followed by wholesale leased lines, managed and other data services revenues and

[15] Additional revenue data became available from new operators in Q3 2017 and Q1 2018. Hence, revenue and market share information in Figures 2.1.1 to 2.1.1.2 are not directly comparable to information in previous periods.

[16] Fixed line retail revenues were revised from Q4 2018 to Q2 2019. See note 1 within the corrigendum.

wholesale broadband access revenues. Wholesale revenues increased by 1.8% compared to Q2 2019 but were down by 0.6% since Q3 2018[17].

2.1.1 Authorised Operators' Share of Fixed Line Revenues

Figure 2.1.1.1 below outlines the revenue shares for the fixed retail market (comprising narrowband, broadband, leased line, managed and other data revenues) held by the incumbent fixed line operator (Eir), authorised operators having at least a 2% market share, and all other authorised operators (OAOs) with market share less than 2%.

In Q3 2019, Eir had the highest retail revenue share in the fixed retail market with 39.6% market share. Virgin Media Ireland had 16.6%, followed by Vodafone (fixed only) with 14.0%, Sky Ireland (6.9%), BT (4.3%) and AT&T (2.5%). OAOs accounted for the remaining 14.0%.

Figure 2.1.1.1 – Fixed Retail Revenue Market Shares[18]

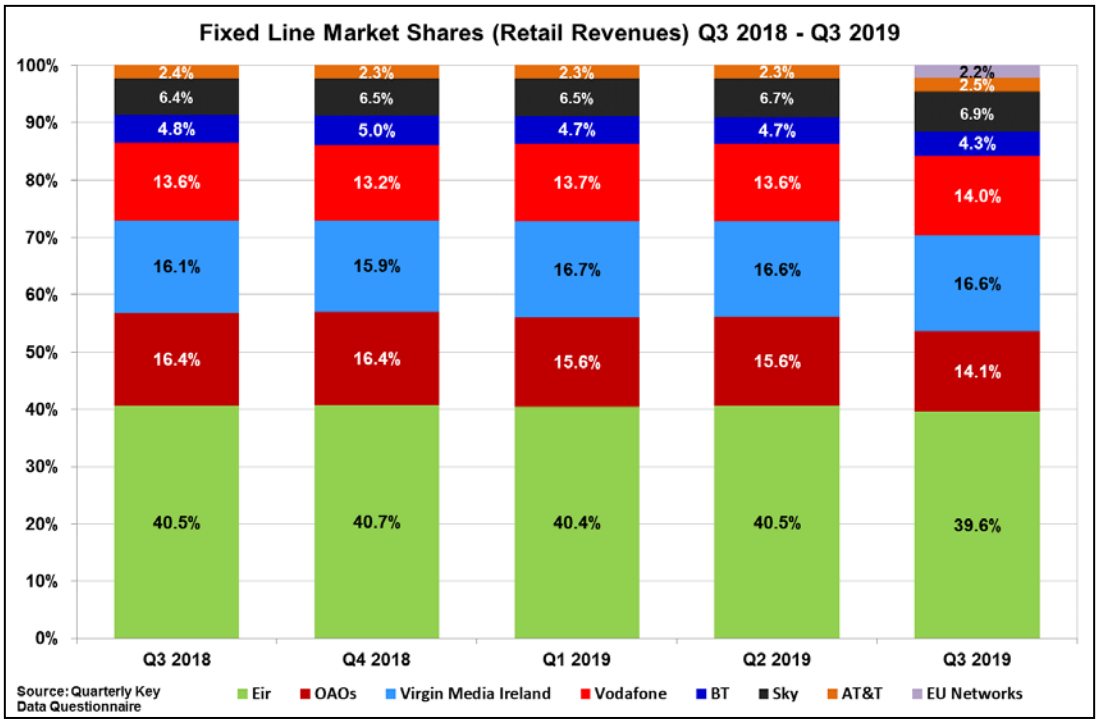


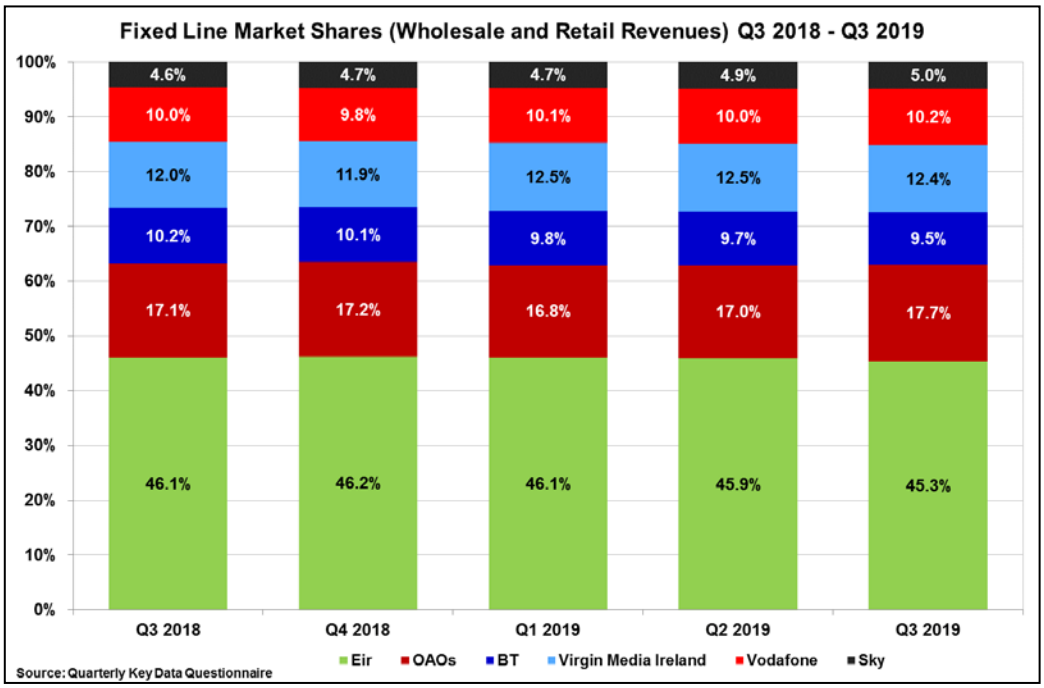
Figure 2.1.1.2 outlines the revenue shares in the fixed market (comprising fixed line retail and wholesale revenues). When making comparisons, it is important to note that the market shares presented below are based on shares across all fixed wholesale and retail revenue streams and some operators may not offer products and services across all segments of these markets.

[17] Fixed line wholesale revenues were revised from Q1 2016 to Q2 2019. See note 2 within the corrigendum.

[18] Fixed line retail revenues were revised from Q4 2018 to Q2 2019. This affected market share proportions. See note 1 within the corrigendum.

In Q3 2019, Eir had the highest fixed revenue market share with 45.3%. ComReg estimates that the next four largest operators (BT Ireland, Sky Ireland, Virgin Media Ireland and Vodafone (fixed only)) contribute a further 37.0% share of total (retail and wholesale) industry revenue, while OAOs account for the remaining 17.7%.

Figure 2.1.1.2 – Fixed Revenue Market Shares[19]



2.2 Fixed Line Access Paths[20] and Subscriptions

2.2.1 Access Paths and VoB Subscriptions

Figure 2.2.1.1 presents the total number of narrowband copper fixed access paths (PSTN and ISDN) and Voice over Broadband (VoB) subscriptions. PSTN and ISDN access paths are usually used for voice services and internet access. There were over 1.24 million direct and indirect PSTN and ISDN access[21] paths in the Irish market in Q3 2019. This represents a decrease of 2.2% on the last quarter and a decline of 7.1% since Q3 2018. The number of PSTN access paths has decreased by 2.3% from last quarter and declined by 6.6% since Q3 2018. The number of ISDN access paths decreased by 1.7% since Q2 2019 and decreased by 9.4% since Q3 2018. At the same time, VoB subscriptions increased by 2.8% since Q2 2019 and rose by 9.2% since Q3 2018.

[19] Fixed line wholesale revenues were revised for Q1 2019. This affected market share proportions. See note 2 within the corrigendum.

[20] Access paths are not synonymous with access lines as for example in the case of ISDN paths, there may be more than one path provided via a single ISDN line.

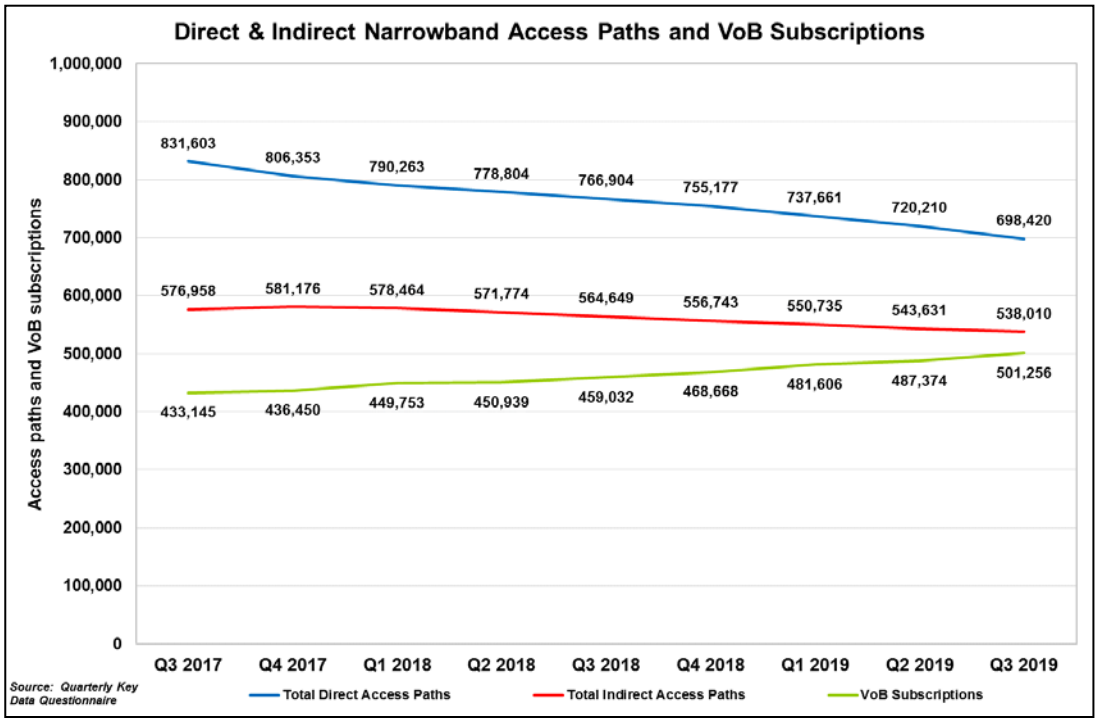
[21] Indirect access paths relate to telephone lines provided to customers by means of Carrier Pre-select (CPS), Wholesale Line Rental (WLR) or Switchless Voice (SV). CPS allows the user to receive all or a portion of calls from one provider and line rental from another provider (usually Eir). SB-WLR (also known as Single Billing-WLR) allows the user to receive every aspect of telephone service, including all calls and line rental from one single supplier. SV also known as White Label Access-Voice Access (WLA-(Voice)) is a switchless voice service which allows an operator to purchase end-to-end call services without the need to have its own interconnection infrastructure.

Figure 2.2.1.1 – Narrowband Fixed Access Paths and VoB Subscriptions

	Q3 2019	Q2'19 – Q3'19 Growth	Q3'18 – Q3'19 Growth
PSTN	990,178	-2.3%	-6.6%
ISDN Basic	96,520	-1.6%	-6.9%
ISDN Fractional	38,432	-1.3%	-10.1%
ISDN Primary	111,300	-1.9%	-11.3%
Total ISDN	246,252	-1.7%	-9.4%
Total PSTN and ISDN	1,236,430	-2.2%	-7.1%
VoB Subscriptions[22]	501,256	+2.8%	+9.2%

Figure 2.2.1.2 presents the total number of narrowband fixed access paths broken out by direct and indirect access as well as VoB subscriptions. In Q3 2019, indirect access accounted for 43.5% of all narrowband access paths in the fixed line market.

Figure 2.2.1.2 – Direct & Indirect Narrowband Fixed Access Paths and VoB Subscriptions[23]



2.2.2 Indirect Access Paths

Figure 2.2.2 illustrates the overall number of indirect PSTN and ISDN paths provided by means of either Carrier Pre-Selection (CPS) only, Single Billing Wholesale Line Rental

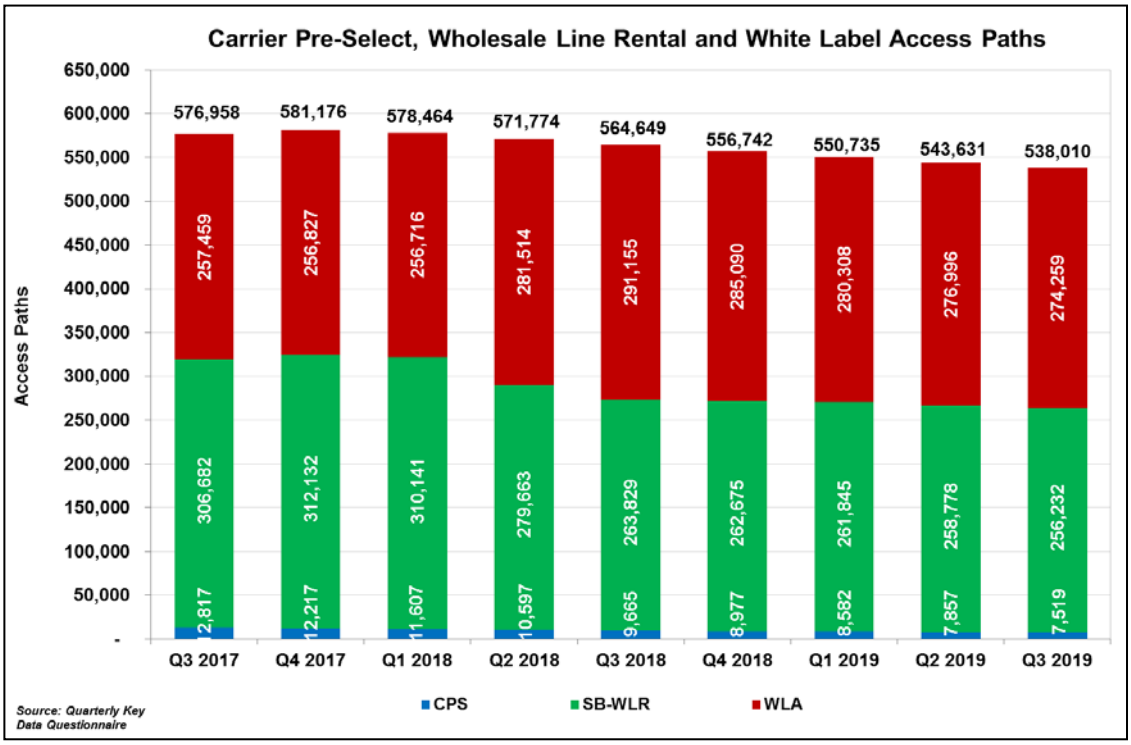
[22] Additional data on VoB subscriptions became available from new operators in Q1 2018. Hence, revenue and market share information in Figures 2.1.1, 2.1.1.1 and 2.1.1.2 are not directly comparable to information in previous periods.

[23] VoB subscriptions were revised from Q2 2016 to Q2 2019. See note 5 within the corrigendum.

(SB-WLR) and White Label (Voice) Access (WLA). In Q3 2019, there were 538,010 indirect access paths in Ireland. The number of indirect access paths decreased by 1.0% this quarter and declined by 4.7% in the year to Q3 2019. Some of this decline may be related to the increase in VoB subscriptions.

The data indicates that single-bill services, i.e. SB-WLR or WLA rather than CPS only (i.e. a calls only service, excluding line rental) continues to be the predominant form of indirect access. SB-WLR used by OAOs now accounts for 47.6% of indirect access paths compared to 53.2% in Q3 2017. WLA paths account for 51.0% of total indirect access paths compared to 44.6% in Q3 2017. The share of CPS only indirect access paths has declined by 0.8 of a percentage point in the last two years and accounted for 1.4% of overall indirect access paths in Q3 2019.

Figure 2.2.2 – Narrowband Indirect Access Paths

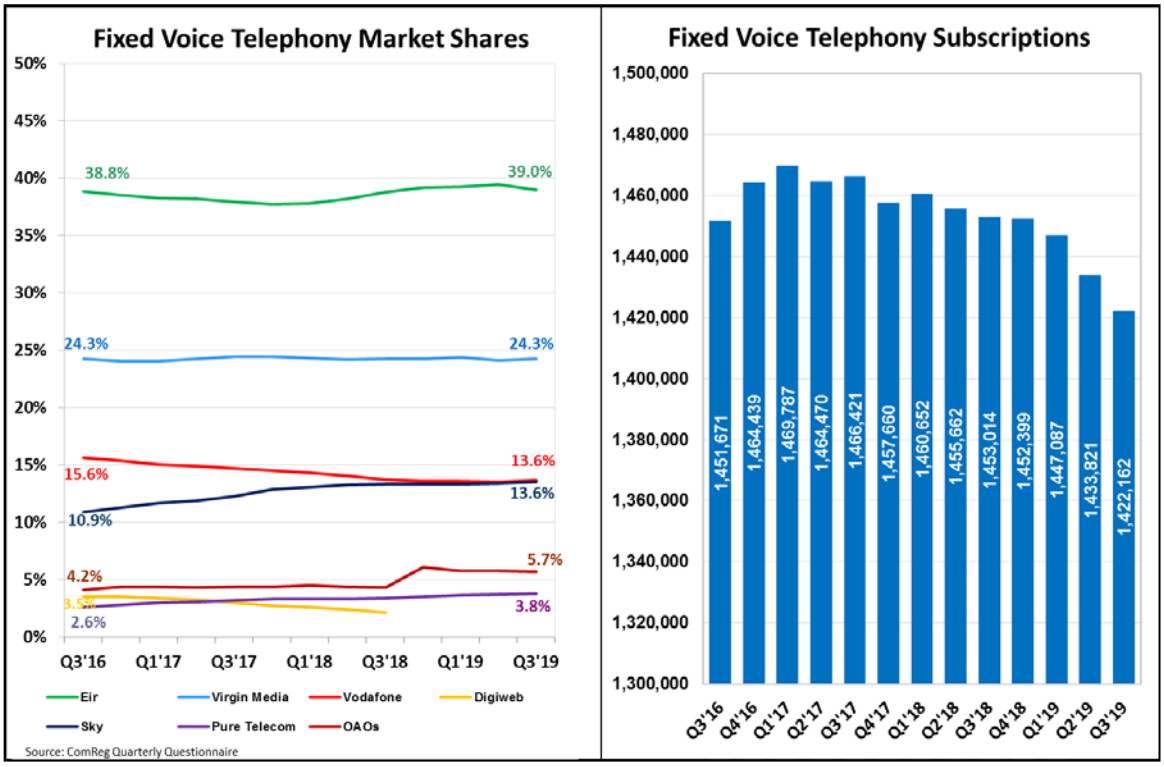


2.2.3 Fixed Voice Subscriptions

Figure 2.2.3 shows the estimated number of retail customers/subscriptions to fixed voice services (either standalone or as part of a bundle) and operators' market shares based on these subscriptions. At the end of Q3 2019 there were 1,422,162 fixed voice subscriptions (a decrease of 0.8% since Q2 2019 and a decrease of 2.1% on Q3 2018). As of Q3 2019 Eir had 39.0% of all fixed voice subscriptions followed by Virgin Media

24.3%), Vodafone (13.6%), Sky (13.6%) and Pure Telecom (3.8%). OAOs accounted for the remaining 5.7% of fixed voice subscriptions[24].

Figure 2.2.3 – Fixed Voice Subscriptions[25]



2.2.4 Fixed Market Retail Subscriptions by Type[26]

Figure 2.2.4 shows the estimated proportion of retail customers/subscriptions to fixed line telephony services (mobile is excluded from single play subscriptions, but included when part of a bundle e.g. double/triple/quad play) broken out by those with a single service and those taking a bundle of two or more services (subscriptions mean a customer with at least one contract with an electronic communications service provider). [27] Single play subscriptions include fixed line services only (including

[24] Note in Q4 2018 the market share for Digiweb fell below 2% and therefore was included into the OAO category. Previously Digiweb's market share fell below the 2% market share point in Q3 2017, revisions for fixed telephony subscriptions (note 3 in the corrigendum) resulted in the change observed.

[25] Fixed voice subscriptions were revised from Q2 2016 to Q2 2019. Market shares not materially impacted. See note 5 in the corrigendum.

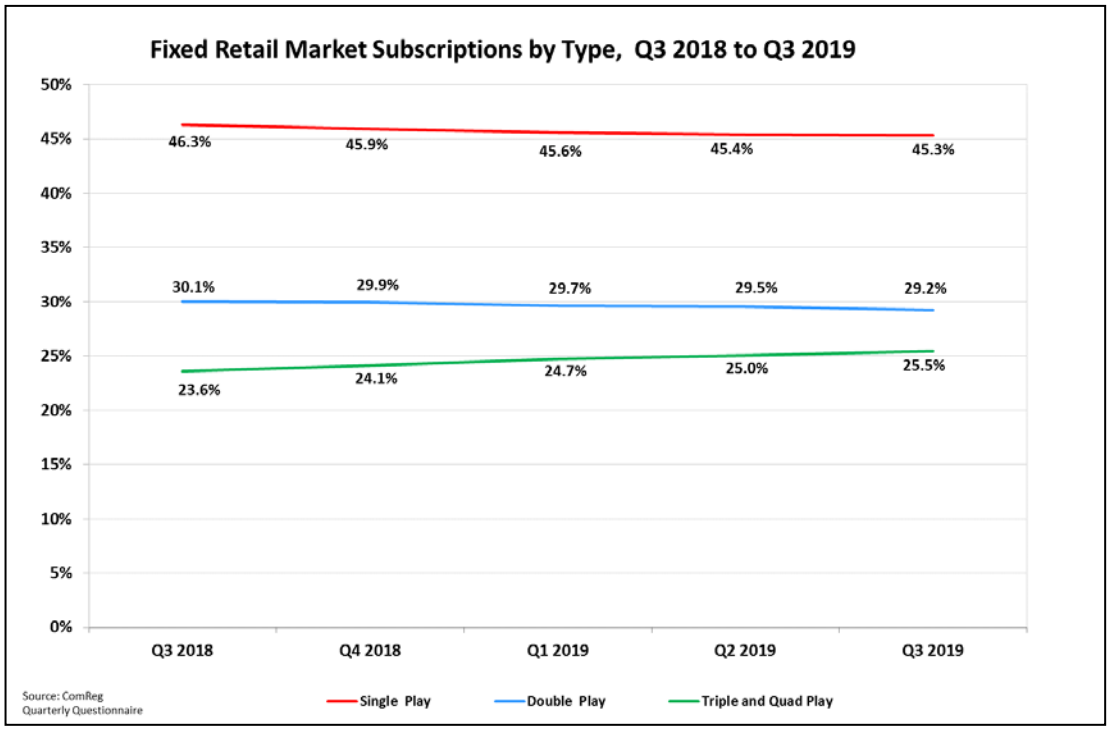
[26] As noted on page 8 (Notes to data, J), from Q4 2017 total fixed subscriptions now include actual TV subscription data provided by Sky Ireland. Prior to this, actual data had not been included. For data prior to Q4 2017 ComReg estimated Sky Ireland's TV subscriber data when sold in bundles, with this estimation based on extrapolations from market survey data. Comparisons with fixed subscription data prior to Q4 2017 are therefore not valid.

[27] Double play subscriptions can refer to either fixed telephony and broadband or television or mobile telephony; television and the broadband; mobile telephony and broadband or television subscriptions. Triple play subscriptions can refer to fixed telephony and broadband and television; fixed telephony and mobile telephony and broadband; fixed telephony and mobile telephony and television; or, mobile telephony and broadband and television subscriptions. Quadruple play subscriptions refer to fixed telephony, broadband, television and mobile subscriptions.

standalone cable TV, IPTV and satellite subscriptions) which means that standalone mobile voice, standalone mobile broadband subscriptions are excluded from this figure.

At the end of Q3 2019 there were 2,221,035 fixed retail subscriptions across both business and residential customers (a business customer may have multiple subscriptions). In Q3 2019 45.3% of fixed market retail subscriptions were single play, 29.2% were double play (a bundle of two services) and 25.5% were a combination of triple play (a bundle of three services) and quadruple play (a bundle of four services).

Figure 2.2.4 – Fixed Market Retail Subscription Type



2.3 Fixed Voice Call Volumes

Fixed voice traffic in Q3 2019 was just over 620 million minutes, which was a 0.7% increase on Q2 2019 but a fall of 21.7% since Q3 2018.

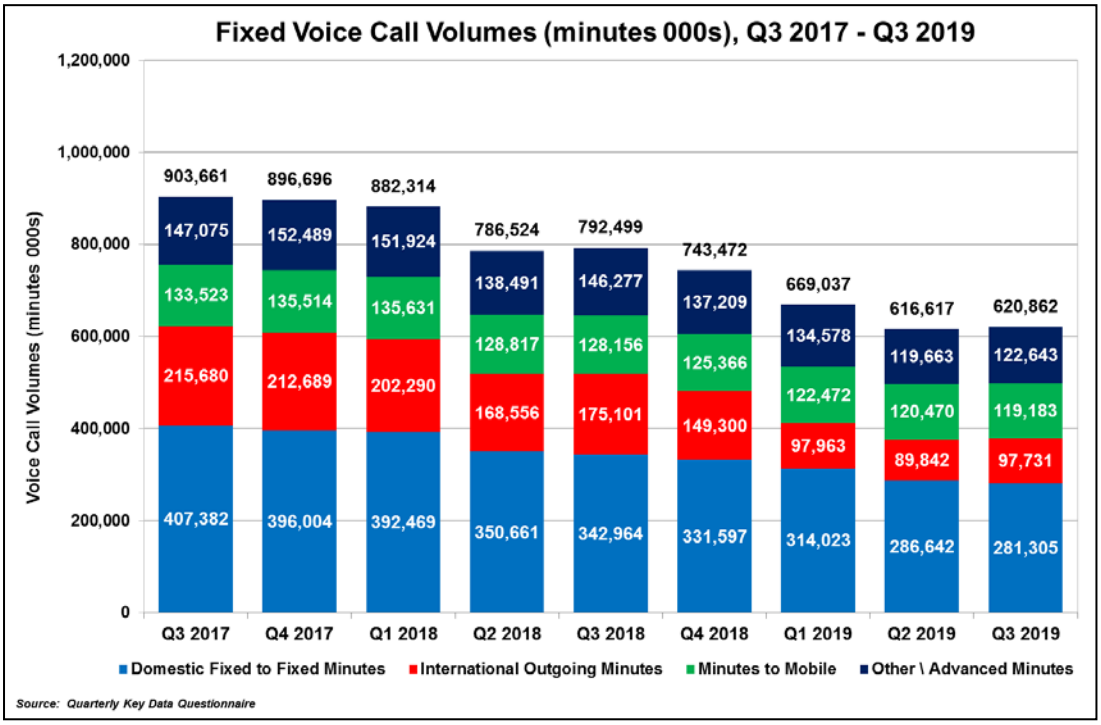
Managed voice over broadband (VoB) minutes account for approximately 20.0% of total fixed voice minutes down from 24.2% in Q3 2018.

The numbers quoted in this QKDR include managed VoB services only (for example by Eir, Virgin Media, Vodafone and others such as Blueface) and do not include unmanaged or over-the-top VoB services offered by providers such as Skype.

It should be noted that the split of managed VoB minutes by category (i.e. domestic, international, mobile, other) is placed into those respective fixed minutes categories in figures 2.3.1, 2.3.2 and 2.3.3.

Figure 2.3.1 shows the breakdown of fixed voice call volumes by call type. Domestic fixed to fixed minutes accounted for 45.3% of all fixed voice traffic in Q3 2019. International outgoing minutes accounted for 15.7% of all fixed voice traffic. The share of fixed to mobile minutes was 19.2% while other/advanced minutes (which include premium rate minutes) represented 19.8% of all fixed voice traffic[28].

Figure 2.3.1 – Fixed Voice Call Volumes (Minutes)[29]



Figures 2.3.2 and 2.3.3 show the change in the average monthly fixed voice call minutes per business and residential subscribers respectively. In Q3 2019 the average business subscriber made 526 minutes of voice calls[30]. The average residential subscriber usage was 78 minutes per month.

[28] Additional data on fixed voice call minutes became available from new operators in Q1 2018. Hence, call volume information in Figure 2.2.3 is not directly comparable to information in previous periods.

[29] Domestic Calls include local & national calls. Advanced service and other minutes include minutes to premium rate numbers, freephone numbers, callsave, operator services, VPN minutes, payphones and other services.

[30] Fixed voice traffic (non-residential) was revised for Q2 2019. See note 6 in the corrigendum.

Figure 2.3.2 – Fixed Voice Call Volume per Business Subscriber (Minutes)

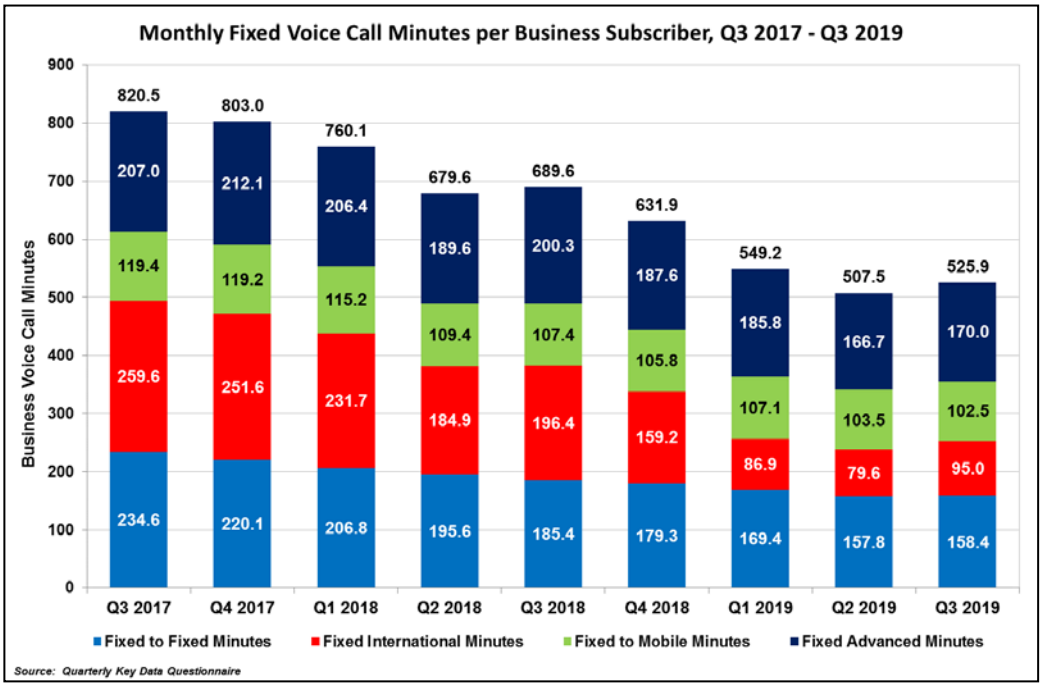
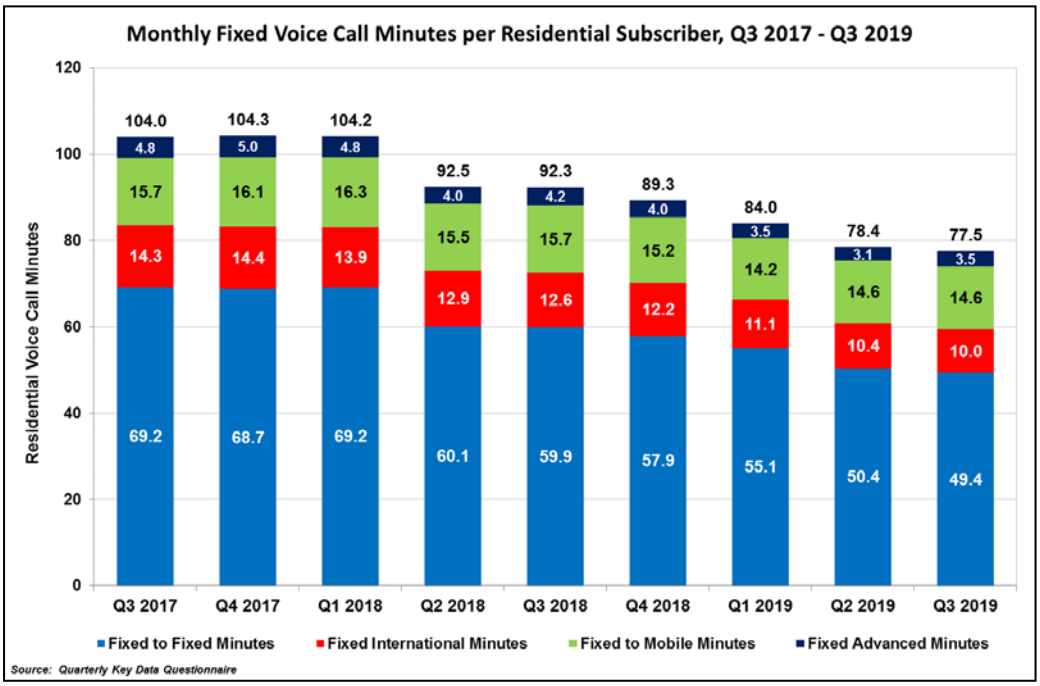


Figure 2.3.3 – Fixed Voice Call Volume per Residential Subscriber (Minutes)



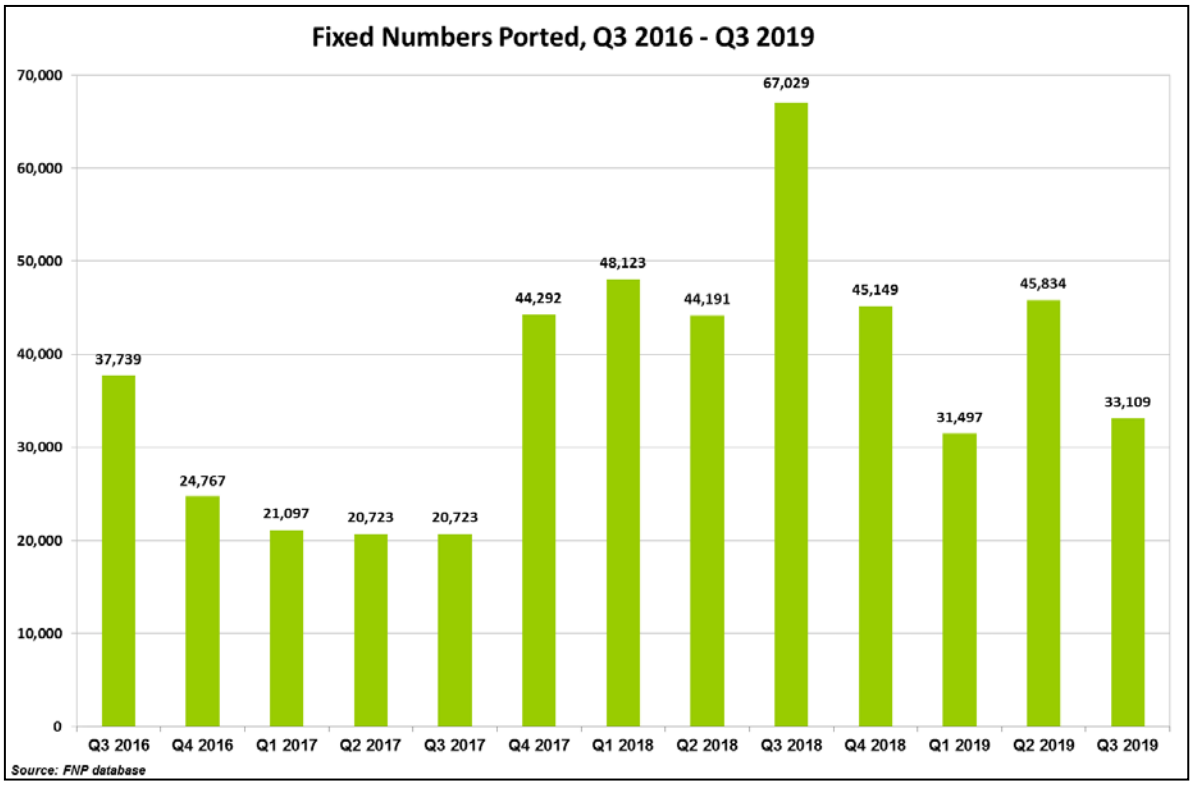
2.4 Fixed Number Portability

Figure 2.4.1 illustrates the number of fixed numbers (geographic and non-geographic) ported between Irish fixed voice service provides since Q3 2016. Fixed Number Portability (FNP) allows consumers to switch fixed voice provider while retaining their fixed number.

In the quarter to September 2019, 33,109 numbers were ported between operators (155,589 numbers in the twelve months to Q3 2019)[31]. Over the last 12 months, an average of 38,897 numbers have been ported each quarter. ComReg notes a higher than normal quantity in the number of ported numbers in Q3 2016[32].

ComReg notes that the fixed number portability database only records data on customers that retain their telephone number while switching between different fixed voice service providers' networks. Therefore, porting numbers presented in Figure 2.4.1 should not be considered as a full proxy for switching activity in the fixed voice market as switching between operators using the same underlying network for the provision of fixed voice services (e.g. where a retail customer switches service provider, but both service providers underlying retail services is provided on the same network – as in the case where retail services are provided over the same wholesale network) would not be recorded in the FNP database.

Figure 2.4.1 – Fixed Numbers Ported



[31] ComReg notes that, as of Q4 2018, the industry project to transition from a porting process based on a legacy central reference database for recording the porting status of geographic and non-geographic ported numbers to a new porting solution has completed its implementation and data migrations phase and has moved into normal operational mode. Furthermore, the process associated with the new porting solution provides for enhanced data collection capabilities that will improve the accuracy of porting data recorded.

[32] This was due to an audit of the central reference database which records porting activity of fixed numbers.

2.5 Standalone Fixed Voice Service Pricing Data

ComReg uses independently collated Strategy Analytics (Teligen) pricing data using OECD-approved methodologies to examine the relative prices of a number of specific fixed voice usage baskets of national and international telecoms services for both residential and business users. The pricing data used for international comparisons currently includes pricing information for selected countries, namely Germany, Denmark, Spain, Netherlands and the United Kingdom[33].

For national comparisons, the prices advertised by the largest operators (in terms of number of subscribers to standalone fixed voice services[34]) during Q3 2019 were analysed[35] for selected usage baskets. In this QKDR, standalone fixed voice service prices advertised by Eir, Sky, Digiweb, Pure Telecom and Vodafone were analysed. Thus, the pricing analysis does not necessarily present the lowest prices available in the whole market, but rather the lowest prices offered by the operators having the largest number of subscribers.

For international comparisons, the prices advertised by the largest operators (in terms of number of subscribers to standalone fixed voice service) in each of the respective countries during Q3 2019 were analysed[36] for selected usage baskets[37] (with an average per country price presented based on the average of lowest price tariffs advertised by three highest ranking operators in national pricing comparisons). In order to enable international comparisons, prices are presented in Euro Purchasing Power Parities (PPPs) and exclude VAT charges. PPPs provide an indication of the cost of telecoms services in countries analysed in relation to the cost of all other products and services.

The presented national and international comparison analysis incorporates discounts offered by operators. Nonrecurring charges (e.g. charges for the installation of a service) are discounted/amortised over five years. Fixed recurring monthly costs such as line rental and any other additional recurring charges are included. Calls to fixed, mobile and international destinations are included[38].

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[33] In future QKDRs ComReg may expand the analysis and include more countries for international price comparisons.

[34] Standalone fixed voice services are voice services not sold as part of a bundle or other services.

[35] The subscribers of these operators jointly account for over 90% of all fixed voice subscribers.

[36] The subscribers of these operators jointly account for over 80% of all fixed voice subscribers in each of the respective countries.

[37] The same basket was applied to each respective country in order to make the international comparison.

[38] From the Q1 2018 QKDR the OECD price baskets were reviewed and revised in line with the 2017 OECD methodology. This was retrospectively applied to the period Q4 2017. The criteria for the 2017 OECD methodology differs from the previous 2010 methodology and is therefore not strictly comparable (for example, international minutes do not apply to the 2017 methodology). The 2017 OECD methodology may be accessed at: http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DSTI/CDEP/CISP(2017)4/FINAL&docLanguage=En.

For more detailed information on basket methodologies see ComReg's accompanying Memorandum, document 19/112a.

The following baskets are presented in this report[39]:

Residential and Business Standalone Fixed Voice Service Baskets

Type of basket	Basket
Residential	60 calls (180 minutes) basket
Business	260 calls (560 minutes) basket

These baskets were selected given they most suitably corresponded (amongst the available OECD usage baskets) to the fixed voice usage patterns presented in figures 2.3.2 and 2.3.3 above. ComReg notes that these baskets reflect usage patterns of an average user and do not necessarily reflect prices of tariffs that are geared towards customers having different usage profiles.

ComReg notes that comparisons are based on the prices of advertised tariffs[40] only and the analysis does not take into consideration other potentially important factors such as quality of the network, level of customer care, additional units of consumption available after having accounted in the analysis for the units in the OECD usage basket, minimum contract term etc.

OECD Residential Standalone Fixed Voice Service Basket

Figure 2.5.1 compares tariffs advertised by standalone fixed voice service providers for residential customers based on a basket of 60 calls[41]. Pure Telecom offers the cheapest tariff for this particular basket at €35.22, followed by Digiweb (€37.64) and Sky (€42.15).

[39] In future QKDRs ComReg may expand the analysis and present price comparisons based on additional and/or different usage baskets.

[40] Tariffs publically advertised during Q3 2019.

[41] Basket assumes the usage of 135 fixed to fixed minutes and 45 fixed to mobile minutes.

Figure 2.5.1 - Residential Standalone Fixed Voice Basket (National)

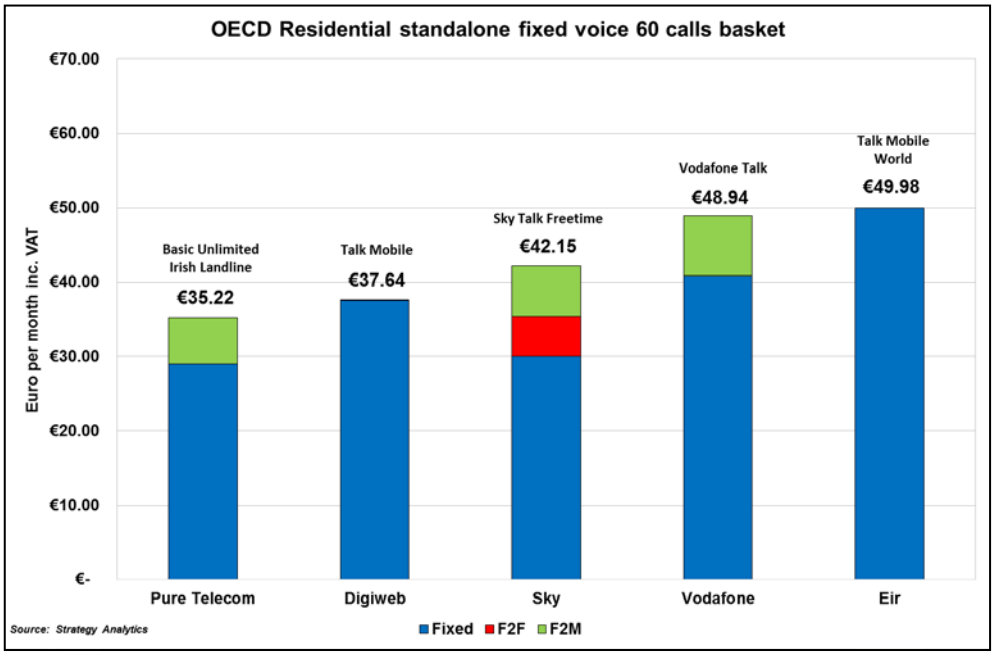
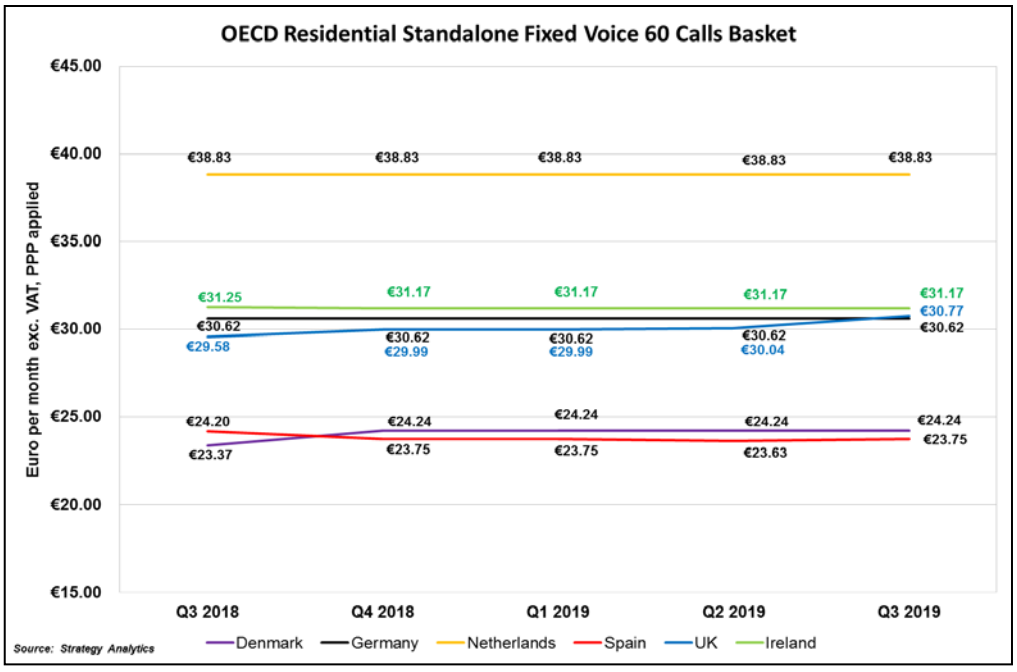


Figure 2.5.2 illustrates Ireland's ranking alongside five other Western European countries with respect to prices for residential standalone fixed voice services. In Q3 2019 Ireland ranked in fifth place with an average price of €31.17[42] for this particular basket. The average price in Ireland is 4.3% more expensive than the average price[43] for all of the countries included in the analysis.

Figure 2.5.2 - Residential Standalone Fixed Voice Basket (International)



[42] As noted previously, average prices used for international comparisons exclude VAT charges.

[43] The average of prices presented in Figure 2.5.2. Prices include line rental.

OECD Business Standalone Fixed Voice Service Basket

Figure 2.5.3 compares tariffs advertised by standalone fixed voice service providers[44] for business customers based on a basket of 260 calls[45]. Presented prices exclude VAT charges. Vodafone offers the cheapest tariff for this particular basket at €32.

Figure 2.5.3 - Business Standalone Fixed Voice Basket (National)

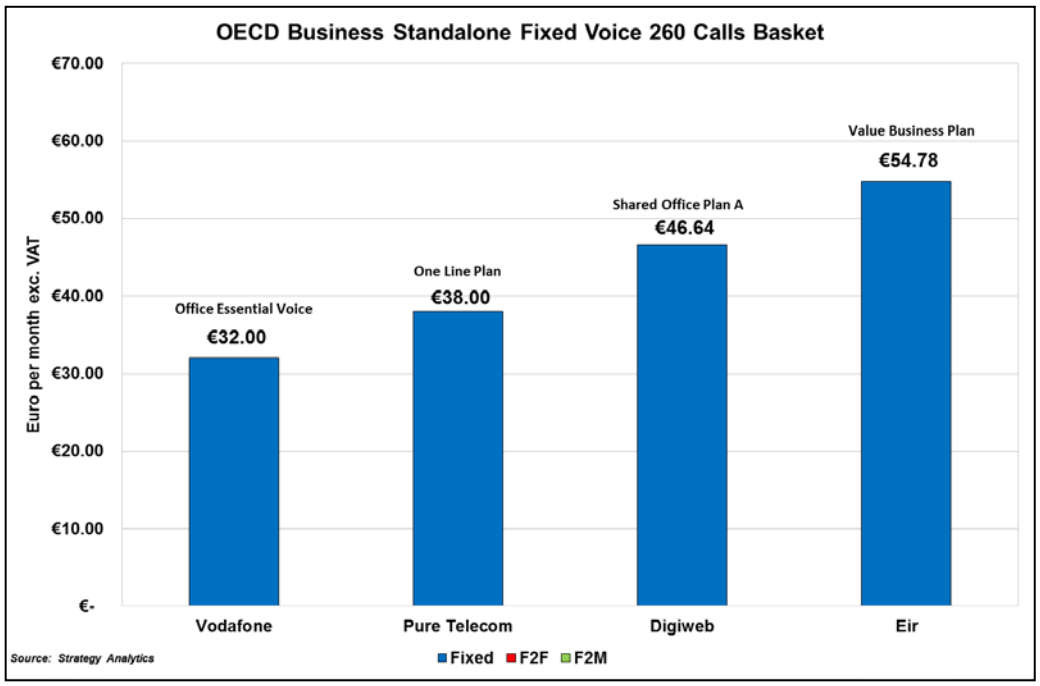


Figure 2.5.4 shows that Ireland (€38.88[46]) ranks in first place. The average price in Ireland is 25.2% cheaper than the average price[47] for all of the countries included in the analysis.

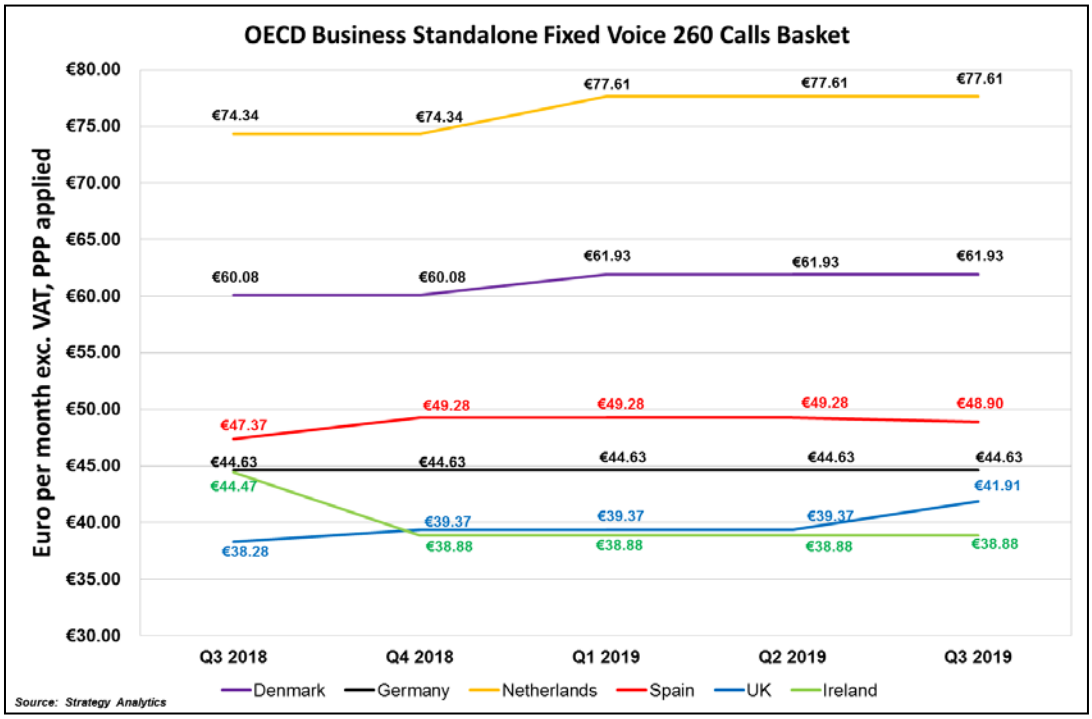
[44] In this QKDR only tariffs advertised by Vodafone, Digiweb and Eir were analysed for business customers. This can arise for reasons such as operators not offering fixed voice services to business customers or not advertising prices publicly. ComReg may expand the analysis and include additional operators in the future QKDRs.

[45] Basket assumes the usage of 370 fixed to fixed minutes and 190 fixed to mobile minutes.

[46] As noted previously, average prices used for international comparisons exclude VAT charges.

[47] The average of prices presented in Figure 2.5.4.

Figure 2.5.4 - Business Standalone Fixed Voice Basket (International)



3. Broadband Services

3.1 Total Broadband[48] Subscriptions and Provision of Broadband Services

Figure 3.1.1 shows the total number of broadband subscriptions in Ireland as of Q3 2019. At the end of September 2019, there were 1.762 million active broadband subscriptions in Ireland. This was an increase of 0.7% on the previous quarter[49] and a 2.5% increase on Q3 2018.

There was a decrease in total fixed line broadband subscriptions this quarter (by 9,490 subscriptions) and an increase in mobile broadband subscriptions (by 2,797 subscriptions). ComReg reports active dedicated mobile broadband subscriptions and does not include Internet access over mobile handsets within these numbers.

VDSL [50] (+0.3%), FTTP [51] (+14.2%), cable (+0.5%), FWA (+5.3%), and mobile broadband subscriptions (+0.9%) showed positive growth this quarter. DSL[52] (-5.5%) and satellite (-2.0%) both fell this quarter. It is likely that some of the DSL reductions are accounted for by consumers switching to VDSL based broadband services as well as to broadband services provided on other platforms.

Figure 3.1.1 – Total Number of Active Broadband Subscriptions

Subscription Type	Q3 2019	Quarterly Growth Q2'19 – Q3'19	Annual Growth Q3'18 – Q3'19
DSL Broadband	252,942	-5.5%	-18.4%
VDSL Broadband	630,529	+0.3%	+3.9%
Cable Broadband	373,362	+0.5%	+0.02%
FTTP Broadband	144,611	+14.2%	+91.9% [53]
Satellite Broadband	3,954	-2.0%	-13.6%
FWA Broadband	49,527	+5.3%	+0.9%
Total Fixed broadband	1,454,925	+0.7%	+2.5%
Mobile Broadband	306,633	+0.9%	+2.6%
Total Broadband	**1,761,558**	**+0.7%**	**+2.5%**

[48] ComReg notes that the data provided in this section relates to active subscriptions reported by operators. It takes into account multiple active subscriptions to broadband offerings by individual subscribers.

[49] Fixed broadband subscriptions were revised for Q1 2019. See note 4 within the corrigendum.

[50] VDSL refers to very-high-bit-rate digital subscriber line. These lines are typically utilised in the provision of next generation broadband services.

[51] FTTP (fibre to the premises) refers to a range of fibre access installations such as fibre to the home (FTTH), fibre to the premises (FTTP) and fibre to the curb.

[52] DSL refers to a digital subscriber line, the means by which broadband speeds (i.e. in excess of 144k downstream) are delivered over the copper telecoms network.

[53] ComReg notes this increase is partially due to additional subscription data becoming available, applicable from Q1 2019. See note P on page 9. FTTP subscription data before and after Q1 2019 therefore are not strictly comparable.

Figure 3.1.2 profiles broadband subscriptions in Ireland using the subscription type classifications outlined in Figure 3.1.1.

Figure 3.1.2 – Total Broadband Subscriptions[54]

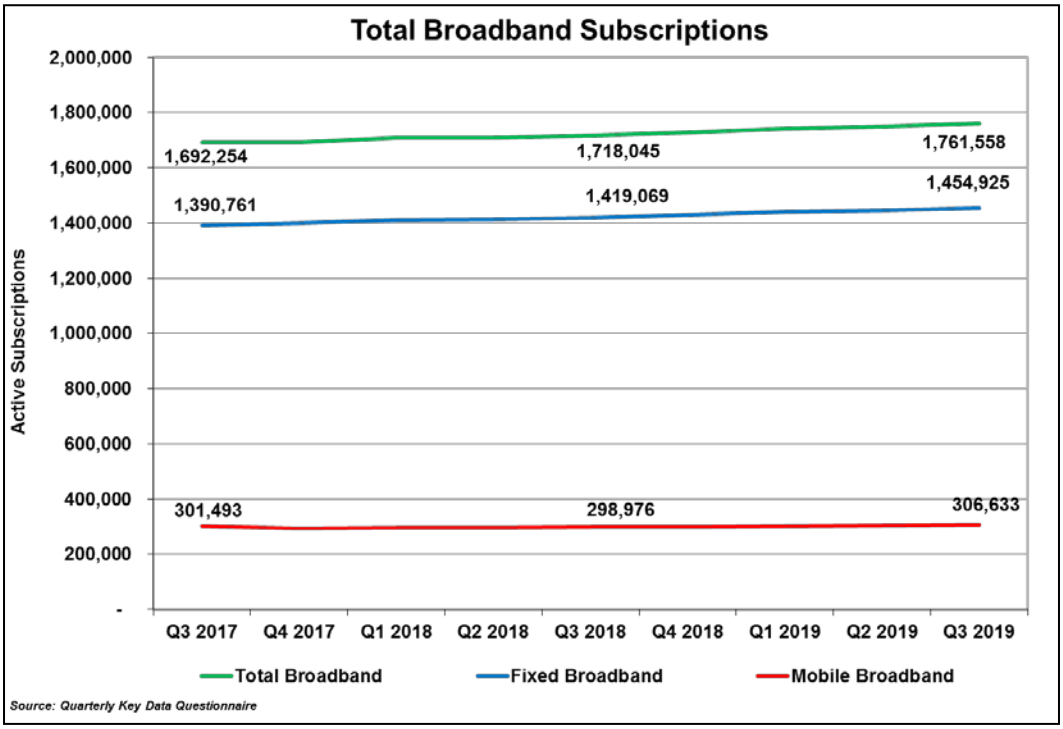
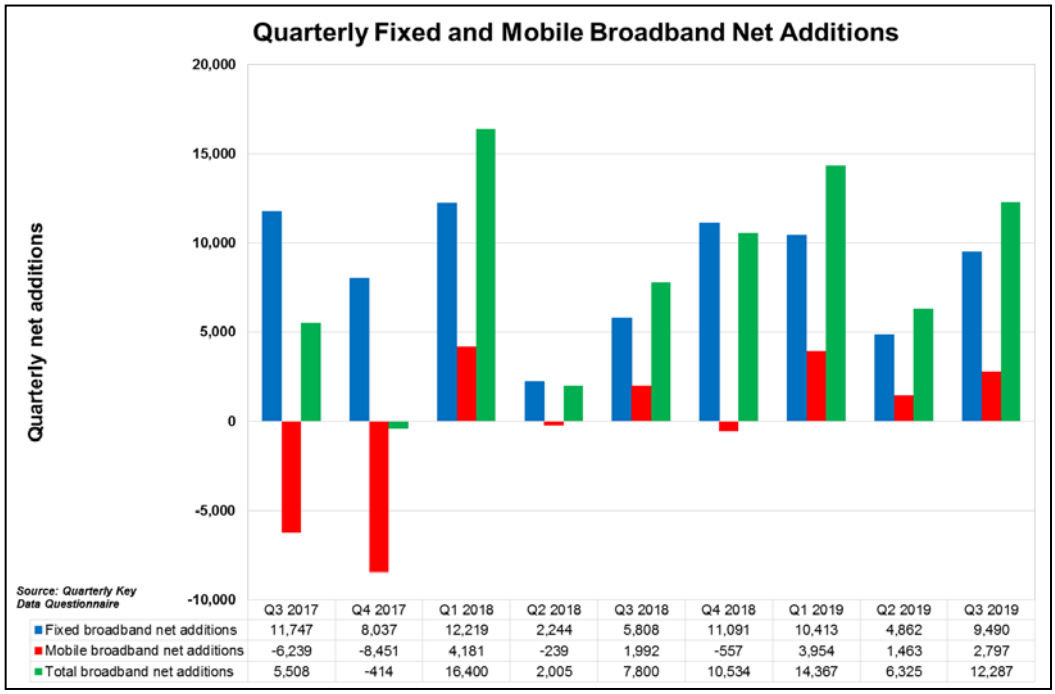


Figure 3.1.3 shows the quarterly growth in fixed and mobile broadband subscriptions since Q3 2017. In general, there has been a steady growth of fixed broadband subscriptions and a recent plateauing of mobile broadband subscriptions. It should be noted that ComReg reports on active broadband subscriptions and the mobile broadband subscription numbers reported by ComReg do not include internet access over mobile handsets (such as smartphones).

[54] Total fixed broadband subscriptions were revised from Q1 2019 to Q2 2019. See note 4 in the corrigendum.

Figure 3.1.3 – Quarterly Growth in Broadband Subscriptions



	Q3 2017	Q4 2017	Q1 2018	Q2 2018	Q3 2018	Q4 2018	Q1 2019	Q2 2019	Q3 2019
Fixed broadband net additions	11,747	8,037	12,219	2,244	5,808	11,091	10,413	4,862	9,490
Mobile broadband net additions	-6,239	-8,451	4,181	-239	1,992	-557	3,954	1,463	2,797
Total broadband net additions	5,508	-414	16,400	2,005	7,800	10,534	14,367	6,325	12,287

In Q3 2016, VDSL subscriptions became the largest component of broadband subscriptions at 27.2% with this increasing to 35.8% in Q3 2019. The increase in VDSL subscriptions is likely to be largely accounted for by consumers switching from DSL based broadband services. DSL accounted for 14.4% of all broadband subscriptions in Q3 2019, down from 18.0% in Q3 2018. The share of mobile broadband subscriptions was 17.4% of all broadband subscriptions, the same as in Q3 2018. Cable had a 21.2% share of all broadband subscriptions down from 21.7% in Q3 2018. FWA had a 2.8% share of broadband subscriptions, down from 2.9% in Q3 2018. The remainder consists of satellite with a 0.22% share of broadband subscriptions, slightly down from 0.27% in Q3 2018, while FTTP had a 8.2% share of broadband subscriptions in Q3 2019, up from 4.4% in Q3 2018.

Figure 3.1.4 illustrates the split by type of broadband subscriptions in the Irish market since Q3 2018, while Figure 3.1.5 shows the net additions to broadband subscriptions by each platform. The net total number of fixed broadband subscriptions has increased this quarter, driven mainly by increases in VDSL and FTTP subscriptions[55].

[55] FTTP broadband subscriptions were revised from Q1 2019 to Q2 2019. See note 4 in the corrigendum.

Figure 3.1.4 – Broadband Subscriptions by Platform[56]

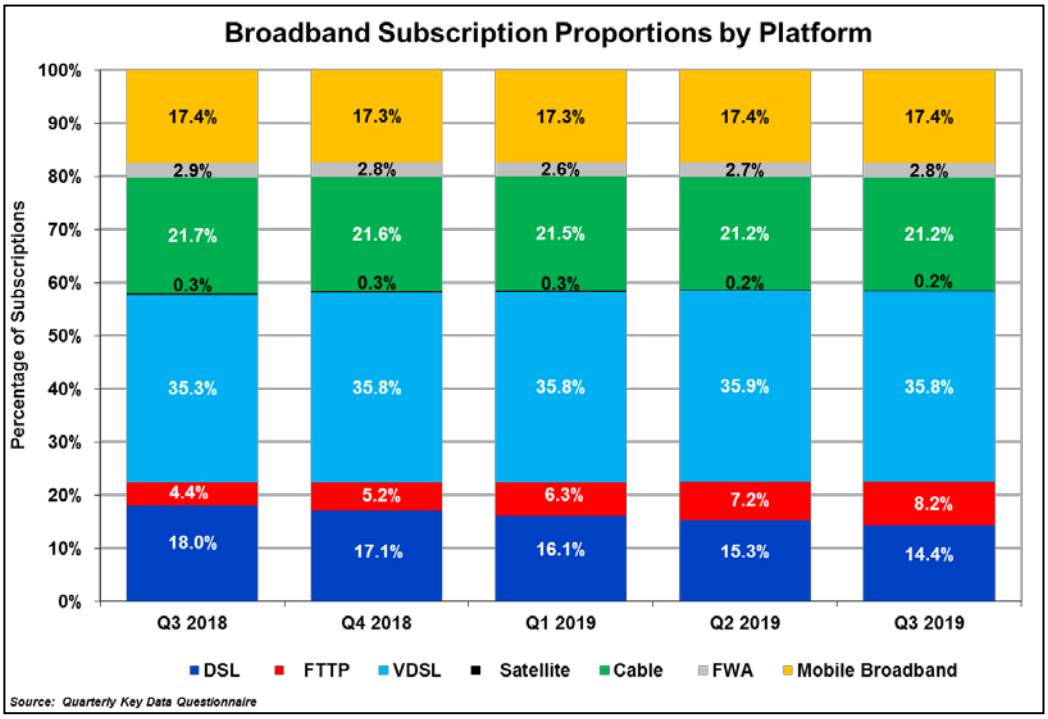


Figure 3.1.5 – Broadband Subscriptions - Net additions

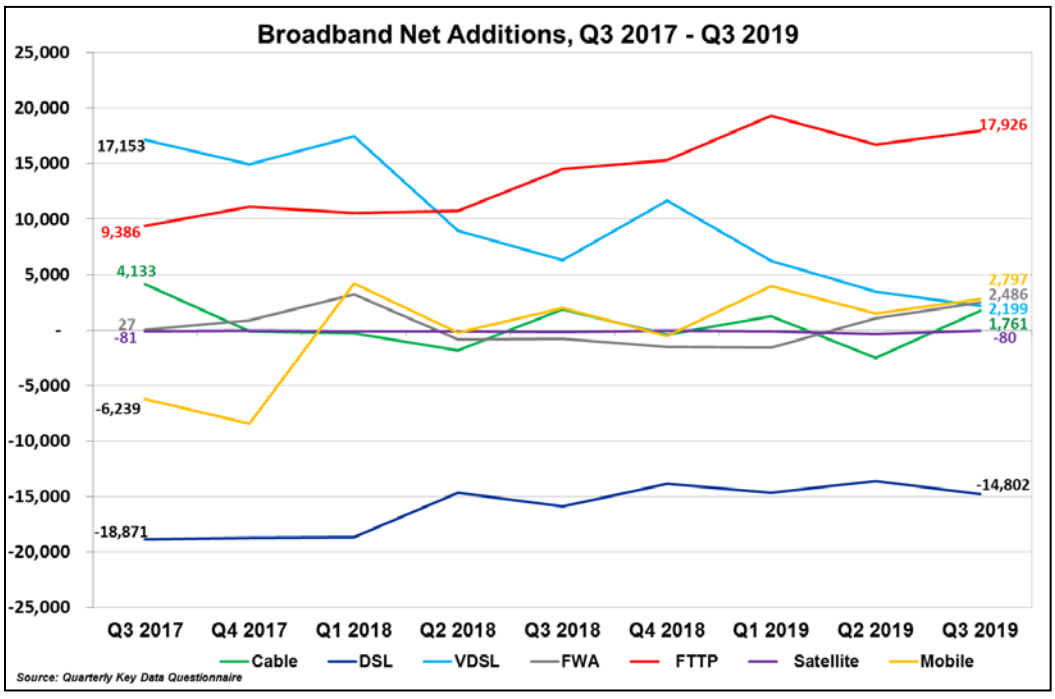


Figure 3.1.6 provides an estimate of the proportion of business and residential subscriptions to DSL, VDSL, cable, FWA, mobile broadband, fibre and satellite broadband services. In Q3 2019, 82.3% of broadband subscriptions on all platforms

[56] Figure 3.1.4 is based on number of lines for DSL, VDSL, FTTP and cable plus subscriptions for satellite, FWA and mobile broadband.

were classed as residential broadband subscriptions. The platform with the highest percentage of residential vis-à-vis business subscriptions is cable broadband, while the mobile broadband category has the highest percentage of business customers.

Figure 3.1.6 – Broadband Subscriptions by Subscription Type

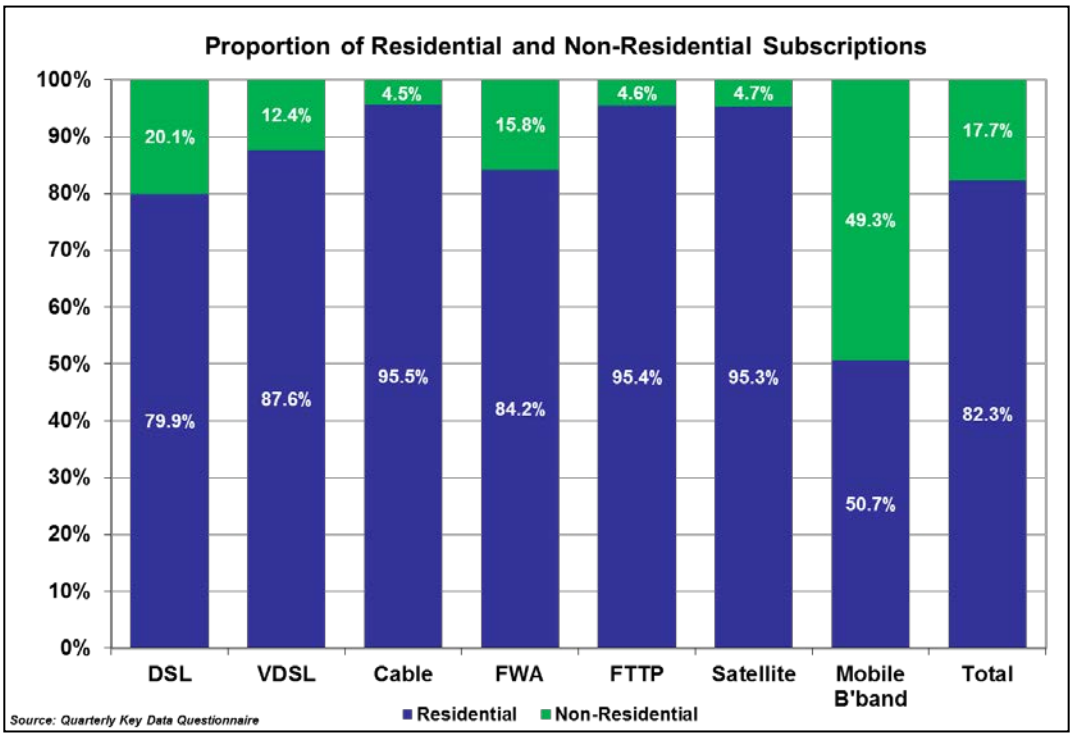


Figure 3.1.7 illustrates the breakdown of broadband subscriptions by advertised (headline) speed across all fixed broadband platforms (mobile broadband is excluded). In total, approximately 80.9% of broadband subscriptions were >=30Mbps (with 34.9% >=100Mbps). This equates to approximately 82.9% (with 37.3% >=100Mbps) of residential subscriptions and 64.7% (with 15.7% >=100Mbps) of business subscriptions.

The data suggests that most business and residential users subscribe to broadband services with advertised download speeds of between 30Mbps - 100Mbps. Many larger business users access their broadband services over dedicated leased lines. Leased lines are not included in these charts. Leased line speeds can range up to speeds in excess of 1 gigabyte per second.

Figure 3.1.7 – Fixed Broadband Download Speeds and Subscription Type

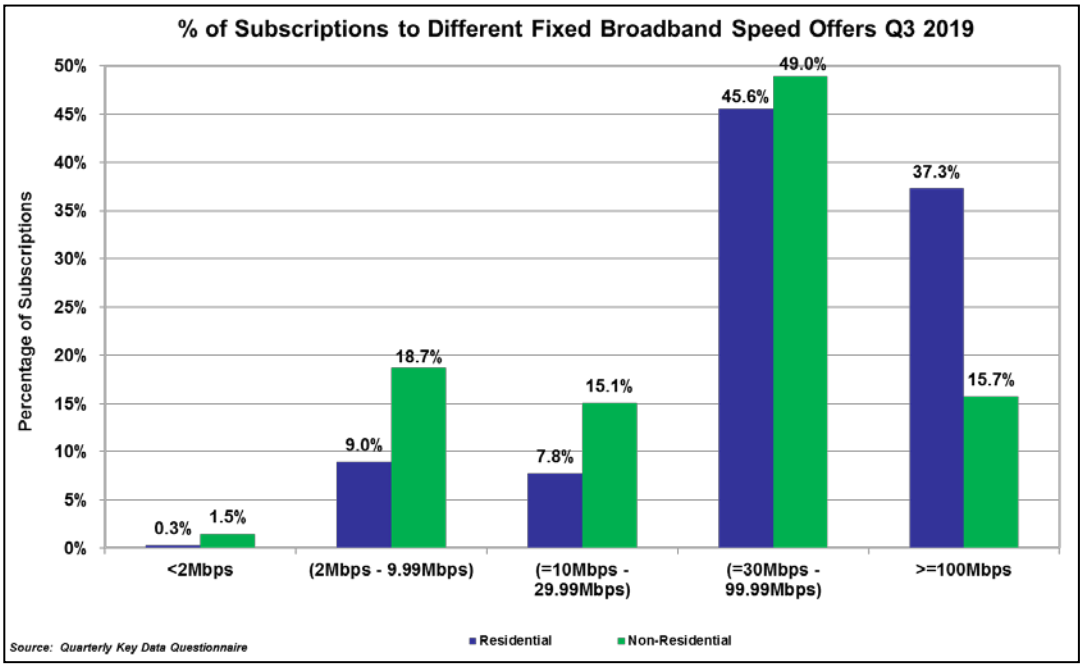


Figure 3.1.8 shows broadband subscriptions by advertised (headline) speed and the type of broadband platform subscribed to.

Figure 3.1.8 – Fixed Broadband Download Speeds and Platform

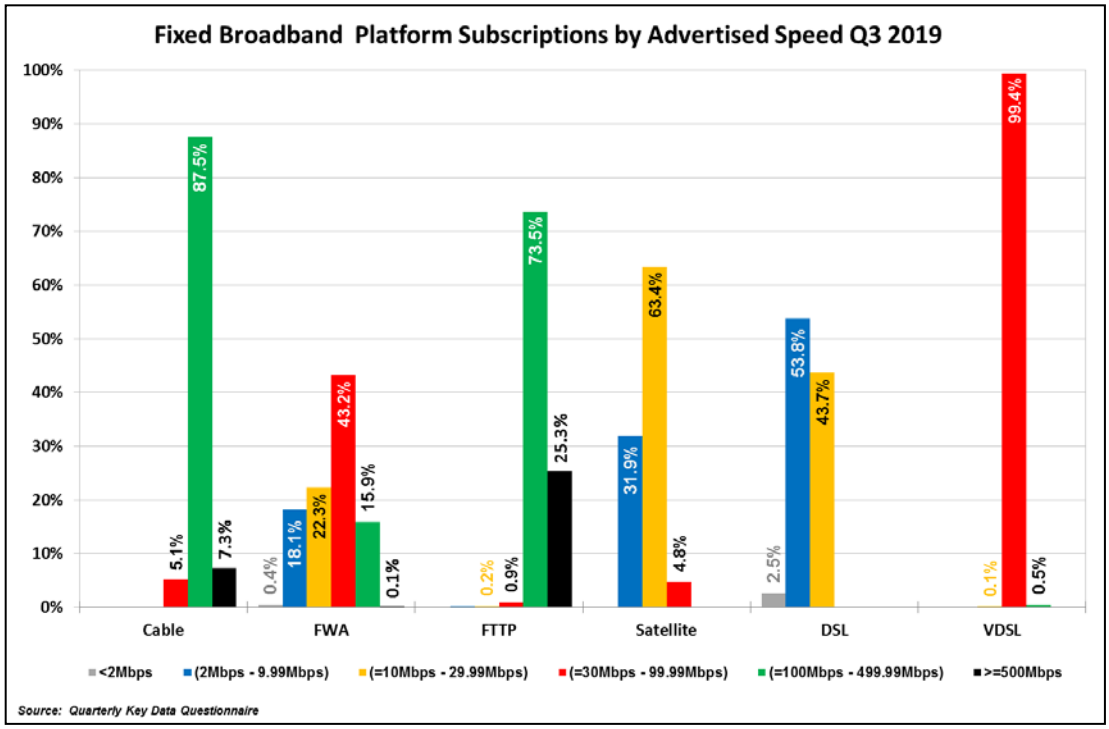


Figure 3.1.9 shows the change in fixed broadband subscriptions by advertised (headline) download speeds between Q3 2017 and Q3 2019. Over the entire period, growth in broadband speeds has been mainly in subscriptions with speeds above 30Mbps. The share of these subscriptions increased from 75.9% in Q3 2018 to 80.9% in Q3 2019.

Figure 3.1.9 – Fixed Broadband Subscriptions by Advertised (Headline) Download Speeds

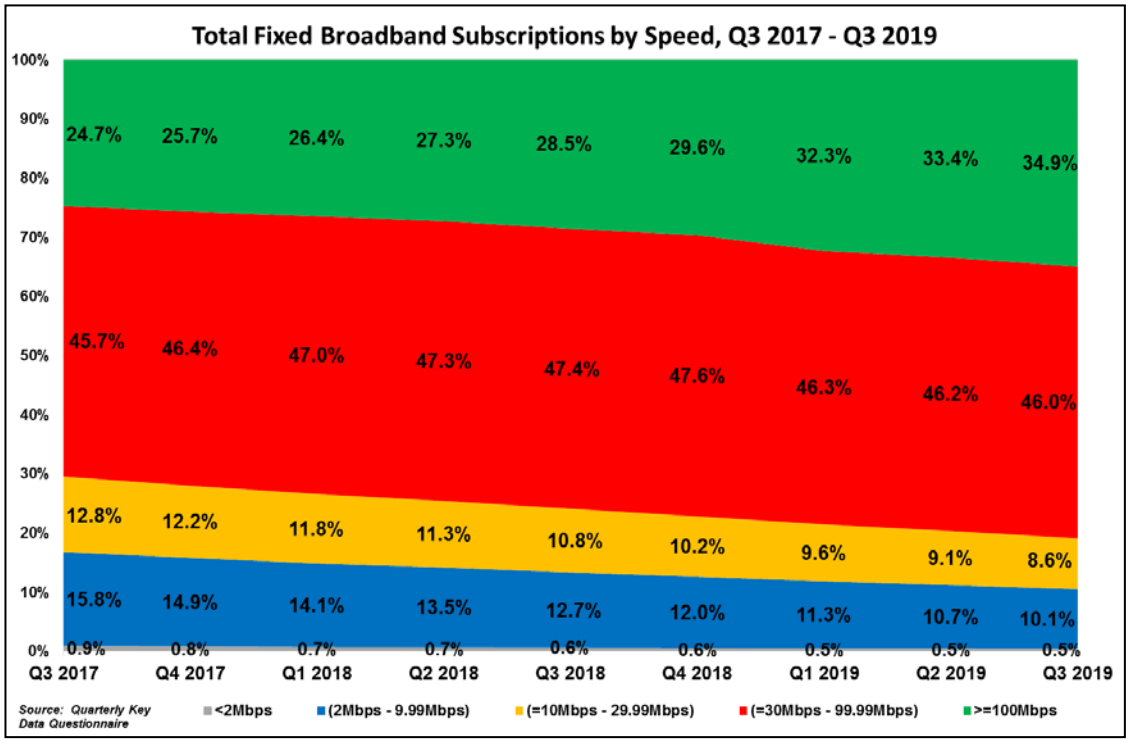


Figure 3.1.10 provides the market shares of fixed broadband operators by number of subscriptions. DSL, VDSL, cable, FWA, satellite and FTTP subscriptions are used to calculate fixed broadband market shares[57].

Operators with a market share of 2% or more are shown in the chart below. All those operators with less than 2% of total fixed broadband subscriptions are grouped together under the heading 'OAOs'.

According to the data received from operators for Q3 2019, Eir had 31.4% of total retail fixed broadband subscriptions, followed by Virgin Media who had 26.2% of subscriptions. Vodafone had 19.1% (excluding mobile broadband subscriptions) and Sky Ireland had a 13.4% market share. All other OAOs combined accounted for the remaining 9.9% share of retail fixed broadband subscriptions.

[57] Total fixed broadband subscriptions were revised from Q1 2019 to Q2 2019. Market shares were affected. See note 4 in the corrigendum.

Figure 3.1.10a – Subscription Market Share of Fixed Broadband Market[58]

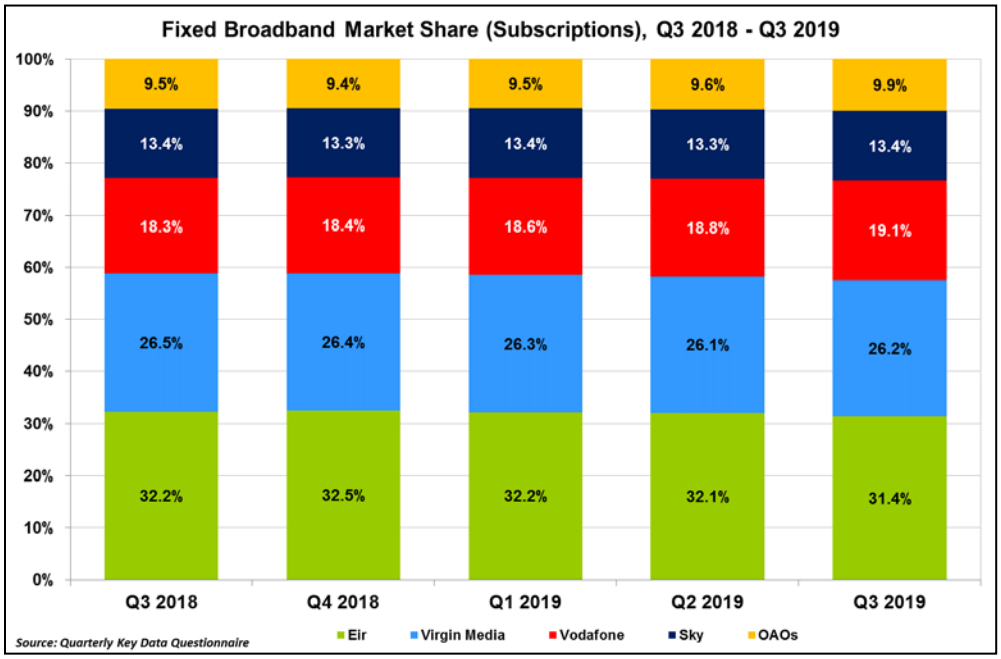
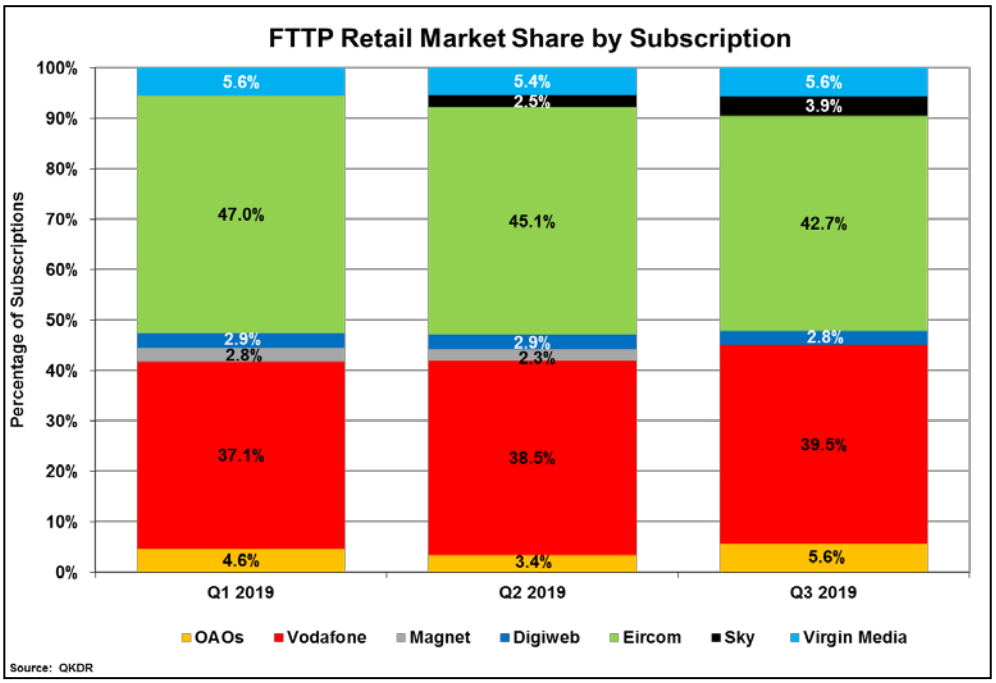


Figure 3.1.10b shows market share for FTTP retail subscriptions. In Q3 2019 Eir had 42.7% of retail FTTP subscriptions, followed by Vodafone at 39.5%. Virgin Media had 5.6%, Sky Ireland had 3.9% and Digiweb had 2.8% market share. The remainder was composed of OAOs combined accounting for the remaining 5.6% share.

Figure 3.1.10b – FTTP Subscription Market Share[59]

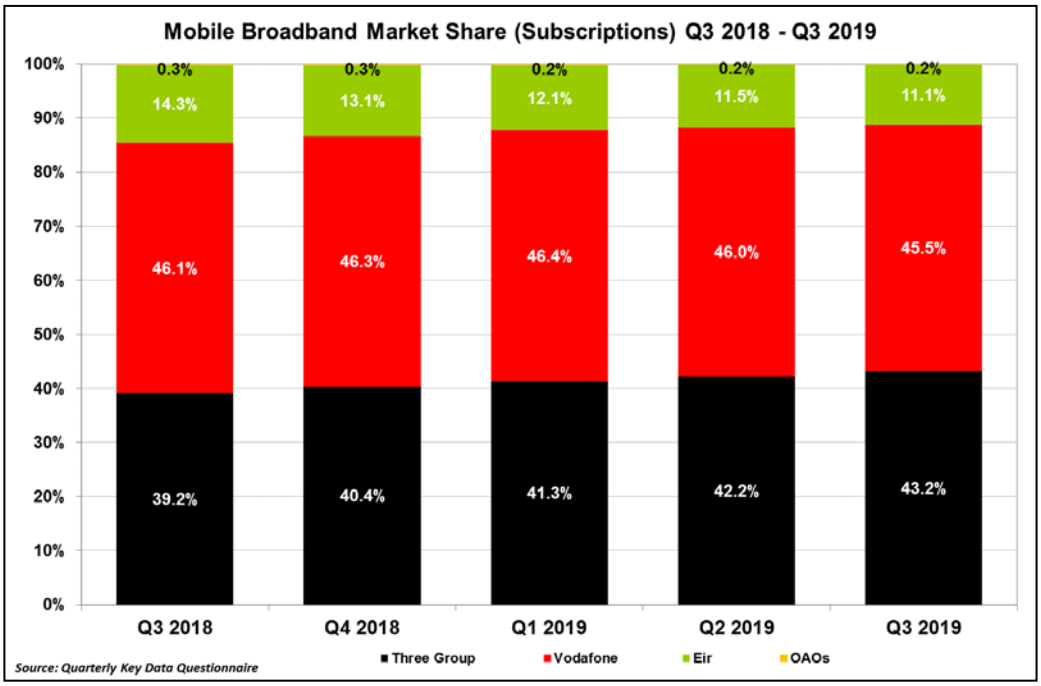


[58] Figure 3.1.10a is based on operator share of the number of retail lines for DSL, VDSL, FTTP and cable plus subscriptions for satellite and FWA.

[59] Figure 3.1.10b is based on operator share of the number of retail lines for FTTP subscriptions. This chart was first published in QKDR Q3 2019. See note P on page 9 for detail.

Figure 3.1.11 shows the market share of mobile broadband operators by subscriptions. As of Q3 2019, Vodafone had the largest share with 45.5%. Three Group's market share was 43.2%, up from 39.2% in Q3 2018. Eir had a market share of 11.1% down from 14.3% in Q3 2018 while OAOs accounted for the remaining 0.2%.

Figure 3.1.11 – Subscription Market Share of Mobile Broadband Market



3.2 Provision of DSL Access

Figure 3.2.1 examines the provision of DSL access. DSL broadband services are provided to consumers by operators using three alternative methods of access. DSL may be provided directly to the consumer by Eir using direct access to its network; this accounted for 45.0% of all DSL subscriptions in Q3 2019. Eir's market share of retail DSL lines has increased by 0.5 of a percentage point over the last year. Retail DSL may also be provided by OAOs who use either Eir's wholesale bitstream service, which enables OAOs to resell another operator's DSL service, or by offering DSL-based broadband using local-loop unbundling (LLU).

In Q3 2019, 45.3% of all DSL lines were provided by OAOs using wholesale bitstream. In absolute terms there were 114,666 wholesale bitstream lines, a decrease of 15.4% since Q3 2018. The remaining 9.6% of DSL lines were provided to subscribers by OAOs using local-loop unbundling. In Q3 2019 there were 24,355 unbundled local loops, down from 36,173 in Q3 2018 (-32.7%).

Figure 3.2.1 - Provision of DSL Access

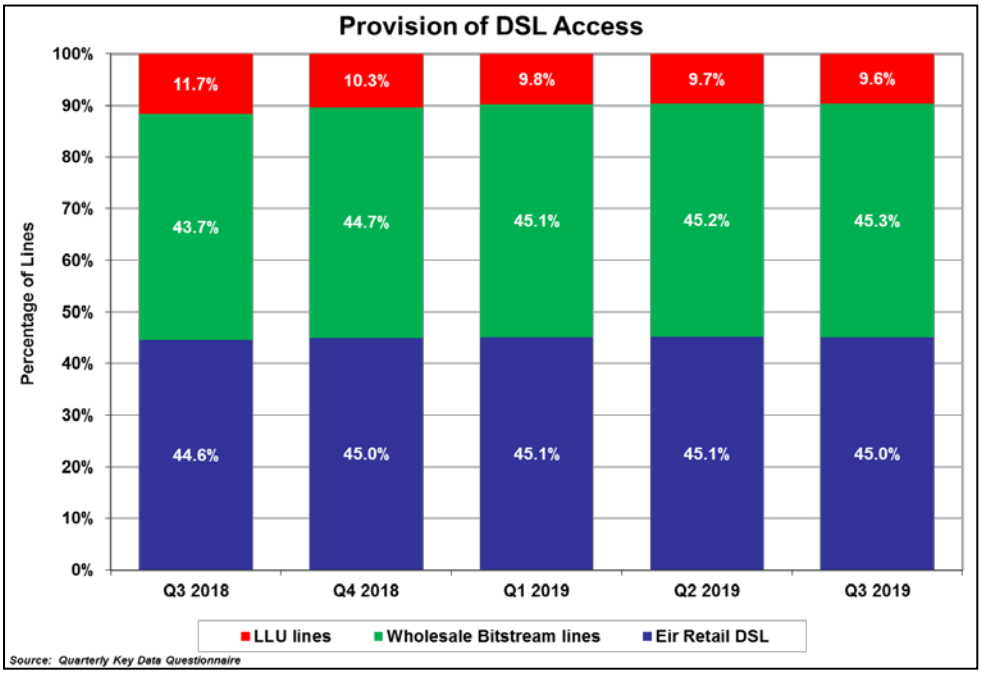
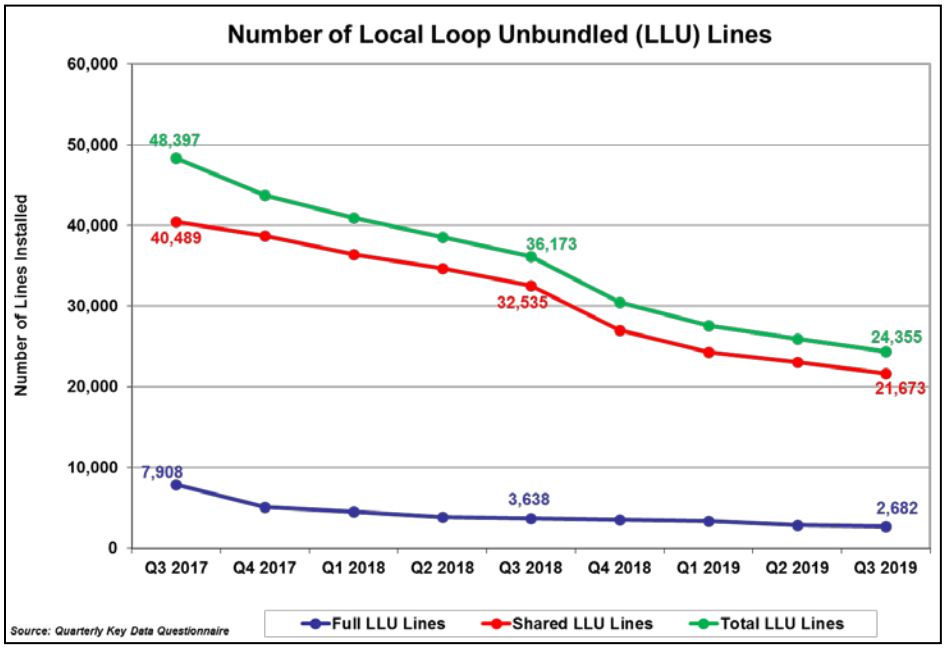


Figure 3.2.2 shows the number of unbundled lines according to their shared and full[60] unbundling status. Between Q3 2018 and Q3 2019 the total number of LLU lines decreased by 32.7% and declined by 6.0% since Q2 2019. Full LLU lines decreased by 26.3% since Q3 2018 and declined by 5.3% since Q2 2019. Similarly shared LLU lines decreased by 33.4% since Q3 2018 and declined by 6.1% since Q2 2019.

Figure 3.2.2 – Number of Unbundled Local Loops



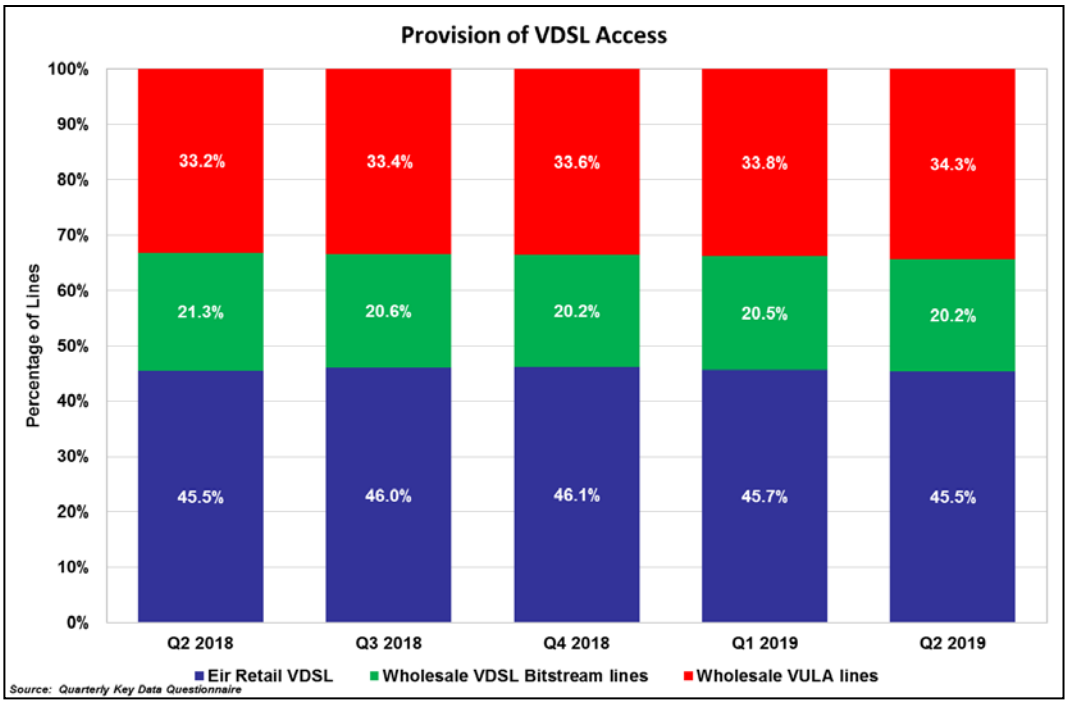
[60] Full LLU and shared LLU are two ways a copper loop may be unbundled. While full LLU assigns the entire copper loop to the leasing operator, shared LLU enables other operators and the incumbent to share the same line. With shared access consumers can acquire voice and data services from an operator or alternatively data services alone while retaining the voice services of the incumbent.

3.3 Provision of VDSL Access

VDSL broadband services are provided to consumers by operators using three alternative methods of access. VDSL may be provided directly to the consumer by Eir using direct access to its network; this accounted for 44.6% of all VDSL subscriptions in Q3 2019. Eir's market share of retail VDSL lines declined by 1.4 percentage points over the last year. Retail VDSL may also be provided by OAOs who use either wholesale bitstream, which enables OAOs to resell another operator's VDSL service, or by offering VDSL-based broadband using virtual unbundled local access (VULA).

In Q3 2019, 20.6% of all VDSL lines were provided by OAOs using wholesale bitstream. In absolute terms there were 130,185 wholesale VDSL bitstream lines in Q3 2019, an increase of 4.3% since Q3 2018. The remaining 34.8% of VDSL lines were provided to subscribers by OAOs using VULA. In Q3 2019 there were 219,333 VULA lines, up from 202,859 in Q3 2018 (+8.1%) and up from 215,716 in Q2 2019 (+1.7%).

Figure 3.3.1 – Provision of VDSL Access



3.4 Usage of Broadband Services

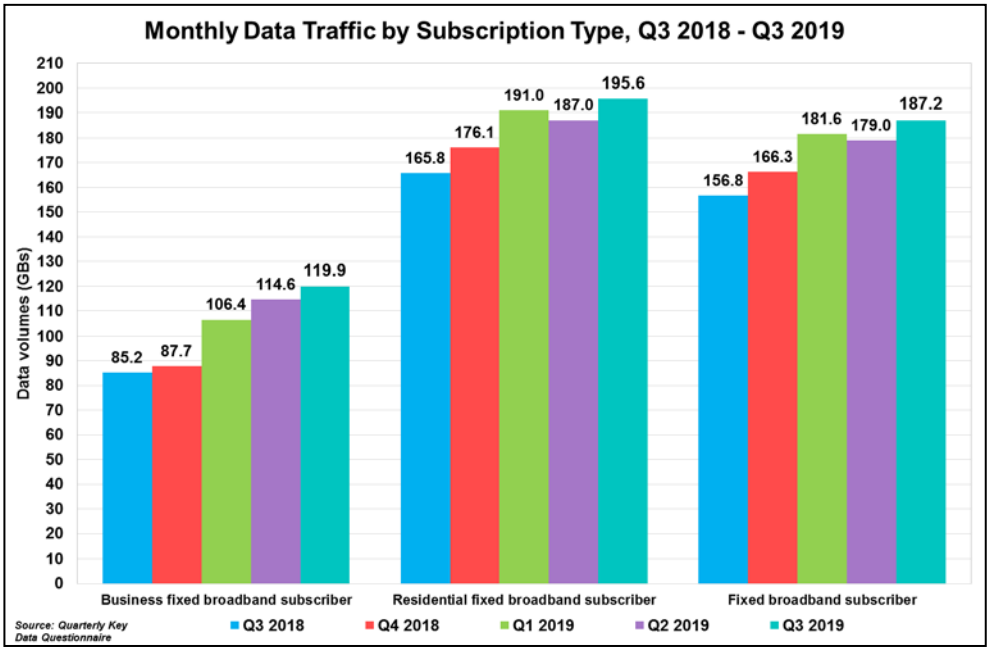
Figure 3.4.1 shows data volumes generated by fixed and mobile broadband subscribers as well as subscribers to mobile voice and data services. Fixed broadband volumes alone reached 817,188 terabytes while mobile data volumes reached 138,869 terabytes[61].

Figure 3.4.1 – Fixed Broadband and Mobile Data Volumes

	Q3 2019 (TBs)	Q2'19 – Q3'19 Growth	Q3'18 – Q3'19 Growth
Fixed broadband data volumes[62]	**817,188**	**+5.3%**	**+22.4%**
Mobile data volumes	**138,869**	**+11.6%**	**+30.8%**
Total data volumes	**956,057**	**+6.2%**	**+23.6%**

Figure 3.4.2 illustrates average monthly data usage volumes by subscription type. In Q3 2019 an average fixed broadband subscriber used 187.2 GB of data per month. The majority of traffic is generated by residential subscribers with an average monthly data usage per residential subscriber reaching 195.6 GB in Q3 2019. An average business fixed broadband subscriber used 119.9 GB of data per month in Q3 2019. In comparison, average traffic per smartphone reached 7.2 GB of data while the average traffic per dedicated mobile broadband subscriber was 31.3 GB of data.

Figure 3.4.2 – Monthly Traffic per Fixed Broadband Subscription by Type[63]



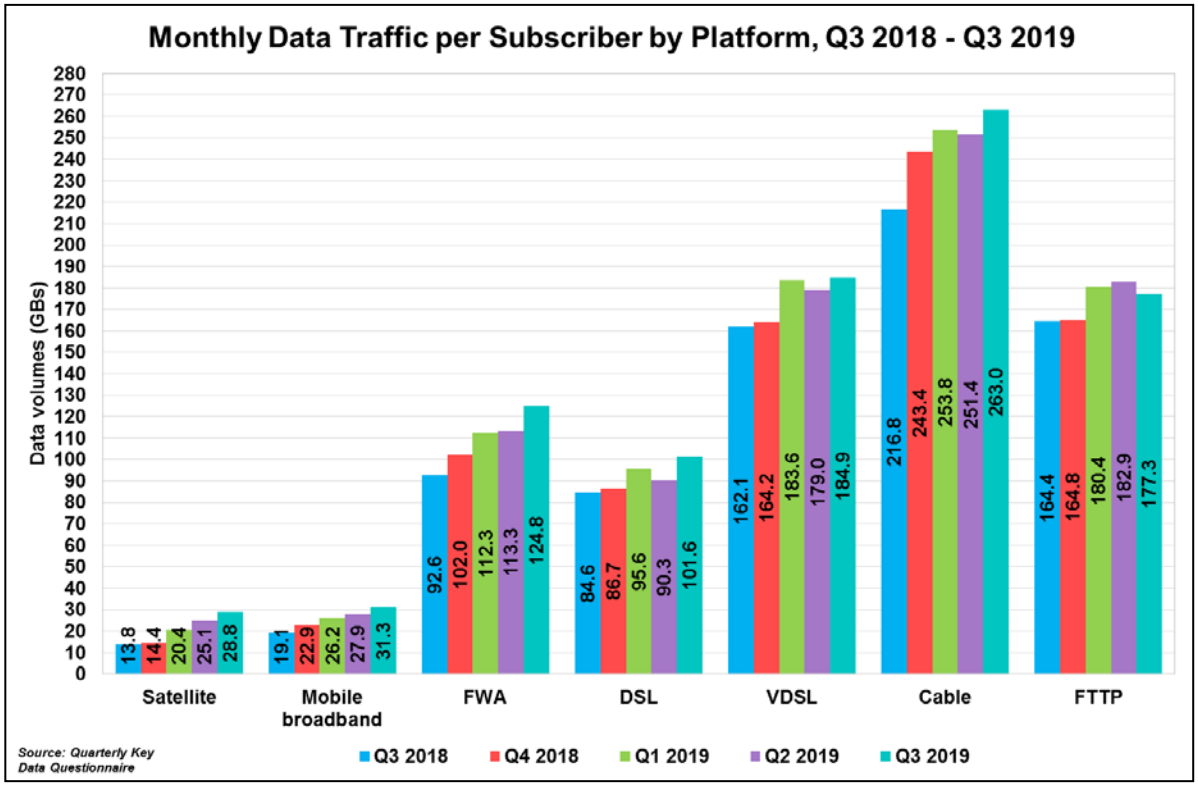
[61] Mobile data volumes refer to traffic generated from mobile broadband plus mobile voice and data services.

[62] This figure consists of aggregated data volumes from various subscription types.

[63] Fixed broadband subscriptions were revised from Q4 2018 to Q2 2019 and fixed broadband data volumes were revised Q3 2018 to Q2 2019. Figures 3.4.2 and 3.4.3 were impacted. See notes 4 and 7 in the corrigendum.

Figure 3.4.3 provides a breakdown of average monthly data usage volumes by broadband platform. In Q3 2019 the average cable broadband subscription generated 263.0 GB of data per month followed by VDSL (184.9 GB), FTTP (177.3 GB), and FWA (124.8 GB). It can be observed from Figure 3.4.3 that the average volume of data used increases with download speed as cable, FTTP and VDSL broadband platforms have the highest proportions of high speed broadband subscriptions as noted in Figure 3.1.8.

Figure 3.4.3 – Monthly Traffic per Broadband Subscription by Platform



3.5 Broadband Penetration[64]

The total number of broadband subscriptions in Ireland for Q3 2019 was 1,758,723. Using fixed residential broadband only, 1,294,486 subscriptions (i.e. excluding business subscriptions and mobile broadband subscriptions), the estimated fixed broadband household penetration rate (there were 1,893,700 households in Ireland using the Central Statistics Office (CSO) Q3 2019 estimate) as of Q3 2019 was 68.4%.

Figure 3.5.1a shows fixed broadband penetration per household in Ireland by platform from Q3 2015 to Q3 2019. VDSL subscriptions had the greatest penetration rate at 29.2% in Q3 2019 followed by cable subscriptions at 18.8% and DSL subscriptions at 10.7%. FWA, satellite and FTTP subscriptions make up the remaining 9.7%.

[64] Fixed broadband subscriptions were revised from Q4 2018 to Q2 2019. Figures 3.5.1a and 3.5.1b were impacted. See note 7 in the corrigendum.

Figure 3.5.1a – Fixed Broadband Subscriptions per Household

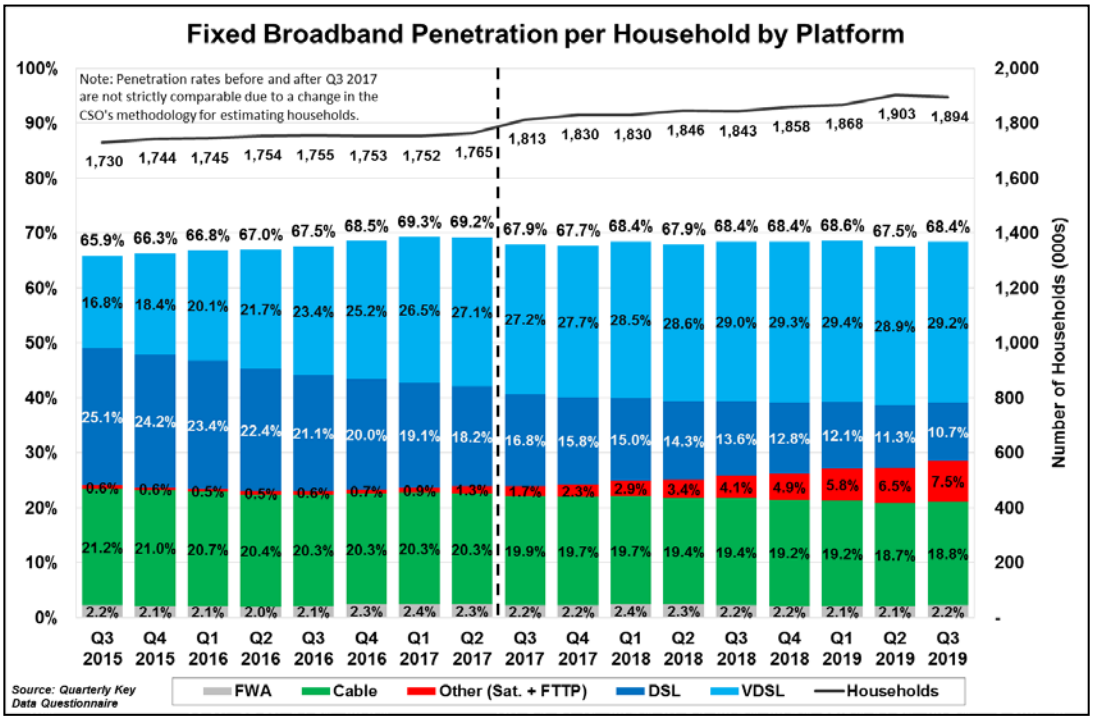


Figure 3.5.1b shows fixed and mobile broadband subscriptions per capita in Ireland from Q3 2015 to Q3 2019. The broadband per capita penetration rate (including mobile broadband) was 35.7% in Q3 2019. The penetration rate for fixed broadband subscriptions was 29.5% while for dedicated mobile broadband subscriptions it was 6.2%.[65] These figures are based on a population of 4,932,900 from the CSO Q3 2019 estimate.

[65] It should be noted that ComReg reports dedicated mobile broadband subscriptions (i.e. on the basis of mobile dongles/datacards) only. Subscriptions with Internet access over a handset are not included. Therefore, the total number of mobile broadband users (i.e. dedicated mobile broadband and handset subscriptions with internet access) will be higher than stated in this report. On the other hand, a broadband subscriber may have both a fixed and mobile broadband subscription and therefore, a broadband penetration rate based on both mobile and fixed subscriptions may overestimate the penetration rate.

Figure 3.5.1b – Fixed and Mobile Broadband Subscriptions per Capita[66]

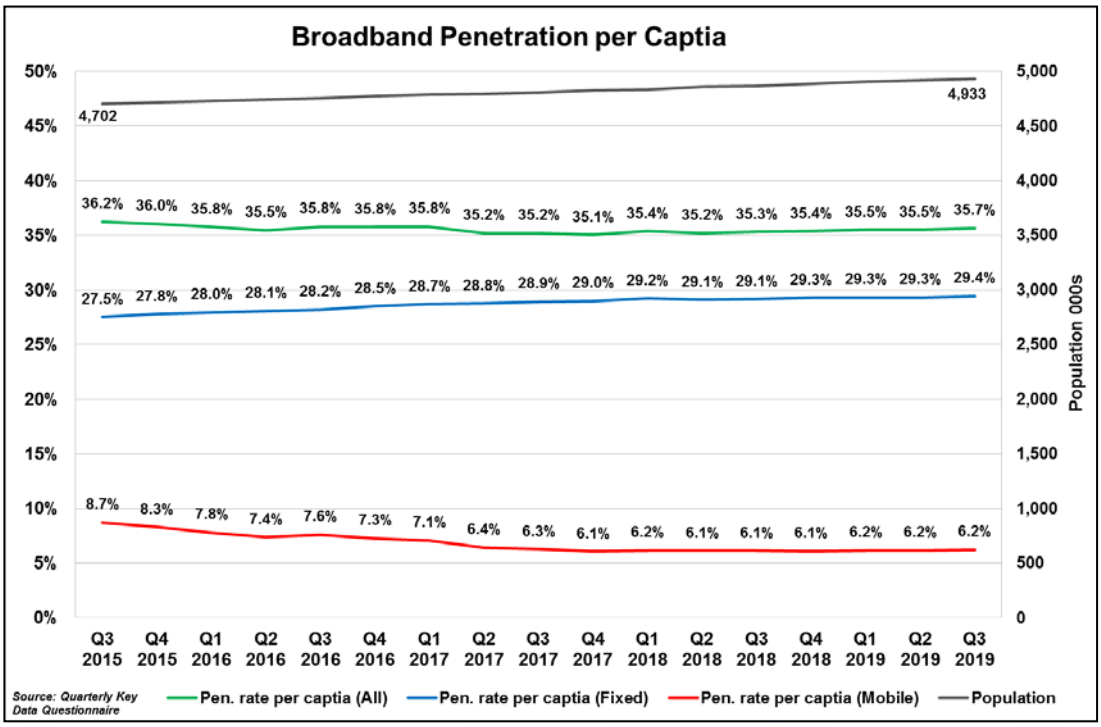


Figure 3.5.2 overleaf shows the proportion of households with broadband connections from 2014 to 2018.[67] Both fixed and mobile broadband[68] are included. Ireland's household broadband penetration rate, at 88%, is higher than the EU28 average of 86%. Penetration has increased by 8 percentage points since 2014 while the EU28 penetration has increased by 8 percentage points. Figure 3.5.3 presents broadband penetration rates in Ireland and EU since 2007[69].

[66] ComReg notes penetration rates in figures 3.5.2a and 3.5.2b are both affected by changing quarterly population and household statistics used in calculations.

[67] Latest available whole-year data.

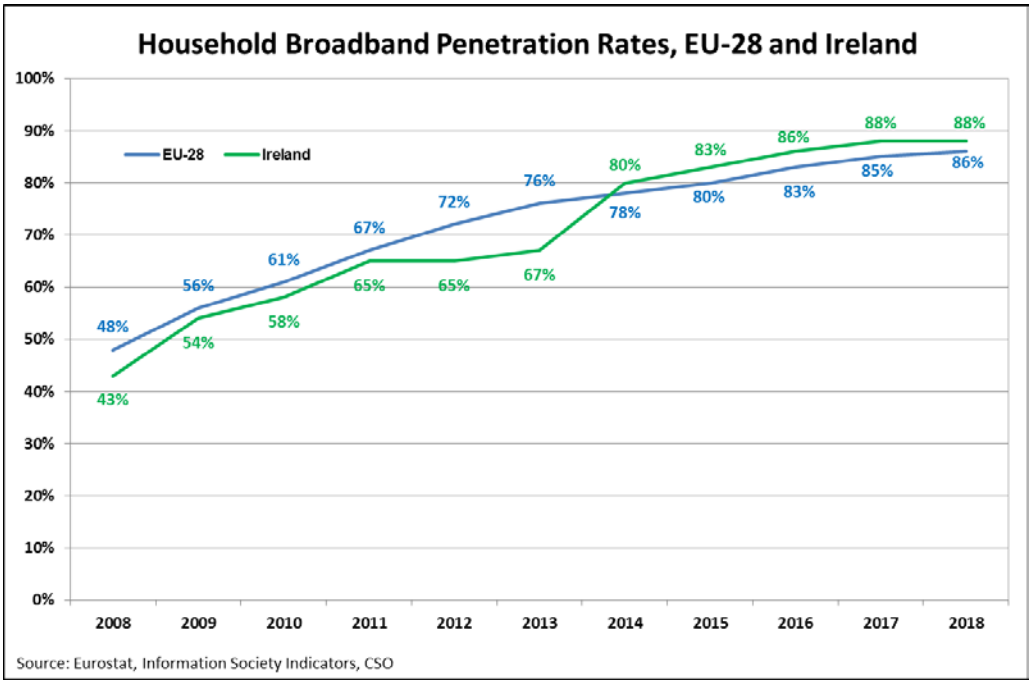
[68] Households with at least one member aged 16–74. Broadband connection includes: DSL, VDSL, wired fixed (cable, fibre, Ethernet, PLC), fixed wireless (satellite, Wi-Fi, WiMax) and mobile wireless (3G/4G).

[69] Source: Eurostat (online data code isoc_ci_it_h).

Figure 3.5.2 – Household Broadband Subscriptions, 2014 – 2018

	2014	2016	2018
Netherlands	94	95	97
UK	88	92	95
Luxembourg	93	97	93
Finland	89	91	93
Sweden	87	89	90
Denmark	85	92	90
Germany	87	90	90
Estonia	81	85	89
Ireland	80	86	88
Austria	79	85	88
Slovenia	75	78	87
EU-28	78	83	86
Spain	73	81	86
Czech Rep.	76	80	86
Cyprus	69	74	86
Malta	80	81	84
Belgium	81	82	84
Hungary	73	78	83
Italy	71	77	83
France	77	79	81
Croatia	68	77	81
Slovakia	76	78	79
Poland	71	76	79
Latvia	73	75	79
Romania	58	70	79
Lithuania	65	71	78
Portugal	63	73	77
Greece	65	68	76
Bulgaria	56	63	71

Figure 3.5.3 – Household Broadband Penetration, 2008 - 2018



3.6 Wi-Fi Broadband Access

While Wi-Fi originally emerged as an alternative to share broadband connectivity in the home and to provide access to nomadic laptop users in airports and other public places, it is now being used by a broader range of service providers with different business models and services which include in home connectivity, outdoor access for nomadic users, and off-loading and coverage alternatives for mobile operators.

ComReg presents data on the Wi-Fi market based on the number of public Wi-Fi hotspots and access points located nationally. Internet hotspots are typically public wireless access points where a laptop computer or other portable devices such as a smartphone or tablet can connect to the internet. A Wi-Fi hotspot can be made up of one or more Wi-Fi access points[70]. Wi-Fi hotspots tend to be found in airports, hotel lobbies and cafés and restaurants. In many cases, the user pays for high-speed internet access at an access point, based either on a vouchered payment for a specific amount of time online or a recurring monthly subscription. There are a number of providers of these services in Ireland including Sky Ireland, BT Ireland and Virgin Media.

Comparing Q3 2018 to Q3 2019, the number of Wi-Fi hotspots increased by 4.8% and the number of access points increased by 1.9%. Wi-Fi minutes decreased by 4.9% over this period. A breakout of the data by operators' percentage shares in Q2 2019 is also provided below.

Figure 3.6.1 – Wi-Fi Hotspots, Access Points and Minutes of Use

	Q3 2019	Quarterly Change Q2'19 – Q3'19	Annual Change Q3'18 – Q3'19
Wi-Fi Hotspots	1,333	-0.3%	+4.8%
Wi-Fi Access Points	4,598	+1.6%	+1.9%
Wi-Fi Minutes of Use	542,802,967	+2.9%	-4.9%

	Virgin Media	BT	OAOs
Wi-Fi Hotspots	58.4%	15.8%	25.7%
Wi-Fi Access Points	83.5%	4.7%	11.8%
Wi-Fi Minutes of Use	68.5%	27.8%	3.8%

[70] Hotspots are typically public locations at which broadband internet access can be obtained. At these hotspots, users can wirelessly connect to the internet either for free or for a fee. Typical locations for such hotspots include cafes and restaurants, hotels and airports. In general terms, more than one access point can be found at a hotspot.

3.7 Fixed and Mobile Broadband Pricing Data

ComReg uses independently collated Strategy Analytics (Teligen) pricing data using OECD-approved methodologies to examine the relative prices of a number of specific fixed and mobile broadband usage baskets of national broadband services and broadband services in other selected countries for residential and business users. The pricing data used for international comparisons includes pricing information for selected countries, namely Germany, Denmark, Spain, Netherlands and the United Kingdom[71].

For national comparisons, the prices advertised by the largest operators (in terms of number of subscribers to fixed broadband services and separately number of subscribers to mobile broadband services) during Q3 2019 were analysed[72] for selected OECD usage baskets. In this QKDR, standalone and bundled fixed broadband service prices advertised by Eir, Virgin Media, Vodafone, Sky, Digiweb and Imagine were analysed. For mobile broadband services, prices advertised by the Three Group, Vodafone, Eir and Tesco Mobile were analysed. Thus, the broadband pricing analysis does not necessarily present the lowest prices available in the entire market, but rather the lowest prices offered by the operators having the largest number of subscribers. It should also be noted that some of the operators included in the analysis do not offer their services nationally[73]. In addition, some operators only offer broadband services bundled with another service (e.g. fixed voice services which can include line rental, sometimes also with an inclusive amount of call minutes). In these instances, the analysis is based on the cost of the bundle excluding any voice related usage patterns, i.e., only broadband usage related factors are taken into account in the analysis.

For international comparisons, prices advertised by the largest operators (in terms of the number of subscribers to fixed broadband services and separately number of subscribers to mobile broadband services) operators in each of the respective countries during Q3 2019 were analysed[74] for selected usage baskets[75] (with an average per country price presented based on the average of lowest price tariffs advertised by three highest ranking operators in national pricing comparisons). In order to enable international comparisons, prices are presented in Euro Purchasing Power Parities (PPPs) and exclude VAT charges. PPPs provide an indication of the cost of telecoms services in countries analysed in relation to the cost of all other products and services.

[71] In future QKDRs ComReg may expand the analysis and include more countries for international price comparisons.
[72] The subscribers of these operators account for 95% of all fixed broadband subscribers and 100% of all mobile broadband subscribers. For fixed broadband, tariffs based on broadband services via DSL, VDSL, FTTP, cable and FWA were analysed. For mobile broadband, tariffs on broadband services via 3G and 4G networks were analysed.
[73] For example, Virgin Media offers fixed broadband services only in the areas where its cable network is available.
[74] The subscribers of these operators jointly account for over 80% of all fixed broadband subscribers and 80% of all mobile broadband subscribers in each of the respective countries.
[75] The same basket was applied to each respective country in order to make the international comparison.

The presented analysis accounts for the fact that broadband services differ in terms of advertised download/upload speeds to ensure that a meaningful comparison can be made between packages in terms of contracted download speeds offered. Packages which limit usage through speed restrictions when usage exceeds inclusive allowances are excluded. The presented analysis also incorporates discounts offered by operators. Nonrecurring charges (e.g. charges for the installation of a service) are discounted/amortised over three years and other recurring fixed costs such as line rental (in case of fixed broadband) are included and any other additional broadband related charges are included in the baskets. Further information on the composition of the broadband basket can be found in the Explanatory Memorandum which accompanies this report.

The following baskets are presented in this report[76]:

OECD Residential and business fixed and mobile broadband baskets

Type of basket	Basket
Fixed Broadband Residential	40GB basket (broadband speeds <=100 Mbps)
Fixed Broadband Residential	120GB basket (broadband speeds >100 Mbps)
Fixed Broadband Business	60GB basket (broadband speeds >25 Mbps)
Mobile Broadband Residential	5GB basket
Mobile Broadband Business	10GB basket

These baskets were selected given their closeness to the national broadband usage patterns observed having regard to the data provided by fixed and mobile broadband operators to ComReg for the purpose of the QKDR (see Figures 3.4.2 and 3.4.3 above for fixed and mobile broadband data usage patterns). ComReg notes that these baskets reflect usage patterns of an average user and do not necessarily reflect prices of tariffs that are geared towards customers having different usage profiles.

ComReg notes that comparisons are based on the prices of advertised Q3 2019 tariffs only and the analysis does not take into consideration other important factors such as quality of the network, levels of customer care, additional units of consumption available after having accounted in the analysis for the units in the OECD usage basket, minimum contract term etc.

[76] In future QKDRs ComReg may expand the analysis based on additional and/or different usage baskets.

OECD Residential Fixed Broadband Service Basket

Figure 3.7.1 compares the cheapest residential tariffs advertised by fixed broadband providers (whether standalone broadband or broadband sold as part of a bundle) for residential customers based on an OECD 40GB and 120GB monthly data usage baskets. For fixed broadband where the advertised download speed of the broadband service does not exceed 100Mbps, Digiweb offers the cheapest tariff for this particular usage profile at €40.64 followed by Vodafone (€40.83) and Sky (€48.61). For fixed broadband where the advertised download speed of broadband service exceeds 100Mbps, Digiweb offers the cheapest tariff (€48.39), followed by Vodafone (€49.17) and Virgin Media (€55.83).

Figure 3.7.1 - Residential Fixed Broadband Basket (National)

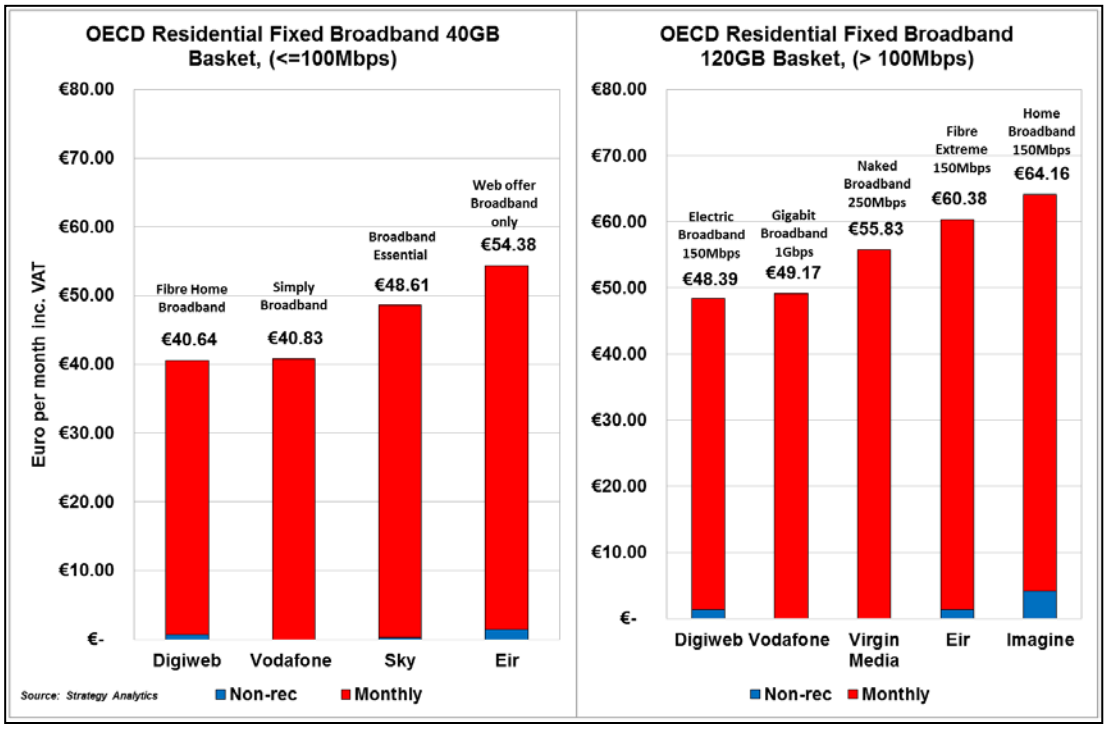
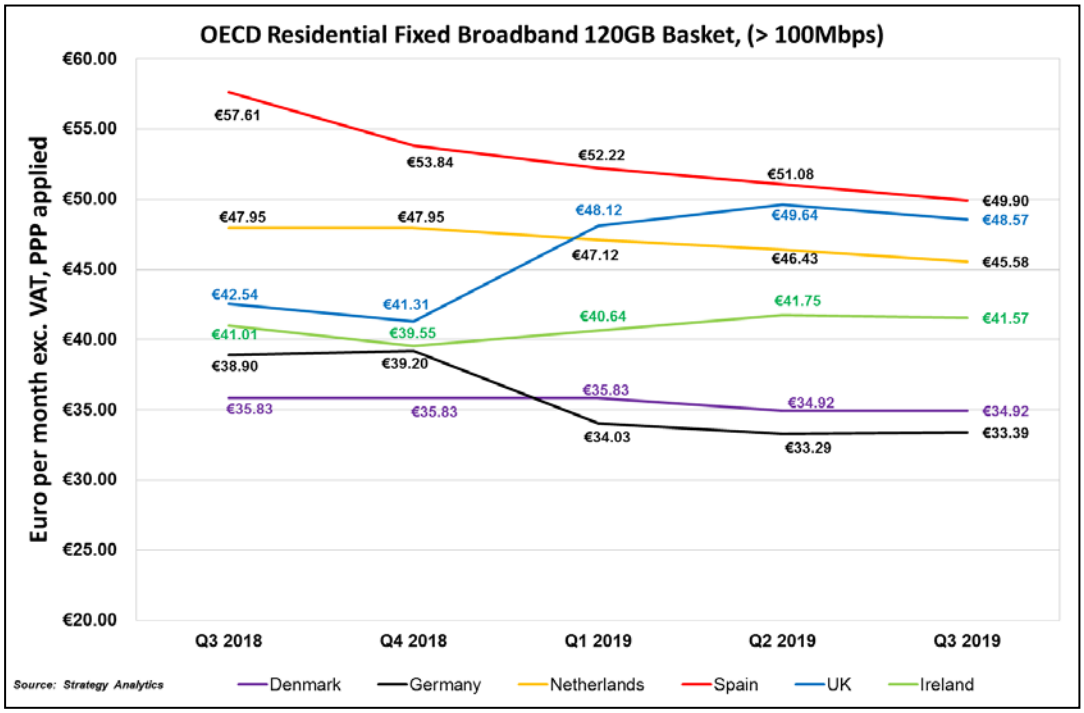


Figure 3.7.2 illustrates Ireland's ranking alongside five other Western European countries. Ireland ranks in third place with an average price of €41.57 for this particular residential basket. The average price in Ireland is 1.8% cheaper than the average price[77] for all of the countries included in the analysis.

[77] The average of prices presented in Figure 3.7.2.

Figure 3.7.2 - Residential Fixed Broadband Basket (International)



OECD Business Fixed Broadband Service Basket

Figure 3.7.3 compares business tariffs advertised by fixed broadband service providers (whether standalone broadband or broadband sold as part of a bundle) for business customers based on a 60GB monthly data usage basket. Presented prices exclude VAT charges. Vodafone offers the cheapest tariff (€40.00) followed by Eir (€40.68) and Virgin Media (€47.22).

Figure 3.7.3 - Business Fixed Broadband Basket (National)

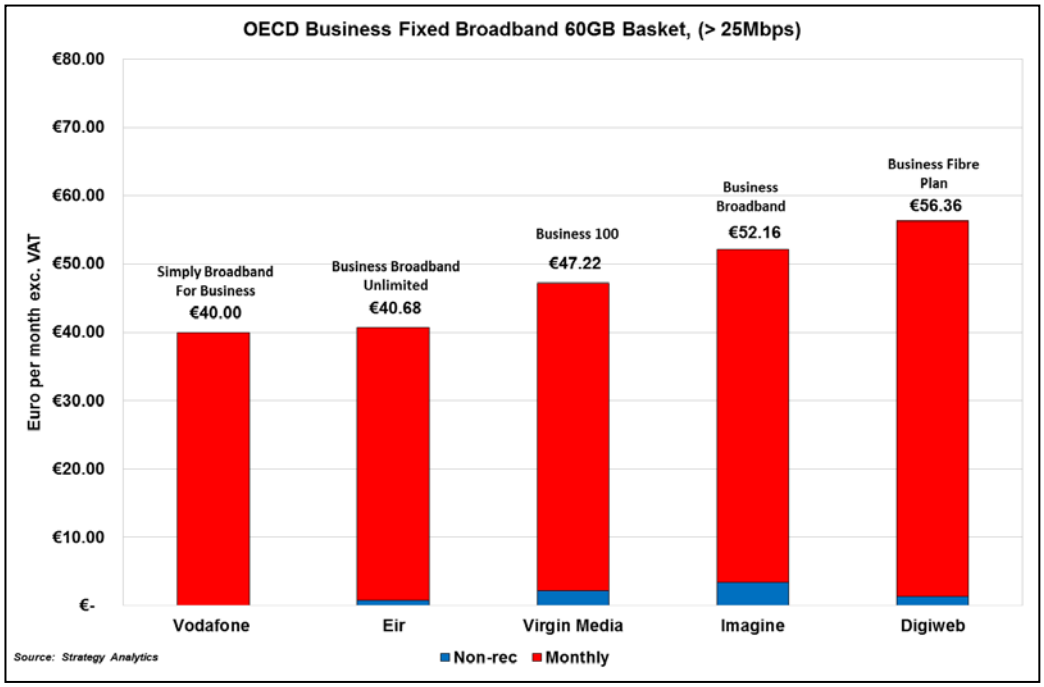
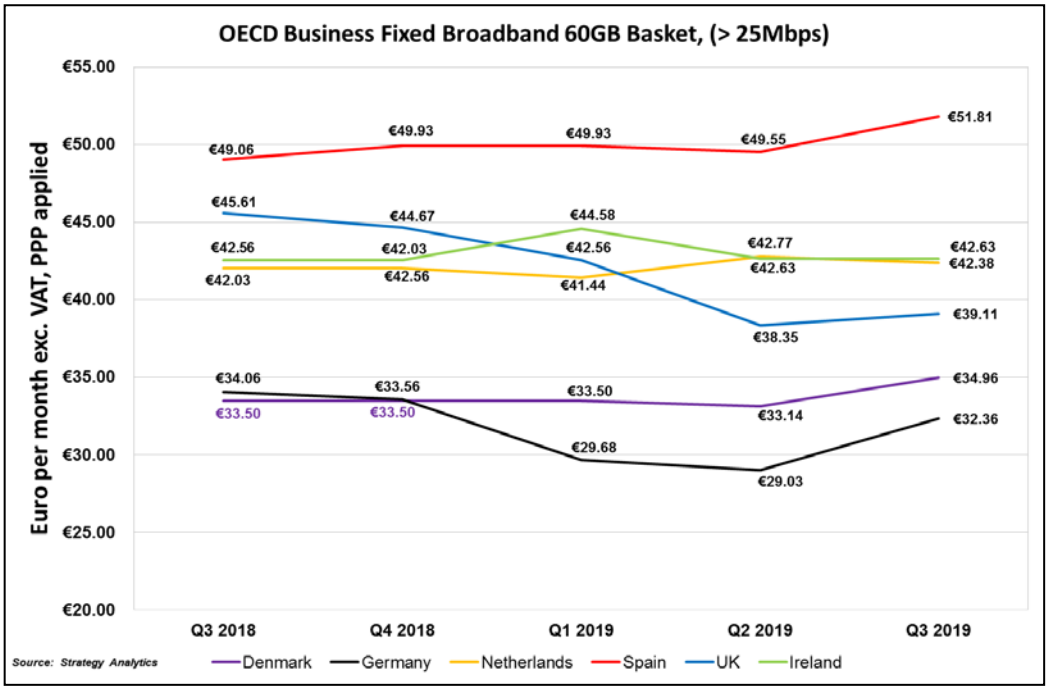


Figure 3.7.4 shows that in an international comparison context Ireland (€42.63[78]) ranks in fifth place. The average price in Ireland is 5.2% more expensive than the average price[79] for all of the countries included in the analysis.

Figure 3.7.4 - Business Fixed Broadband Basket (International)



[78] As noted previously, average prices used for international comparisons exclude VAT charges.

[79] The average of prices presented in Figure 3.7.4.

OECD Residential Mobile Broadband Service Basket

Figure 3.7.5 compares pre-paid and post-paid tariffs advertised by mobile broadband service providers for residential customers based on an OECD 5GB monthly mobile data usage basket. Eir offers the cheapest tariff (€15.00) followed by Vodafone (€21.99) and Three (€29.99).

Figure 3.7.5 - Residential Mobile Broadband Basket (National)

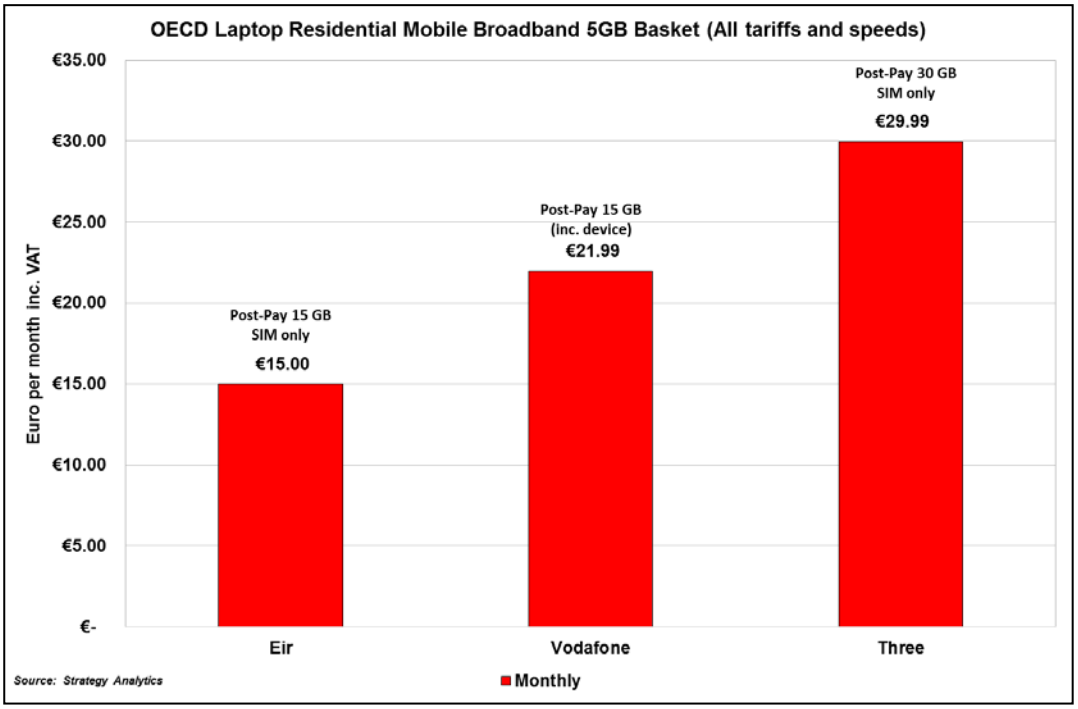
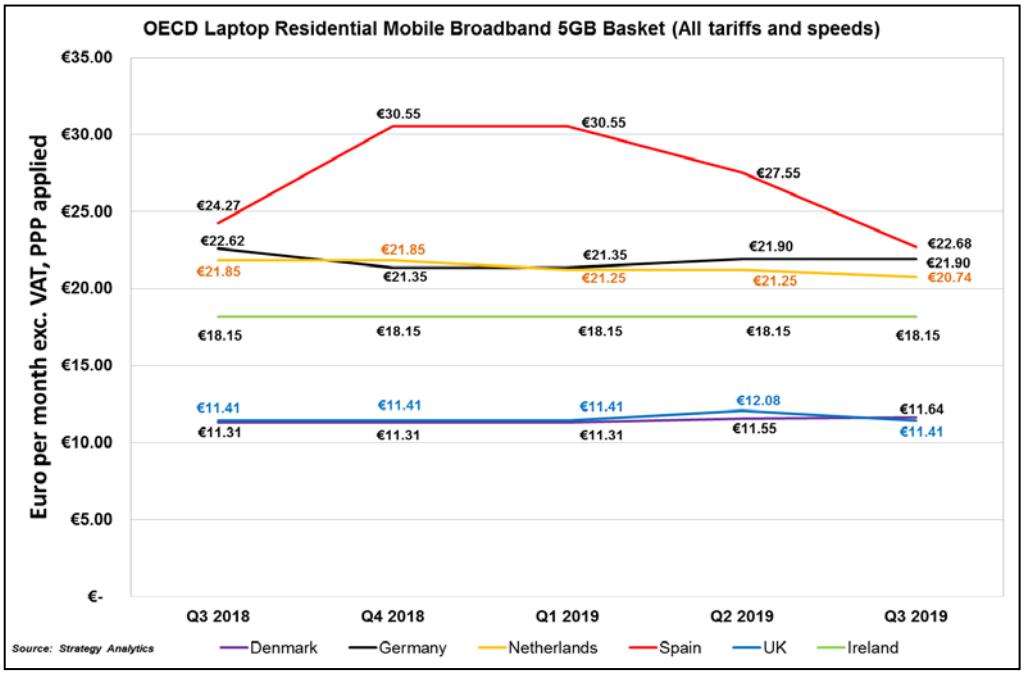


Figure 3.7.6 overleaf illustrates Ireland's ranking alongside five other Western European countries. Ireland ranks in third place with an average price of €18.15[80] for this particular basket. The average price in Ireland is 2.2% more expensive than the average price[81] for all of the countries included in the analysis.

[80] As noted previously, average prices used for international comparisons exclude VAT charges.

[81] The average of prices presented in Figure 3.7.6.

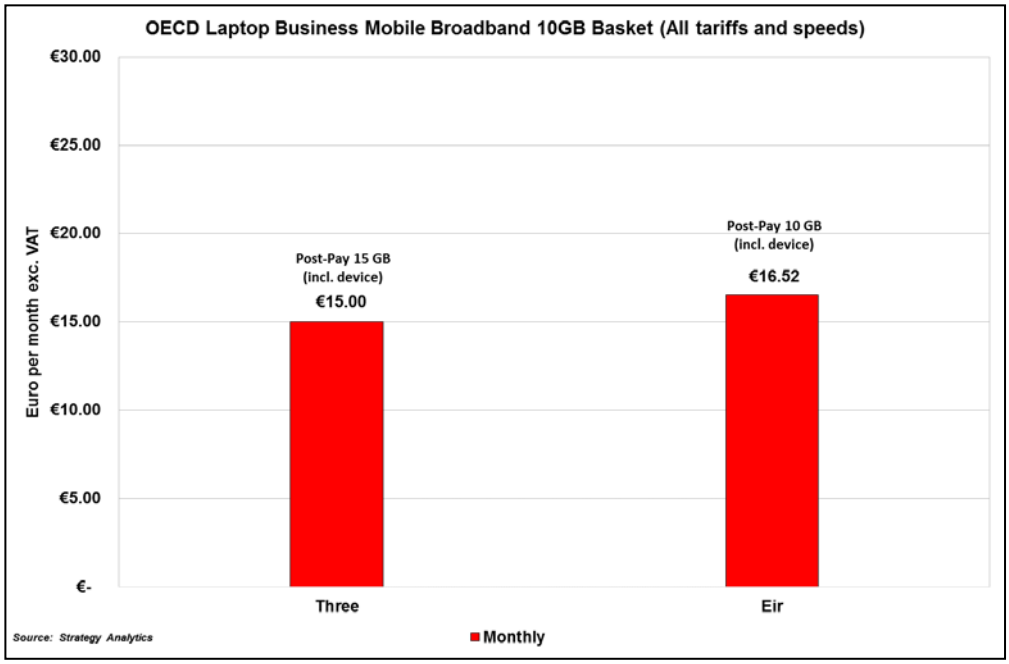
Figure 3.7.6 - Residential Mobile Broadband Basket (International)



OECD Business Mobile Broadband Service Basket

Figure 3.7.7 compares post-paid tariffs advertised by mobile broadband service providers[82] for business customers based on an OECD 10GB monthly data usage basket. Presented prices exclude VAT charges. Three (€15.00) offers the cheapest tariff followed by Eir (€16.52).

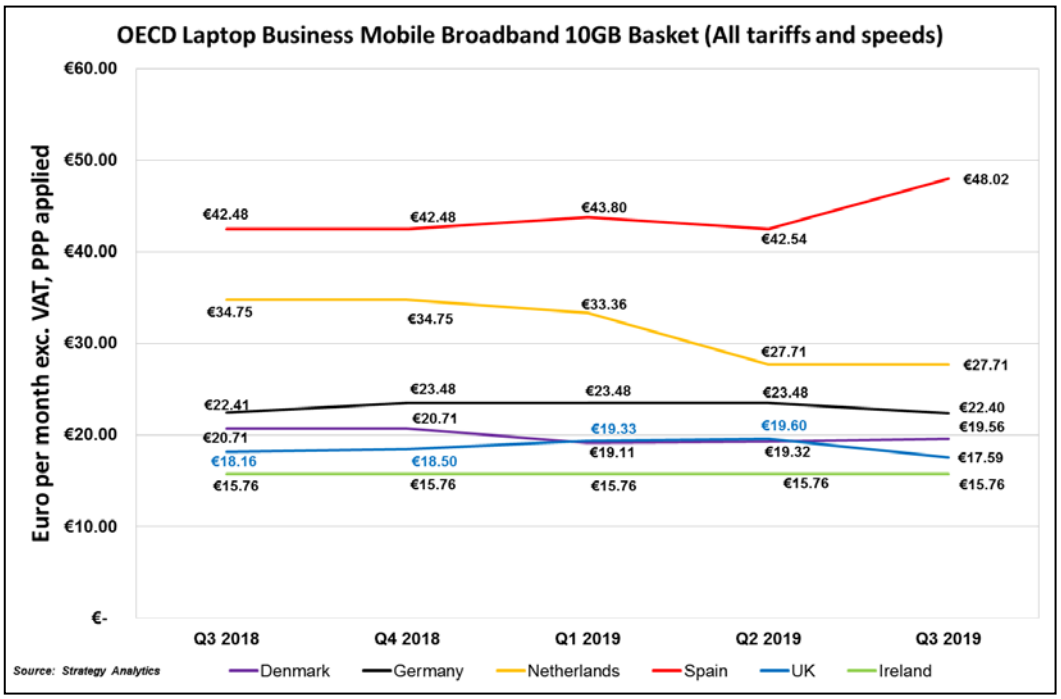
Figure 3.7.7 - Business Mobile Broadband Basket (National)



[82] Only tariffs advertised by Vodafone, Three and Eir were analysed for business customers. Some operators do not offer mobile broadband service to business customers.

Figure 3.7.8 shows that, from an international comparison perspective, Ireland (€15.76[83]) ranks in first place. The average price in Ireland is 37.4% cheaper than the average price[84] for all of the countries included in the analysis.

Figure 3.7.8 - Business Mobile Broadband Basket (International)



[83] As noted previously, average prices used for international comparisons exclude VAT charges.

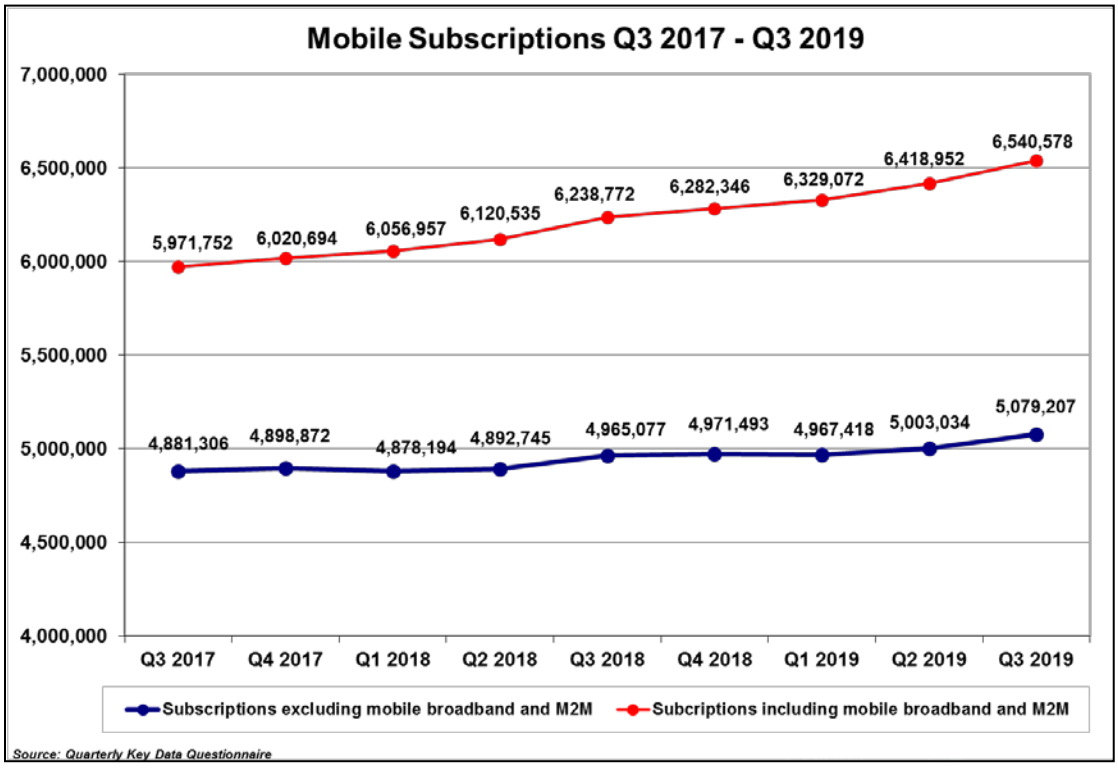
[84] The average of prices presented in Figure 3.7.8.

4. Mobile Market Data

4.1 Number of Subscriptions and Penetration Rate

At the end of Q3 2019 there were 6,540,578 mobile subscriptions in Ireland, including mobile broadband and Machine to Machine ('M2M') subscriptions. If mobile broadband subscriptions (306,633) and M2M subscriptions (1,154,738) are excluded, the total number of mobile subscriptions in Ireland was 5,079,207.

Figure 4.1.1 – Mobile Subscriptions



In Q3 2019 there were 4,825,507 mobile voice and data subscribers using 3G/4G networks in Ireland. This figure can be taken as an indication of the number of smartphone users accessing advanced data services such as web/internet content, online multiplayer gaming content, Video on Demand (VoD) or other equivalent advanced data services (excluding SMS and MMS). This represents approximately 94.8% of all mobile subscriptions (excluding dedicated mobile broadband and M2M).

Figure 4.1.2 below shows the breakdown of total active subscribers, total standard mobile voice and data subscribers using 3G/4G networks and dedicated mobile broadband subscribers.

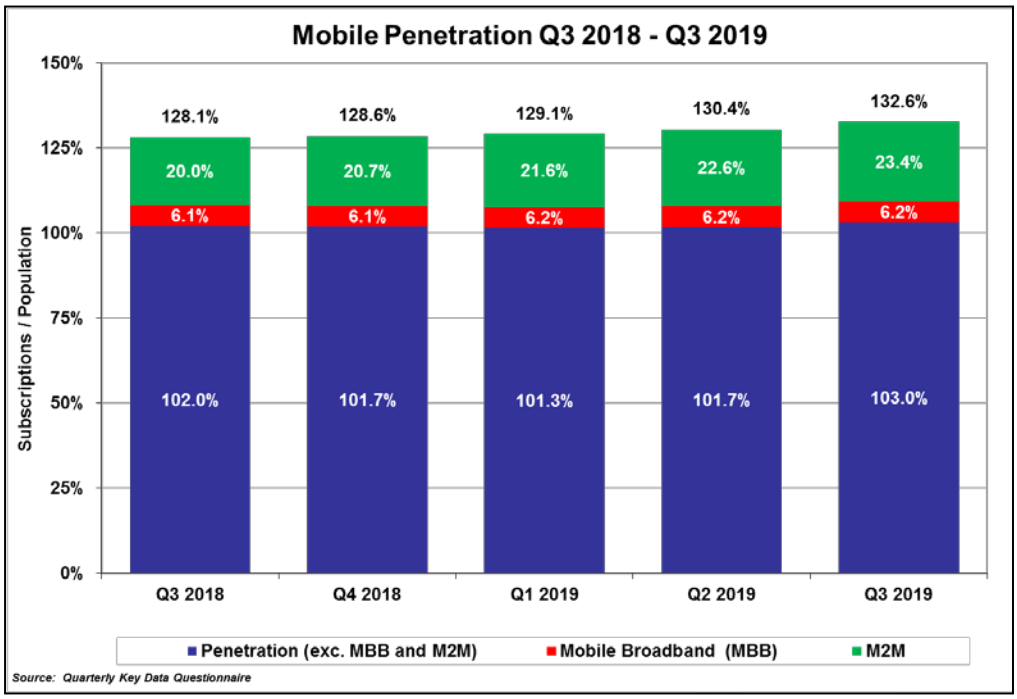
Figure 4.1.2 – Mobile Subscribers using Data Services over 3G/4G Networks

	Q3 2019	Q2 2019	Quarterly Change Q2 '19 – Q3 '19	Annual Change Q3 '18 – Q3 '19
Total active subscriptions	**6,540,578**	**6,418,952**	**+1.9%**	**+4.8%**
Mobile voice and data subscribers	**4,825,507**	**4,745,020**	**+1.7%**	**+3.0%**
Dedicated mobile broadband subscribers	**306,633**	**302,373**	**+0.9%**	**+2.6%**

Figure 4.1.3 charts mobile penetration since Q3 2018 and shows that at the end of Q3 2019, mobile penetration, based on a population of 4,932,900 (using the CSO Q3 2019 estimate), was 132.6% including mobile broadband and M2M and 103.0% excluding mobile broadband and M2M. Mobile penetration is recognised as the standard metric internationally to measure the adoption of mobile services, and is calculated based on the number of active SIM cards relative to population.

Given that some mobile users may have used more than one active SIM card during the period, there is likely to be some over-estimation of actual individual mobile penetration using this metric. ComReg's calculation of mobile subscriptions includes active SIMs bundled with mobile broadband data cards and USB modems for internet access via laptops/PCs, SIMs that enable the flow of data between machines as well as SIM cards used in mobile phones for voice and data services.

Figure 4.1.3 – Irish Mobile Penetration Rate



4.2 The Profile of Mobile Subscriptions in Ireland

Mobile users pay for their mobile service by either purchasing pre-paid credit, or by receiving a monthly bill from their mobile operator, described in this report as a post-paid payment option.

Figures 4.2.1 and 4.2.2 illustrate the mobile subscription base (including and excluding mobile broadband and M2M subscriptions) in Ireland classified by the proportion of pre-paid and post-paid subscriptions on 2G, 3G and 4G networks at the end of Q3 2019. Post-paid subscriptions are increasing, accounting for 59.9% of subscriptions in Q3 2019, up from 57.5% one year previously at the expense of a decline in pre-paid subscriptions. If mobile broadband and M2M subscriptions are excluded, post-paid subscriptions account for 48.8% of subscriptions, up from 47.1% in Q3 2018.

Figure 4.2.1 – Profile of Pre-Paid and Post-Paid Subscriptions

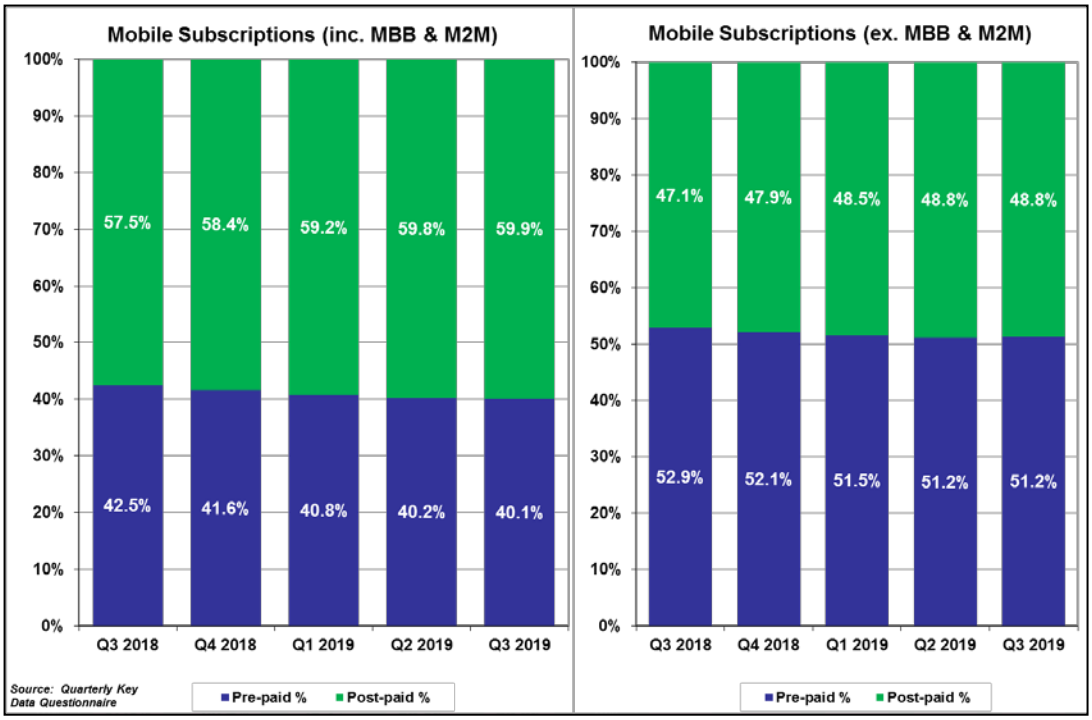


Figure 4.2.2 – Mobile Subscriptions by Pre-pay / Post-pay

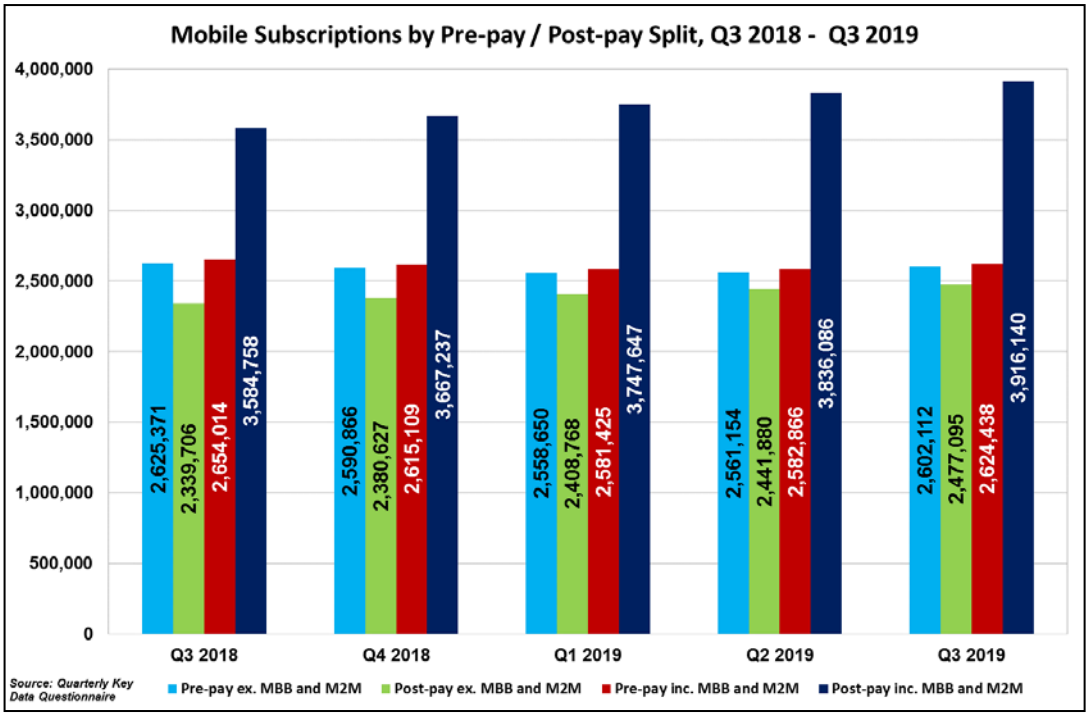


Figure 4.2.3 shows the pre-paid and post-paid subscription profile for each of the mobile operators in the Irish market. Mobile broadband and M2M subscriptions are included. As of Q3 2019, the mobile operator with the highest proportion of post-paid subscriptions was Vodafone (68.2%), followed by Three Group (61.7%), Eir (55.5%) and Tesco Mobile (16.4%). Post-paid subscriptions for OAOs were 47.4%.

Figure 4.2.3 – Profile of Pre-Paid and Post-Paid Subscriptions by Operator

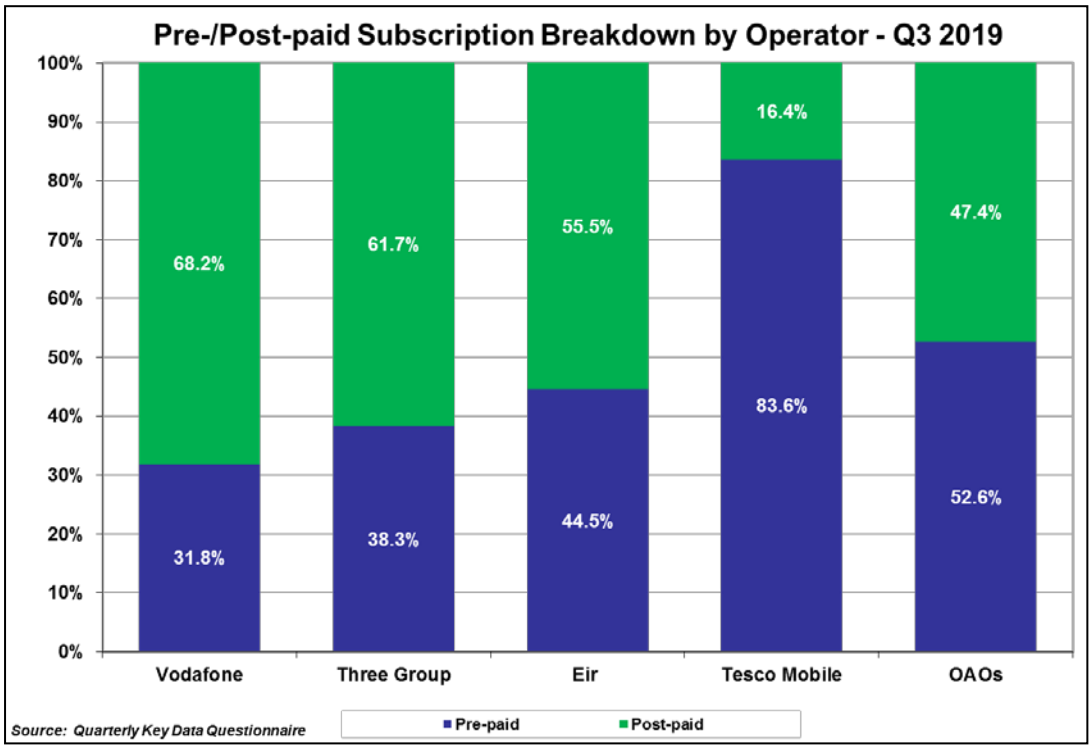


Figure 4.2.4 shows the split between pre-paid and post-paid mobile broadband subscriptions between Q3 2018 and Q3 2019. 92.7% of all mobile broadband subscriptions were post-paid at the end of Q3 2019, up from 90.4% one year previously.

Figure 4.2.4 – Profile of Pre and Post Paid Mobile Broadband Subscriptions

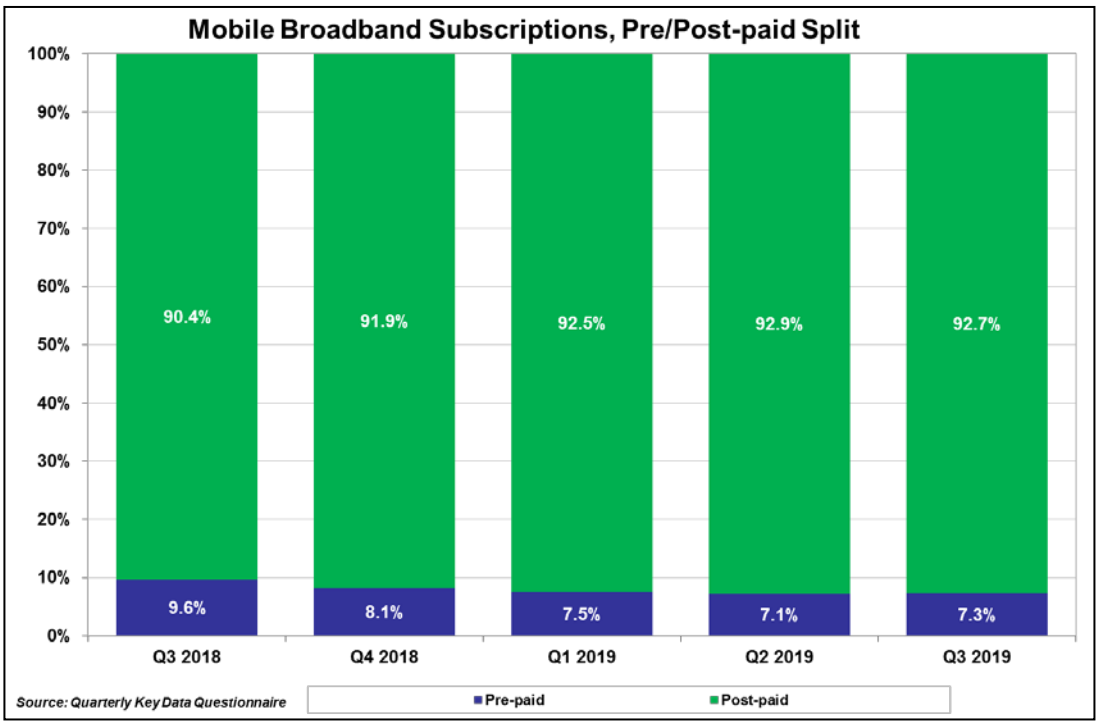


Figure 4.2.5 shows the split of post-paid business and non-business mobile subscriptions including and excluding mobile broadband (MBB) and M2M between Q3 2018 and Q3 2019. Approximately 54.8% of post-paid mobile subscriptions (including mobile broadband and M2M) and 33.9% of post-paid mobile subscriptions (excluding mobile broadband and M2M) were classed as business subscriptions in Q3 2019.

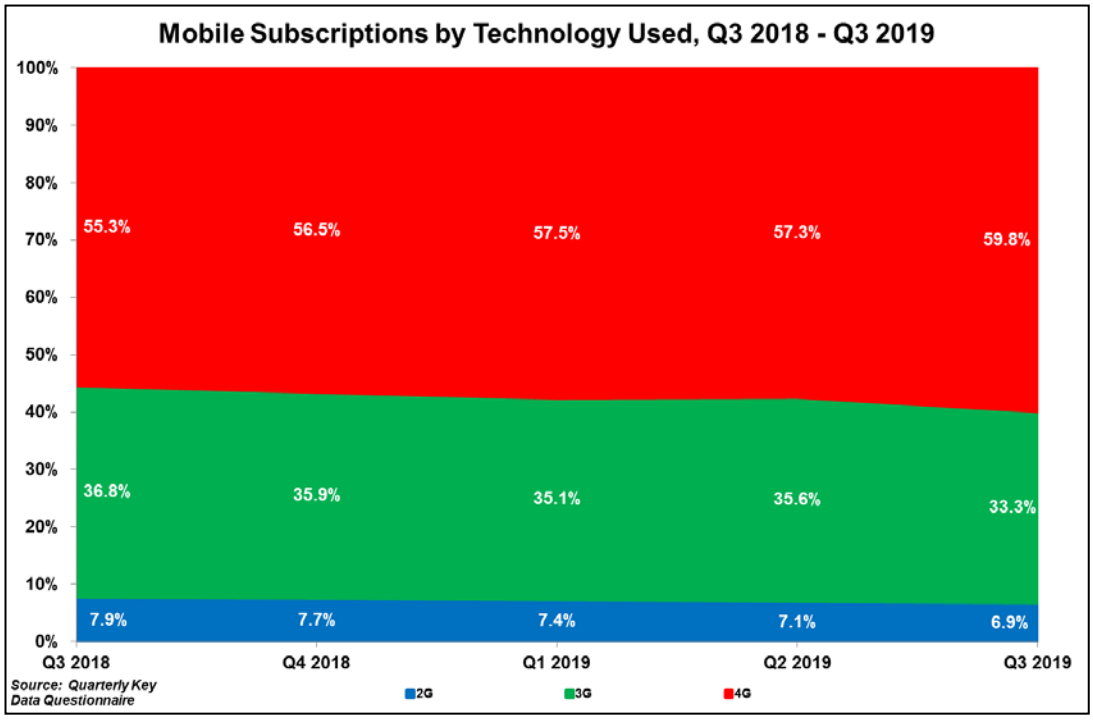
Figure 4.2.5 – Post-Paid Business and Residential Mobile Subscriptions

	Q3 2018	Q4 2018	Q1 2019	Q2 2019	Q3 2019
Residential subscriptions inc. MBB & M2M[85]	1,675,761	1,704,949	1,724,609	1,745,229	1,769,726
Residential subscriptions ex. MBB & M2M	1,543,066	1,571,515	1,590,080	1,611,113	1,636,604
Business subscriptions inc. MBB & M2M	1,908,997	1,962,288	2,023,038	2,090,857	2,146,414
Business subscriptions ex. MBB & M2M	796,640	809,112	818,688	830,767	840,491

Figure 4.2.6 shows the split of mobile subscribers (including mobile broadband and M2M subscribers) broken down by mobile network technology used by these subscribers. For example, subscribers who purchase 4G plans and have generated traffic on a 4G network are categorised as 4G subscribers. Categories are mutually exclusive in that subscribers who have generated traffic on multiple networks (e.g. 2G and 3G) are categorised as users of the higher quality network (3G in this example). By the end of Q3 2019, 59.8% of mobile subscribers were categorised as 4G network users, 33.3% were using 3G networks with the remaining 6.9% of subscribers using 2G networks only.

[85] All M2M subscriptions are currently assumed to be business subscriptions.

Figure 4.2.6 – Mobile Subscriptions by Network Used[86]



4.3 Mobile Volumes

Figure 4.3.1a illustrates the change in voice minutes, SMS, and MMS (Multimedia Messaging Service) messages and data volumes[87] (internet uploads and downloads) sent between Q3 2016 and Q3 2019. Total retail mobile voice traffic was 3.085 billion minutes in Q3 2019, down by 0.3% on Q3 2018.

The total number of SMS messages sent by Irish mobile users was over 894 million in Q3 2019, down 17.8% on Q3 2018 and down by 3.9% since Q2 2019. The number of multimedia messages (MMS) sent was down by 15.8% in the year to Q3 2019. Data usage volumes continue to rise, increasing by 30.8% in the year to Q3 2019 to reach 138,869 terabytes.

[86] ComReg notes off-trend 3G and 4G proportions in Q2 2019. This is directly due to subscription data submitted from Three Ireland (Hutchison) Limited, currently under reservation at the time of publication. Please see note O on page 9. This issue is separate from revised 3G and 4G subscription data detailed in note 8 of the corrigendum on page 5 of this QKDR.

[87] Data volumes means mobile traffic for which customers do and do not have to pay per MB charges and refers to both uploads and downloads. Retail international roaming data downloaded from network subscribers roaming on foreign networks (including EU-28) is also included.

Figure 4.3.1a – Total Voice, SMS, MMS and Data Volumes

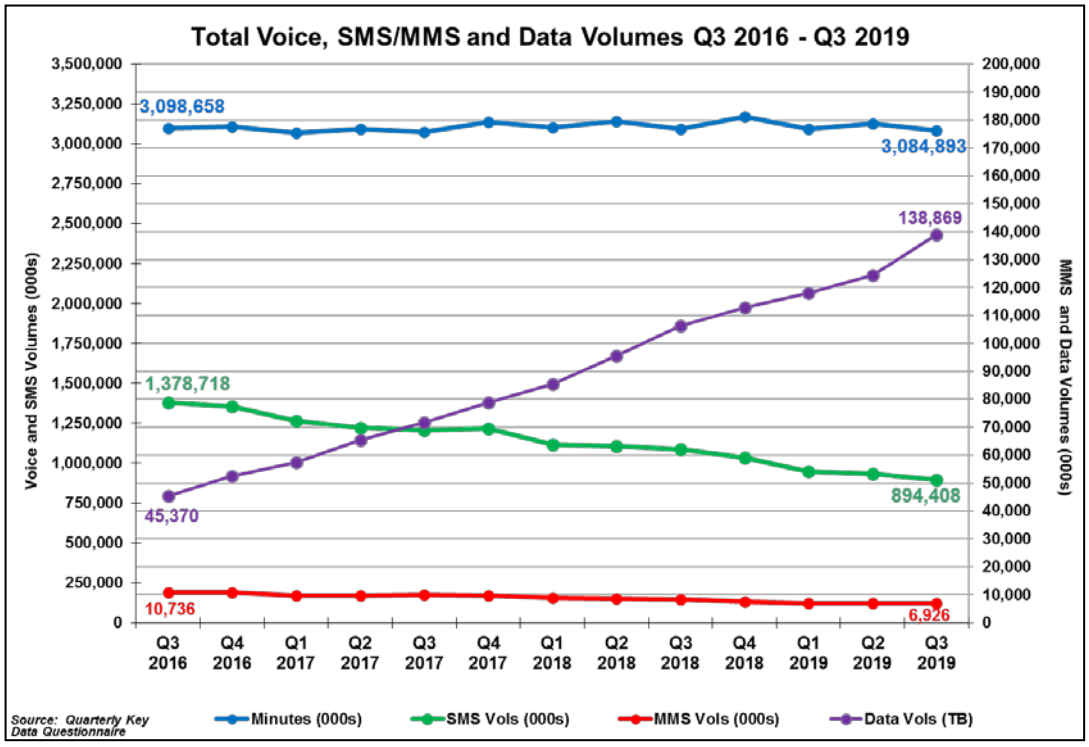


Figure 4.3.1b focuses specifically on total roaming (use of mobile services from Irish subscribers abroad) volumes for voice minutes, SMS and MMS messages (combined) and other data volumes (internet uploads and downloads) between Q3 2016 and Q3 2019.

Seasonal effects of mobile volumes for all three metrics are clearly visible with Q3 of each year showing peak use, likely corresponding with summer holiday periods. The EU 'Roam Like At Home' roaming regulations came into effect on 15 June 2017,[88] this is likely to have contributed to the increases in roaming traffic.

Total retail roaming mobile voice traffic was over 91 million minutes in Q3 2019, up by 7.0% on Q3 2018. Total combined SMS and MMS roaming messages sent by Irish mobile users was over 34 million in Q3 2019, down 2.5% on Q3 2018. Data usage volumes for Q3 2019 were 5,138 TB, up 56.6% on Q3 2018.

[88] Under the EU Roam Like At Home ('RLAH') regulations, when roaming within the EEA, subscribers are charged the domestic retail price for calls, texts and data, subject to certain exceptions. Please see ComReg document 17/55r for further details.

Figure 4.3.1b – Roaming Voice, SMS, MMS and Data Volumes

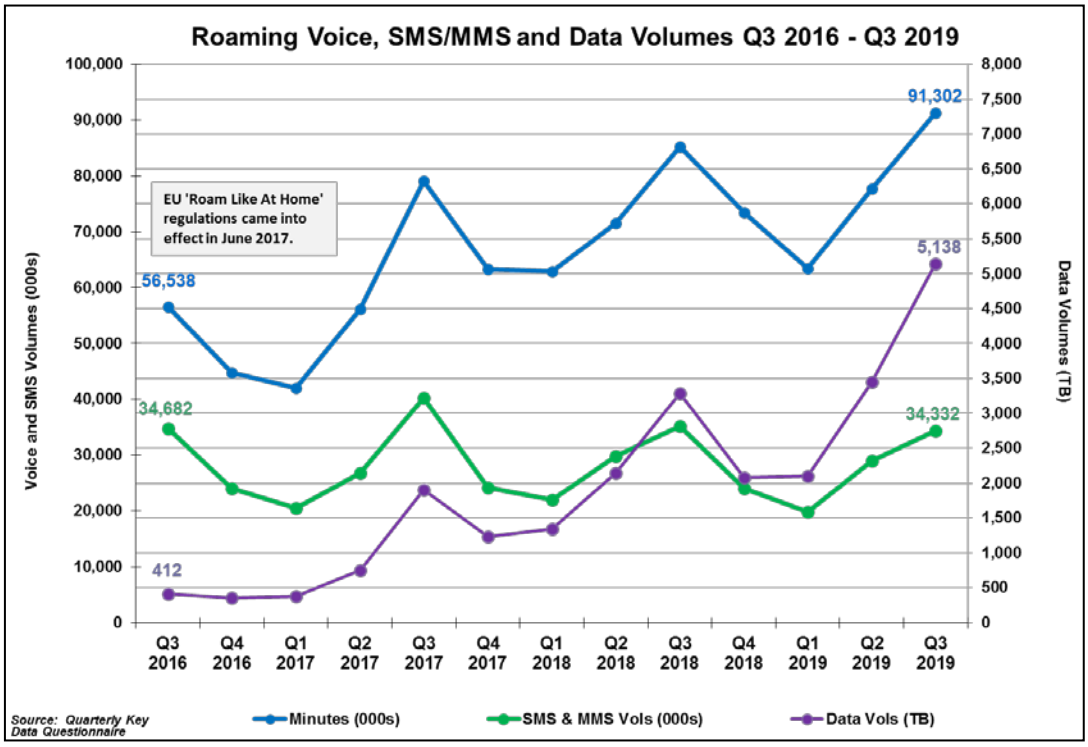


Figure 4.3.2 illustrates the share of types of mobile voice call minutes. As of Q3 2019, 75.9% of all mobile voice minutes were classified as mobile-to-mobile (on-net and off-net), 12.2% of mobile voice minutes were to fixed line phones, 8.6% were classified as international and roaming minutes and the remaining 3.3% were advanced voice minutes which include calls to premium rate services.

Figure 4.3.2 – Voice Call Minute Volumes by Type

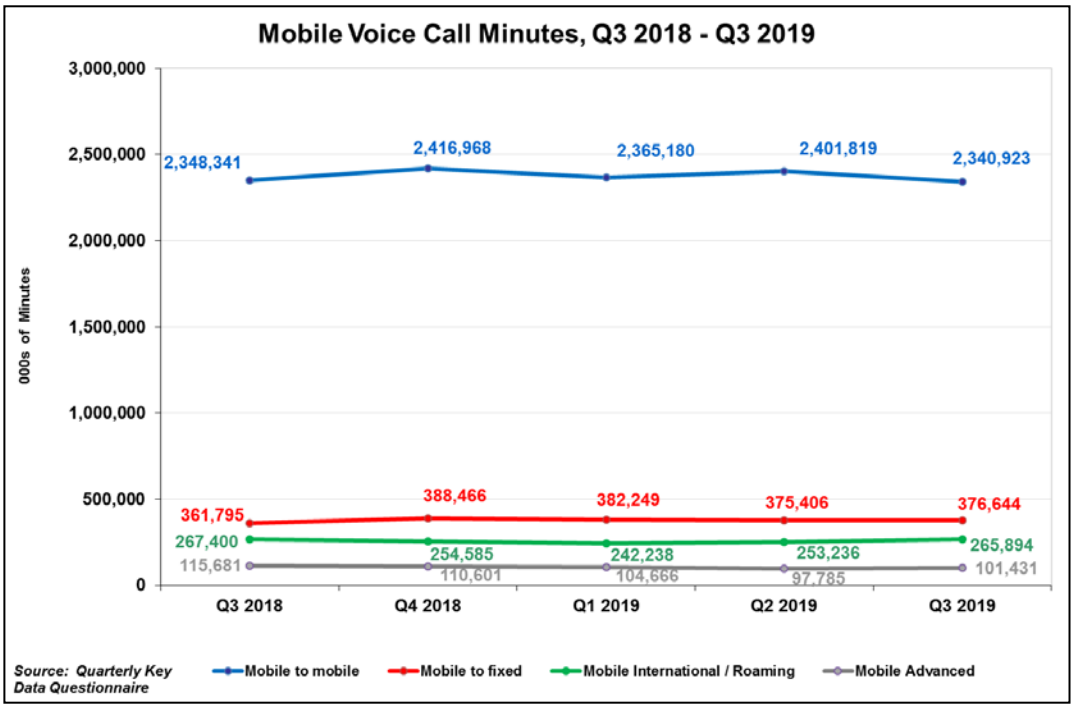


Figure 4.3.3 shows the change in the on-net and off-net mobile to mobile voice call minutes since Q3 2018. During Q3 2019, 53.9% of all mobile to mobile voice minutes were classified as on-net, down from 55.0% in Q3 2018.

Figure 4.3.3 – Mobile to Mobile Voice Call Minute Volumes by Type

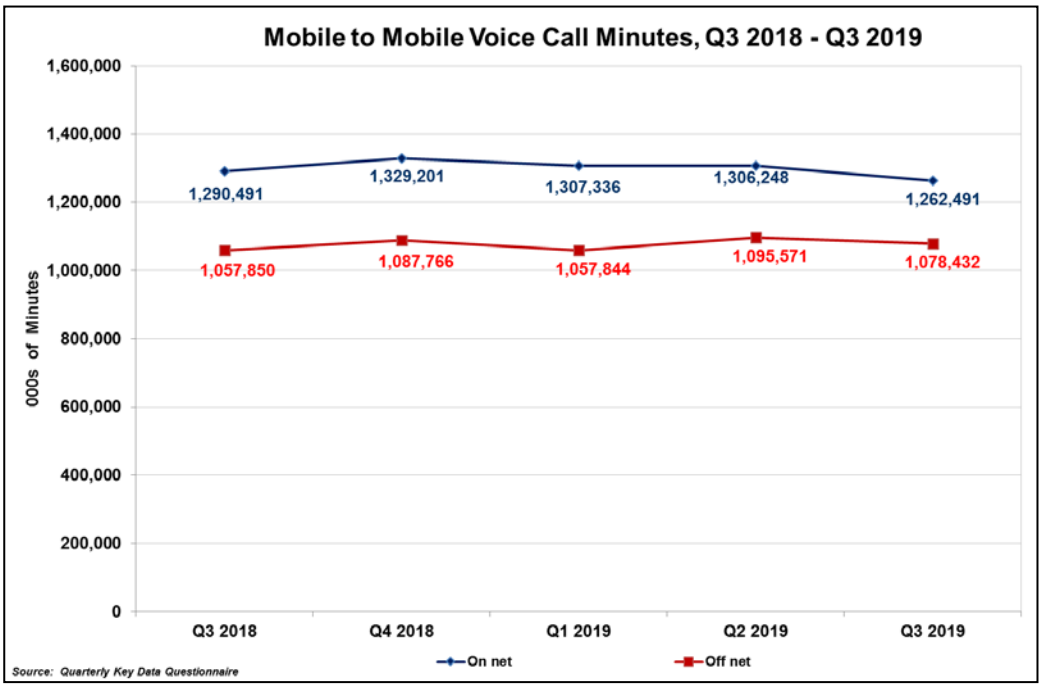


Figure 4.3.4 shows changes in monthly mobile voice call minutes per subscription. In Q3 2019 the average usage was 202.5 minutes (down 2.5% on Q3 2018).

Figure 4.3.4 – Monthly Mobile Voice Call Minutes per Subscription by Type

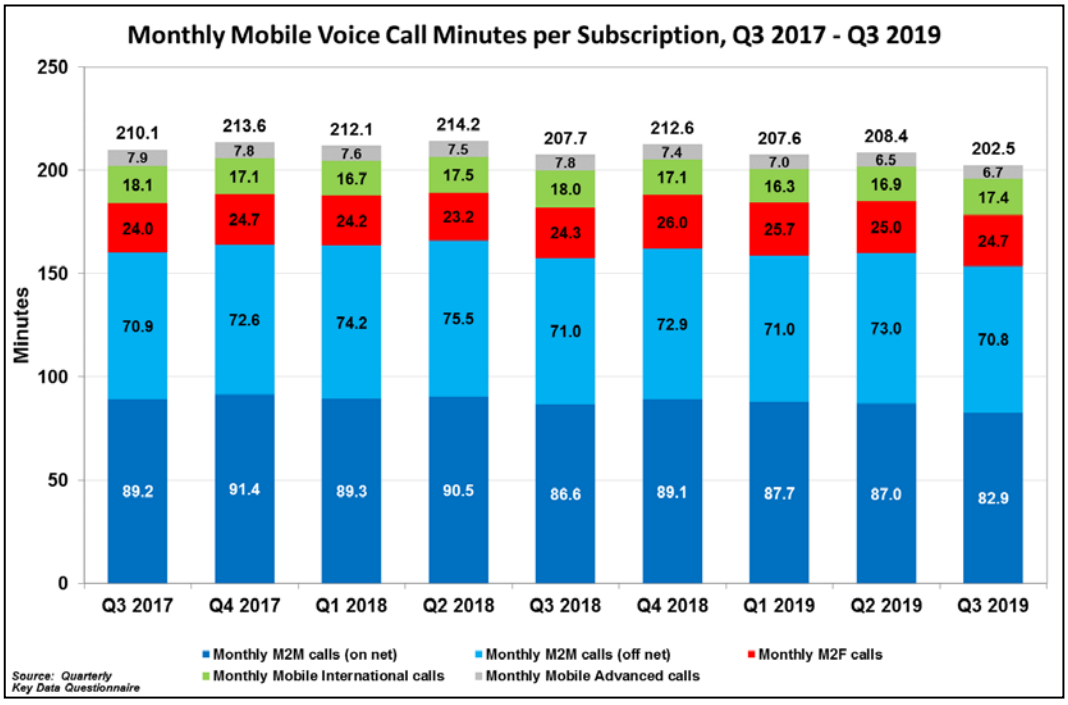


Figure 4.3.5 shows the change in the monthly mobile data volumes per subscription. In Q3 2019 the average monthly number of SMS/MMS sent was 59 and the average traffic per smartphone[89] reached 7.2 GB of data, while the average traffic per dedicated mobile broadband subscriber was 31.3 GB of data[90].

Figure 4.3.5 – Monthly Mobile Messaging and Data Volumes per Subscription

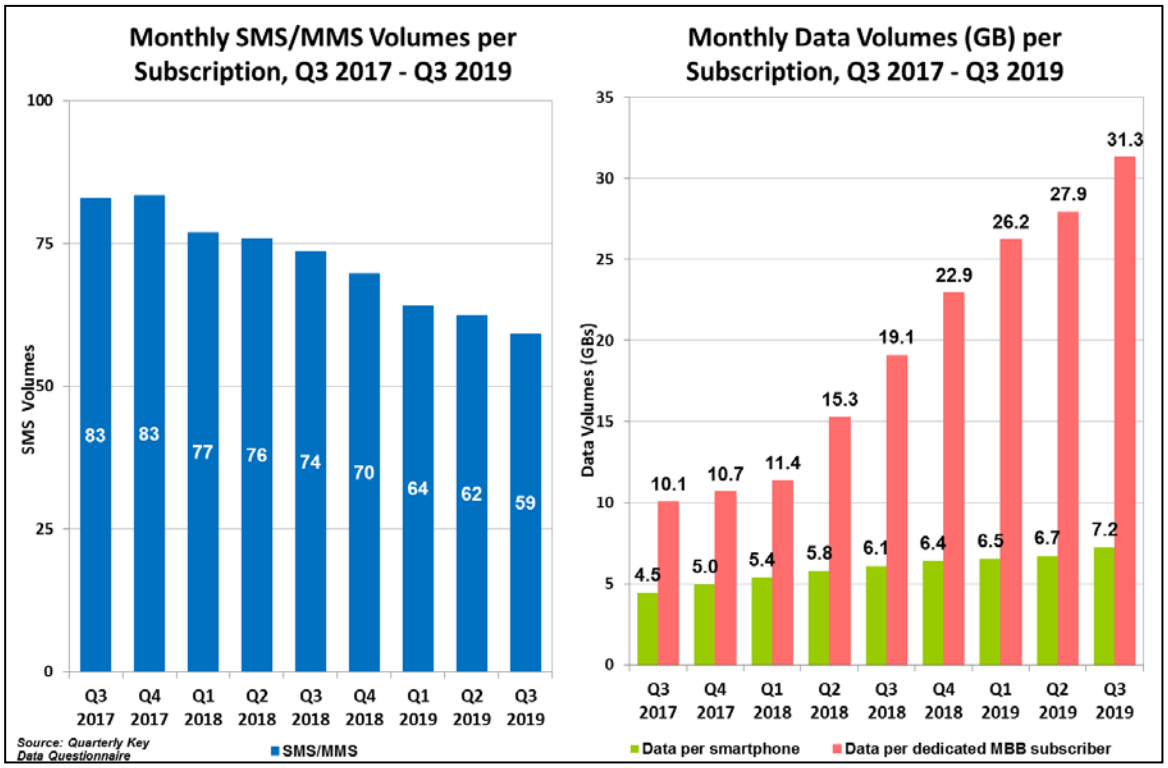


Figure 4.3.6 provides the breakdown of domestic mobile data volumes by mobile network technology[91]. Of all mobile data from Q3 2019 111,982 terabytes or 83.8% was generated by 4G network users, up from 80.3% in Q3 2018[92].

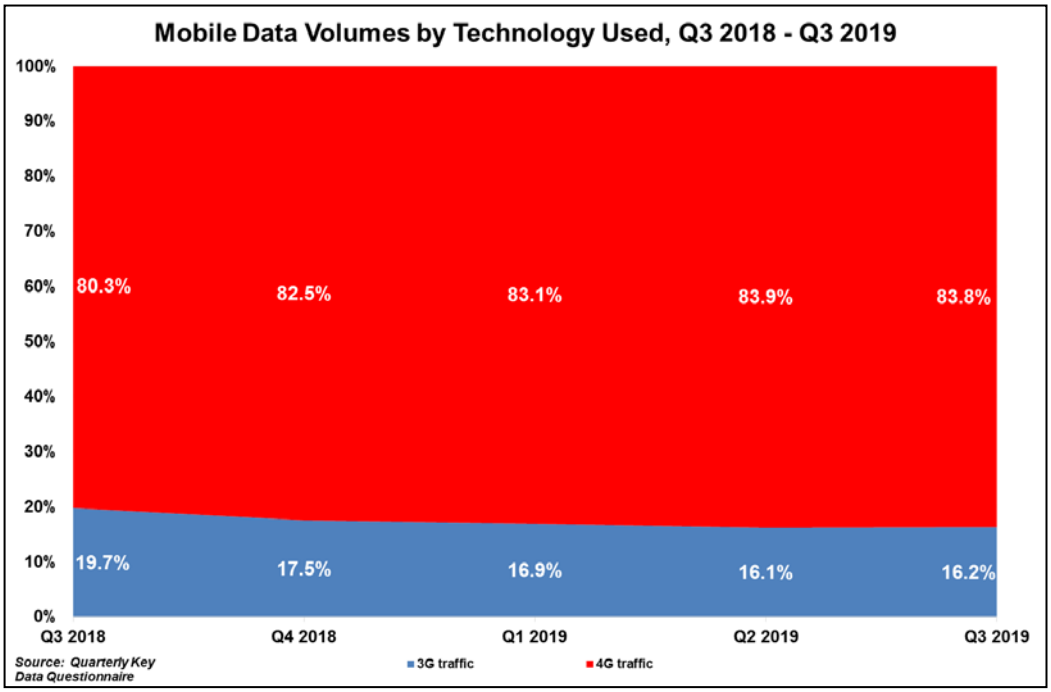
[89] Based on the number of standard mobile voice and data subscribers using 3G and 4G networks.

[90] Data traffic refers to both uploads and downloads.

[91] In QKDR Q2 2019 the methodology underpinning figure 4.3.6 was amended. Previously roaming data volumes were included in the former '2G and 3G' category given no technology breakout. With increasing roaming data volumes this would lead to over-represented '2G and 3G' proportions. Therefore, in order to improve accuracy, roaming data volumes have been excluded with the same approach applied retrospectively. M2M and auxiliary traffic, which was assumed to be 2G or 3G, has also been removed. Figure 4.3.6 now consists solely of 3G and 4G traffic.

[92] Mobile 3G and 4G data volume proportions were revised from Q1 2016 to Q2 2019. See note 9 in the corrigendum.

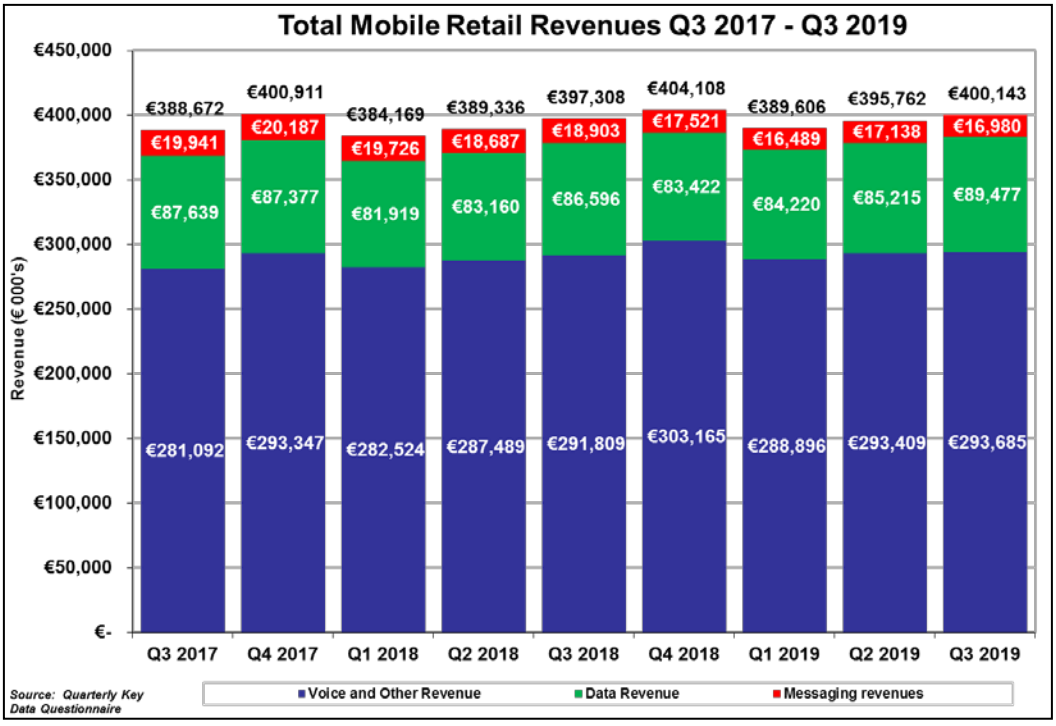
Figure 4.3.6 – Mobile Data Volumes by Technology



4.4 Mobile Revenues

Figure 4.4.1 shows that mobile retail revenues for Q3 2019 were over €400 million. Messaging revenues decreased by 1.0% this quarter, voice and other revenues increased by 0.2% while data revenues increased by 4.5% since Q2 2019.

Figure 4.4.1 – Total Mobile Retail Revenues



Wholesale mobile revenues were over €46 million in Q3 2019 (an increase of 4.8% since Q2 2019), the vast majority accounted for by terminating traffic, followed by roaming[93] and access[94] revenues.

4.5 Average Monthly Revenue per User

Mobile ARPU is a function of both the price of mobile services and the level of usage of mobile services. Figure 4.5.1a below shows quarterly change while figure 4.5.1b overleaf illustrates monthly ARPU for mobile phone services[95], mobile broadband and machine-to machine broken down by prepaid and post-paid subscribers.

In Q3 2019 mobile ARPU for prepaid mobile phone subscribers was €14.53 per month while mobile ARPU for post-paid mobile phone subscribers was €36.20 per month. For the same period mobile ARPU for prepaid mobile broadband subscribers was €16.20 per month while mobile ARPU for post-paid mobile broadband subscribers was €18.96 per month. ARPU for combined or 'blended' prepaid and post-paid mobile phone subscribers was €25.12 in Q3 2019 and €18.78 for mobile broadband subscribers. ARPU for machine-to-machine subscriptions, which are all post-paid, was €1.46 for Q3 2019.

Figure 4.5.1a – Monthly Average Revenue per User by Mobile Service

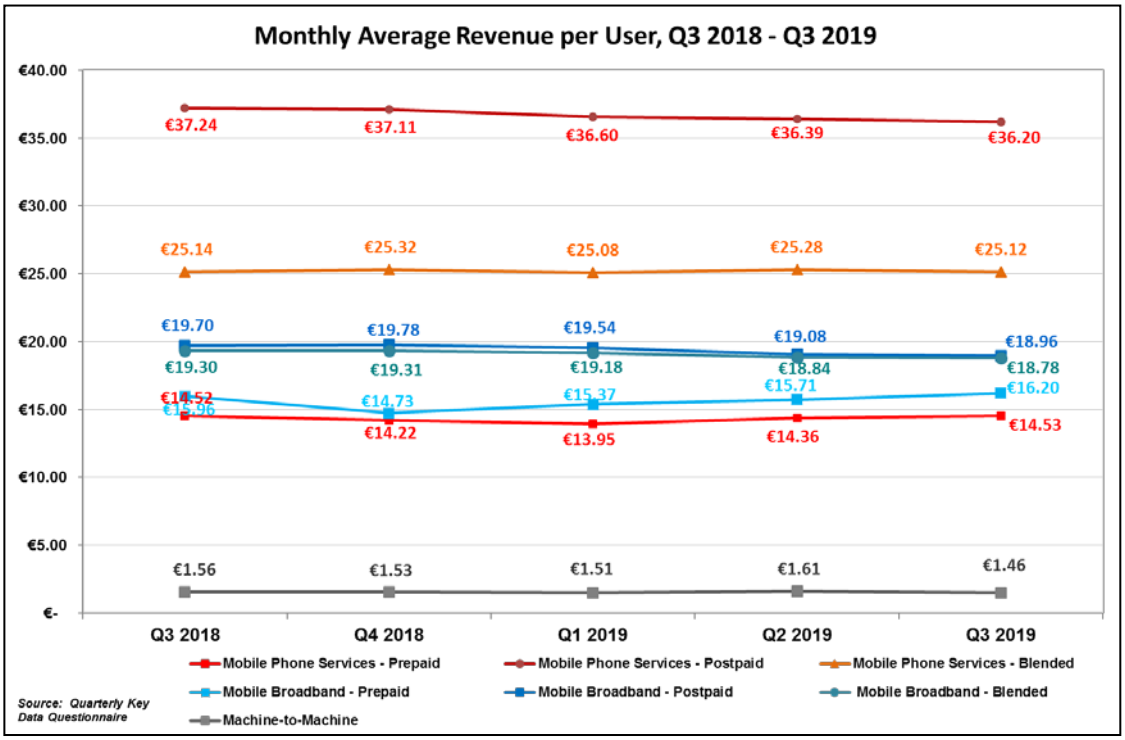
All operators	Q3 2019	Q2 2019	Q2'19 - Q3'19 Change
Mobile Phone Services - Prepaid	€14.53	€14.36	+1.2%
Mobile Phone Services - Postpaid	€36.20	€36.39	-0.5%
Mobile Phone Services - Blended	€25.12	€25.28	-0.6%
Mobile Broadband - Prepaid	€16.20	€15.71	+3.1%
Mobile Broadband - Postpaid	€18.96	€19.08	-0.6%
Mobile Broadband - Blended	€18.78	€18.84	-0.3%
Machine-to-Machine	€1.46	€1.61	-9.2%

[93] Revenues from the provision of wholesale roaming (inbound) services (voice/text/data services). Excludes revenues from the provision of wholesale roaming (outbound) services to hosted MVNOs.

[94] Includes revenues from the wholesale provision of voice, messaging and data services to MVNOs and access revenues not related to traffic. Includes revenues from the provision of wholesale roaming (outbound) services (voice/text/data services) to hosted MVNOs. Includes revenues from wholesale provision of voice, messaging and data services based on national roaming agreements.

[95] Mobile phone services include voice calls, SMS/MMS messaging, and data use.

Figure 4.5.1b – Monthly Average Revenue per User by Mobile Service



4.6 Machine to Machine Subscriptions

Machine to Machine (M2M) refers to technologies that involve data communication between devices or systems in which, at least in principle, human intervention does not occur. These technologies may encompass either wireless or wired communications, or both. M2M communication is already widely deployed in Ireland and its usage is set to grow rapidly, driven in no small part by the expansion of next generation telecommunications technology and a decline in the cost of the embedded wireless modules and sensors that enable M2M services. This continued improvement in the infrastructural environment around M2M has led to a rapid growth of applications and services that meet users' business and lifestyle needs. M2M technologies transfer data on the condition of physical assets and devices to a central location (which is distantly located the devices) for effective monitoring and control. M2M has a multitude of uses, with current deployments in the healthcare, energy, home automation and transportation sectors. Specific examples of M2M applications include smart metering, vehicle and consignment tracking and alarm monitoring systems of various kinds, ATM machines signalling the need for cash replacement, smart grid monitoring of real time electricity demand, smart home applications such as switching on and off lights, heating and other appliances.

Different networking technologies can be used to connect M2M devices, depending on the amount of mobility needed, quality required, data rate, the degree of dispersion of

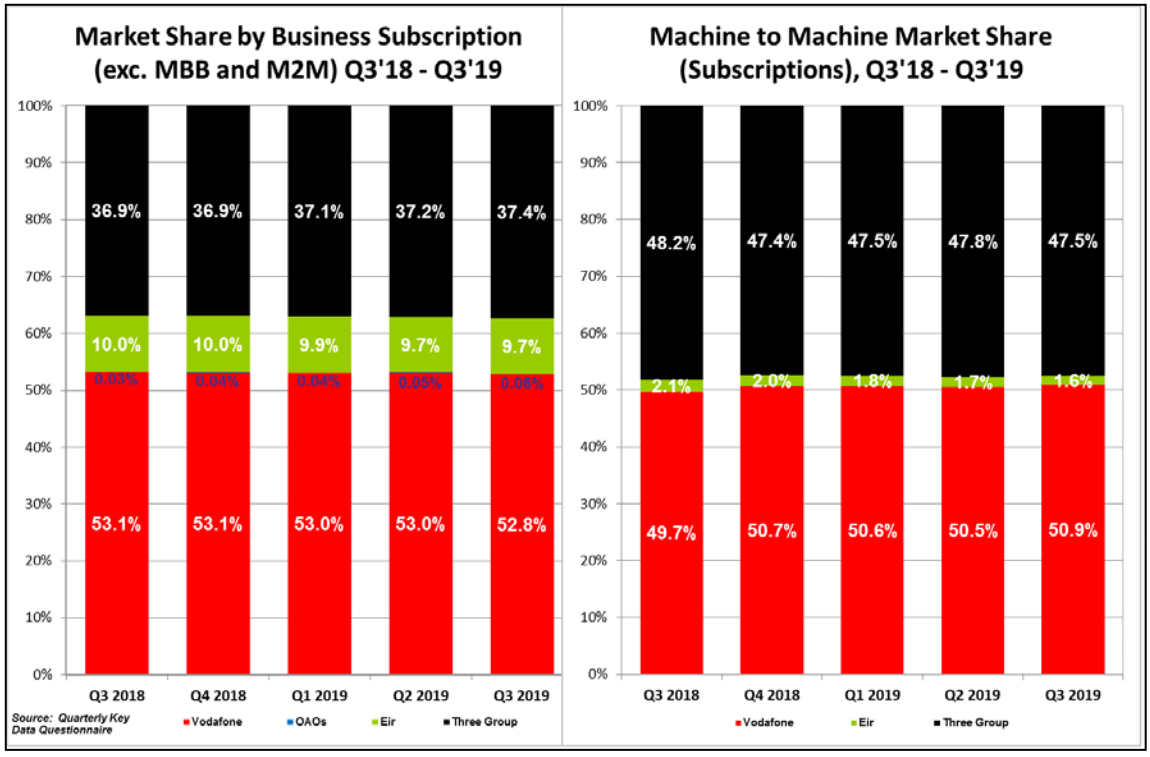
devices over an area, and so on. Gathering data on dedicated M2M mobile connections assists ComReg in assessing future regulatory needs for M2M, e.g. for numbering resources. The additional data also allows for more accurate assessment of mobile telephony and broadband connections.

There were 1,154,738 M2M subscriptions at the end of Q2 2019. This is an increase of 18.5% since Q3 2018 and represents 17.7% of all mobile subscriptions. Figure 4.6.1 outlines market shares based on active M2M subscriptions as well as market shares in terms of business subscribers (including mobile broadband and M2M subscriptions).

In Q3 2019 Vodafone had the largest market share of M2M subscriptions at 50.9% followed by Three Group with 47.5% of market share. Eir had the remaining 1.6% of M2M subscriptions.

In Q3 2019, Vodafone had the largest market share in terms of mobile voice business subscriptions (52.8%) followed by Three Group (37.4%), Eir (9.7%) and OAOs (0.06%).

Figure 4.6.1 – Market Share – Business and M2M Subscriptions



4.7 Competition in the Mobile Market

Figures 4.7.1 and 4.7.2 outline mobile market shares based on the number of active subscriptions reported by each operator. Figure 4.7.1 includes mobile broadband (MBB) and M2M while figure 4.7.2 excludes mobile broadband and M2M.

Vodafone had the highest market share including and excluding mobile broadband and M2M (39.0% and 35.9%), followed by Three Group (35.8% and 32.7%), Eir (15.6% and 19.1%) and Tesco Mobile (6.5% and 8.3%). OAOs had market shares of 3.2% and 4.1% respectively.

Figure 4.7.1 – Market Share – Number of Subscriptions (inc. MBB and M2M)

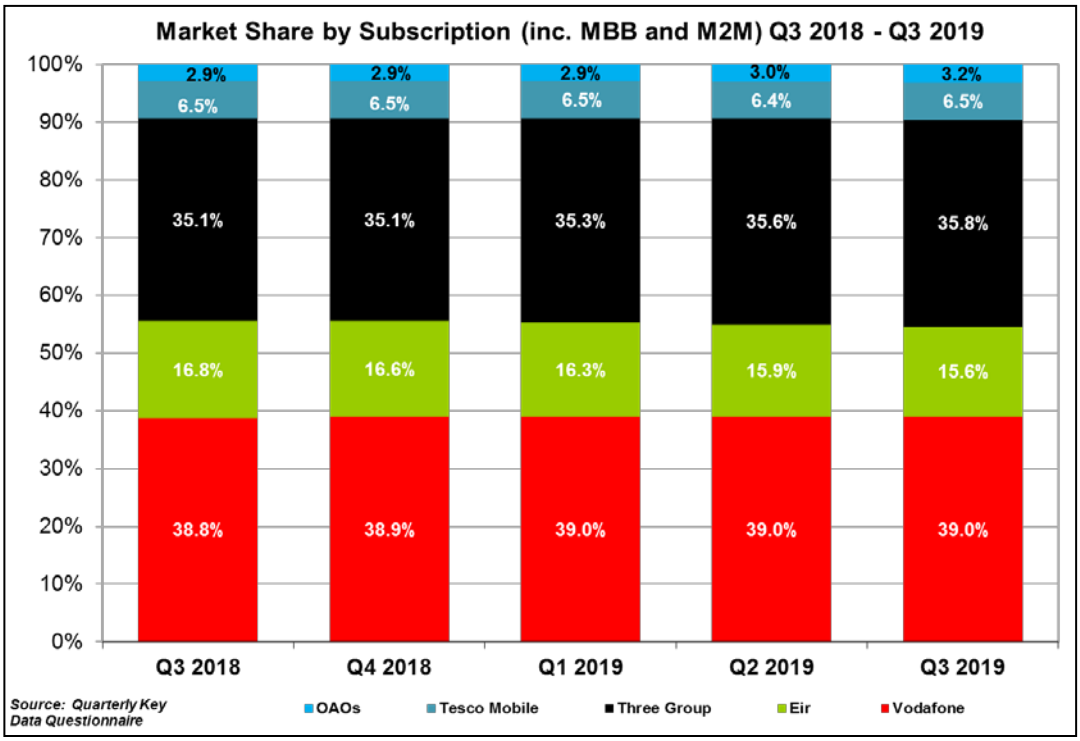


Figure 4.7.2 – Market Share – Number of Subscriptions (exc. MBB and M2M)

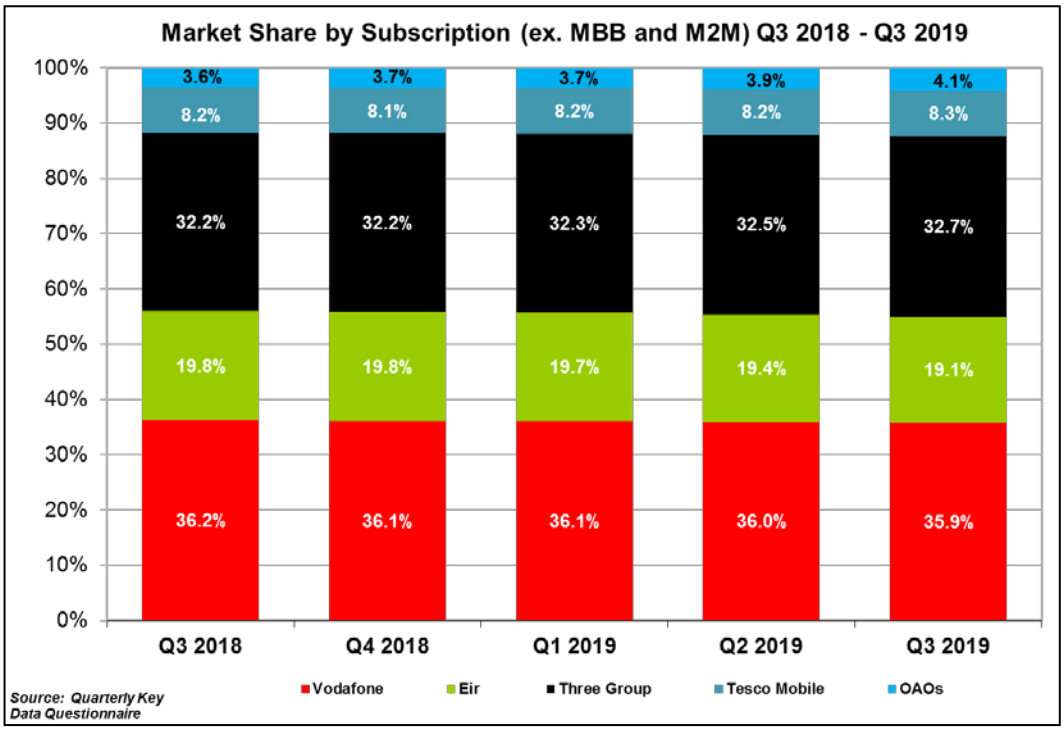
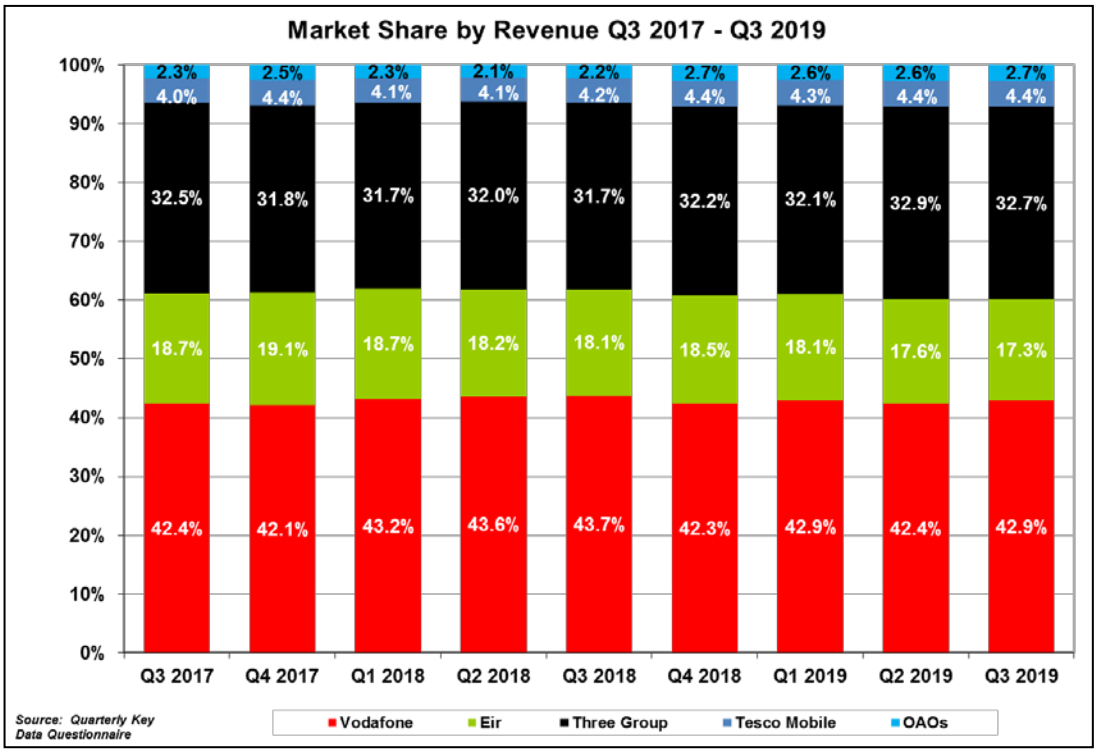


Figure 4.7.3 shows market shares by total retail revenues for mobile operators. Vodafone's market share remains highest at 42.9% followed by Three Group at 32.7%. Eir's market share is the next largest at 17.3% followed by Tesco Mobile and OAOs at 4.4% and 2.7% respectively.

Figure 4.7.3 – Market Share by Revenue

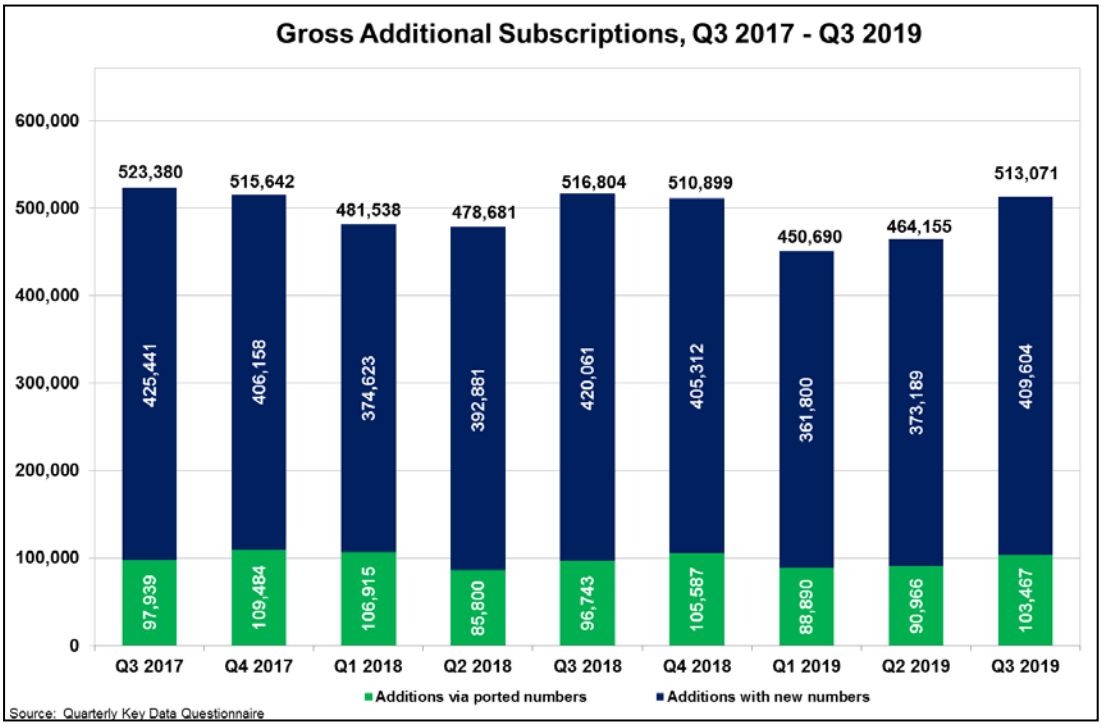


4.8 Switching in the Mobile Market

Figure 4.8.1 illustrates the number of subscribers who port their numbers as a proportion of total gross additions[96]. There were 513,071 gross additional subscriptions in Q3 2019. In Q3 2019, 103,467 numbers were ported between mobile operators with a total of 388,910 numbers having been ported over a twelve month period. Gross additions via ported numbers accounted for 20.2% of total gross additions in Q3 2019.

[96] Gross additions include consumers who avail of multiple SIMs and thus, slightly overstate the switching intensity.

Figure 4.8.1 – Gross Subscription Additions and Numbers Ported



4.9 Mobile Pricing Data

ComReg uses independently collated Strategy Analytics (Teligen) pricing data using OECD-approved methodologies to examine the relative prices of a number of specific mobile phone usage baskets of national and international telecoms services for both residential and business users. The pricing data used for international comparisons includes pricing information for selected countries, namely Germany, Denmark, Spain, Netherlands and the United Kingdom[97].

For national comparisons, the prices advertised by the largest operators (in terms of the number of subscribers to mobile voice services) during Q3 2019 were analysed[98] for selected usage baskets. In this QKDR prices advertised by Three, Vodafone, Eir, Tesco, Lycamobile, Virgin Media and 48 were analysed. Thus, the analysis does not necessarily present the cheapest tariffs available in the whole market, but rather the lowest cost tariffs offered by the largest operators.

For international comparisons, the prices advertised by largest operators (in terms of the number of subscribers to mobile voice services) in each of the respective countries during Q3 2019 were analysed[99] for selected OECD mobile phone usage baskets (with

[97] In future QKDRs ComReg may expand the analysis and include more countries for price comparisons.

[98] The subscribers of these operators jointly account for over 99% of all mobile voice subscribers. 4G tariffs were included in the analysis.

[99] The subscribers of these operators jointly account for over 80% of all mobile voice subscribers in each of the respective countries.

an average per country price presented based on the average of lowest price tariffs advertised by three highest ranking operators in national pricing comparisons) [100].

In order to enable international comparisons, prices are presented in Euro Purchasing Power Parities (PPPs) and exclude VAT charges. PPPs provide an indication of the cost of telecoms services in countries analysed in relation to the cost of all other products and services. The presented analysis incorporates discounts offered by operators. Nonrecurring charges (e.g. charges for the activation of a service) are discounted/amortised over three years. Calls to mobile (on-net and off-net) and fixed phones are included in the baskets[101]. Further information on the composition of the broadband basket can be found in the Explanatory Memorandum which accompanies this report.

The following baskets are presented in this report[102]:

Residential and business mobile phone usage baskets

Type of basket	Basket
Prepaid Residential	100 calls (188 minutes), 20 SMS, 2GB data
Postpaid Residential	300 calls (577 minutes), 40 SMS and 5GB data
Business	900 calls (1,795 minutes), 40 SMS and 2GB data

These baskets were selected given they most closely related to the mobile voice usage patterns presented in figures 4.3.4 and 4.3.5 above. ComReg notes that these baskets reflect usage patterns of an average user and do not necessarily reflect prices of tariffs that are geared towards customers having different usage profiles.

ComReg notes that comparisons are based on the prices of advertised tariffs only and the analysis does not take into consideration other important factors such as quality of the network, levels of customer care, additional units of consumption available after having accounted in the analysis for the units in the OECD usage basket, minimum contract term etc.

[100] The same basket was applied to each respective country in order to make the international comparison.

[101] For the Q1 2018 QKDR the OECD price baskets were reviewed and revised in line with the 2017 OECD methodology. This methodology was retrospectively applied to the period Q4 2017. The criteria for the 2017 OECD methodology differs from the previous 2010 methodology and is therefore not strictly comparable.

[102] In the future QKDRs ComReg may expand the analysis based on additional and/or different usage baskets.

OECD Pre-Paid Residential Mobile Basket[103]

Figure 4.9.1 compares pre-paid tariffs advertised by mobile phone services providers for residential customers based on a basket of 100 calls (188 minutes), 20 SMS and 2GB data usage. '48' (€10.00) offers the cheapest tariff for this particular OECD basket, followed by Lycamobile (€13.99) and Tesco at €15.00.

Figure 4.9.1 – Residential Pre-paid Mobile Phone Services Basket (National)

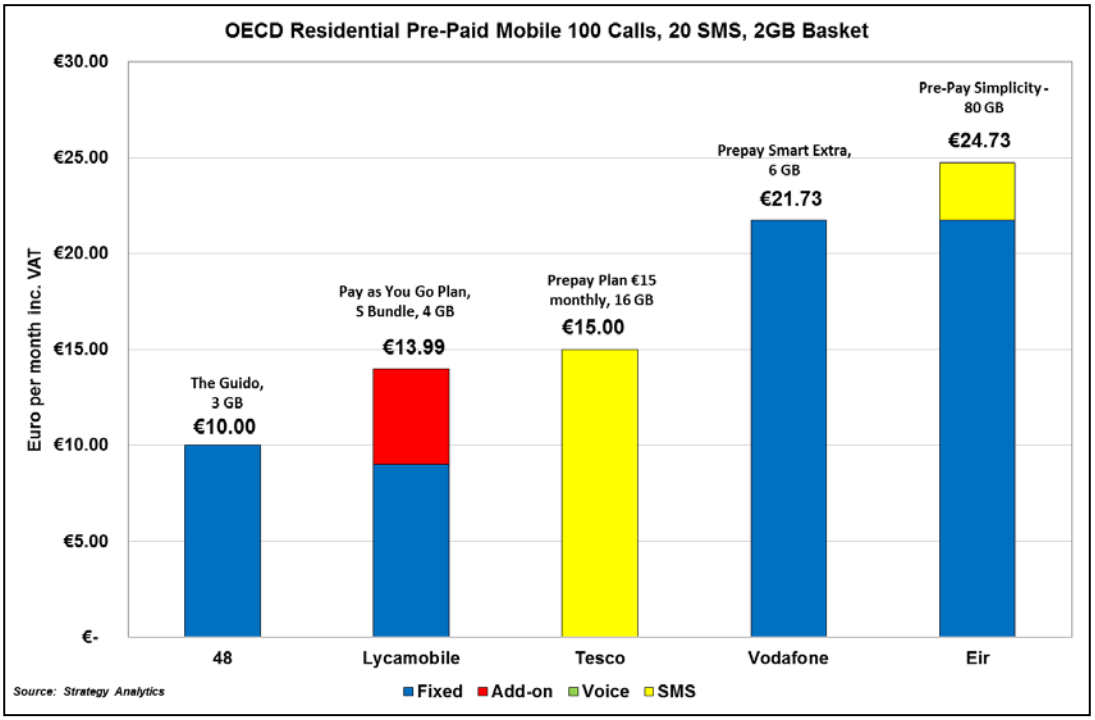


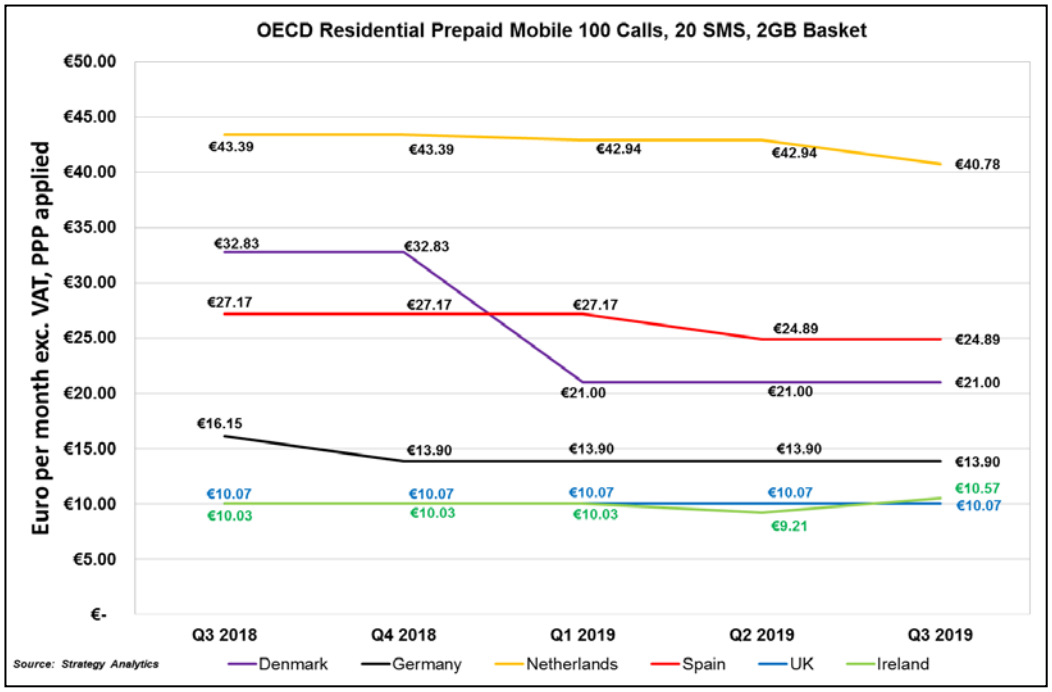
Figure 4.9.2 illustrates Ireland's ranking alongside five other Western European countries. Ireland ranks in second place with an average price of €10.57[104] for this particular basket. The average price in Ireland is 47.7% cheaper than the average price[105] for all of the countries included in the analysis.

[103] ComReg notes that for pre-paid tariffs requiring periodic mandatory top ups (e.g. mandatory monthly (30 day) top ups), the full cost of the top up would be taken into consideration when estimating the total cost of these tariffs.

[104] As noted previously, average prices used for international comparisons exclude VAT charges.

[105] The average of prices presented in Figure 4.9.2.

Figure 4.9.2 – Residential Pre-paid Mobile Phone Services Basket (Int'l)



OECD Post-Paid Residential Mobile Basket

Figure 4.9.3 compares post-paid tariffs advertised by mobile phone service providers for residential customers based on a basket of 300 calls (577 minutes), 40 SMS and 5GB data usage. Virgin Media offers the cheapest tariffs for this particular basket at €24.86 followed by Tesco Mobile (€25.00) and Three (€26.67).

Figure 4.9.3 – Residential Post-paid Mobile Phone Services Basket (National)

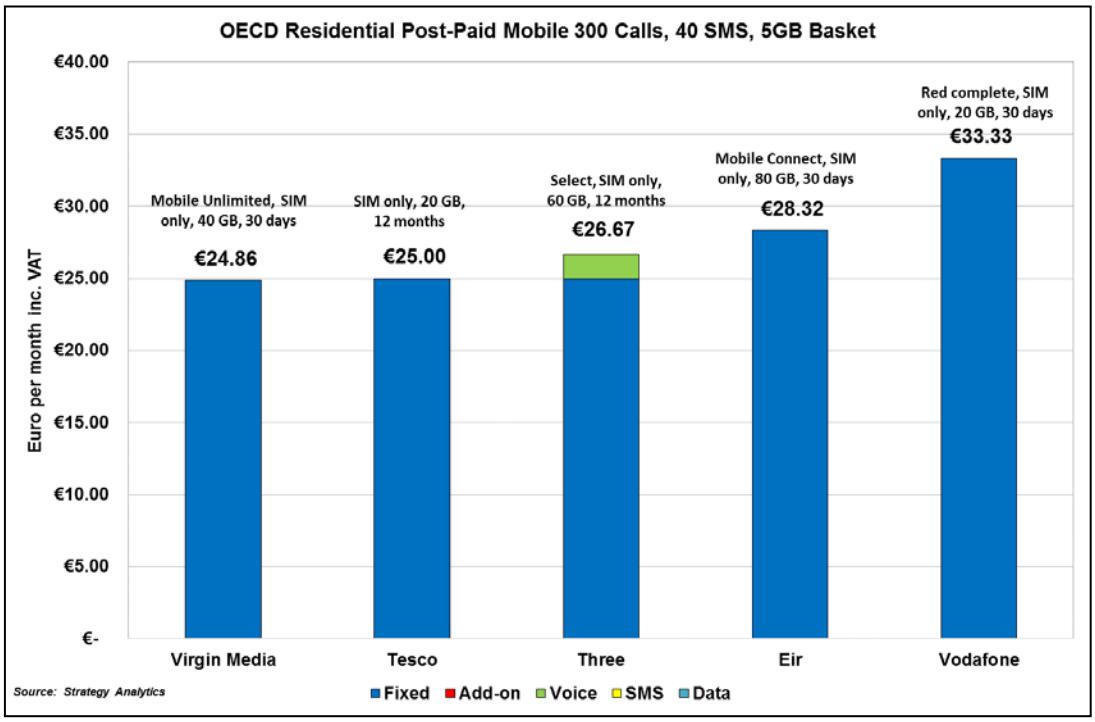
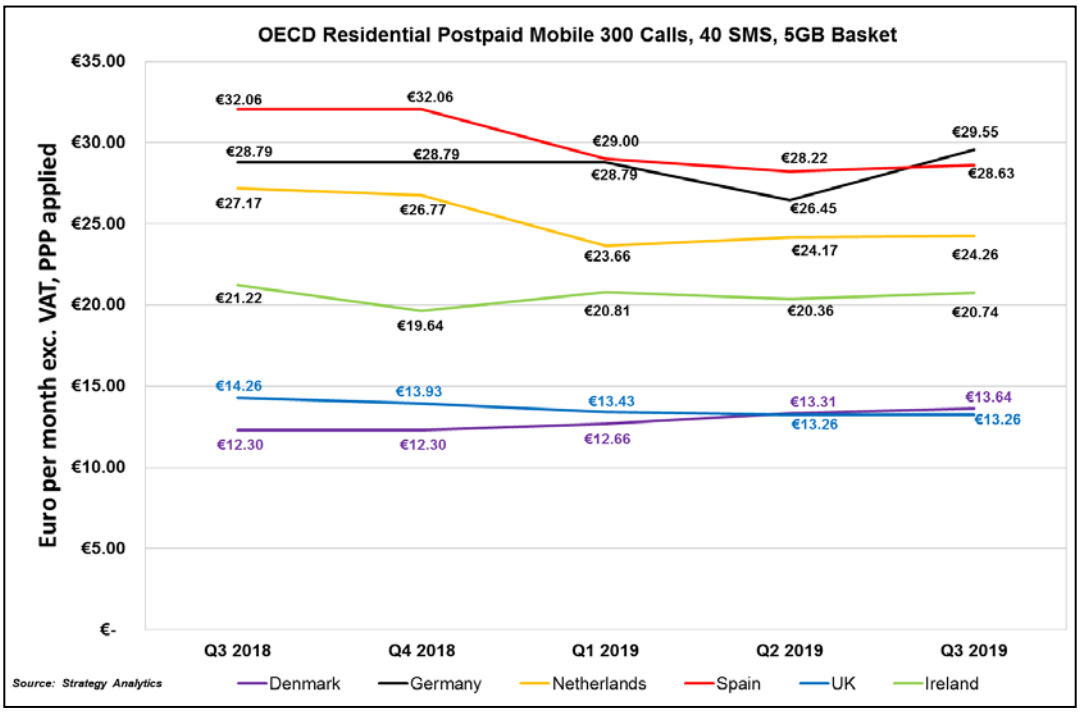


Figure 4.9.4 shows that Ireland (€20.74[106]), in an international comparison context, ranks in third place. The average price in Ireland is 4.3% cheaper than the average price[107] for all of the countries included in the analysis.

Figure 4.9.4 – Residential Post-paid Mobile Phone Services Basket (Int'l)



OECD Post-Paid Business Mobile Basket

Figure 4.9.5 compares post-paid tariffs advertised by mobile phone service providers[108] for business customers based on an OECD basket of 900 calls (1,795 minutes), 40 SMS and 2 GB data usage. Presented prices exclude VAT charges. Eir offers the cheapest tariff for this particular basket at €24.99, followed by Three (€25.00) and Vodafone (€27.11).

[106] As noted previously, average prices used for international comparisons exclude VAT charges.

[107] The average of prices presented in Figure 4.9.4.

[108] Only tariffs advertised by Eir, Vodafone and Three were analysed for business customers. Some operators do not offer services to business customers.

Figure 4.9.5 – Business Post-paid Mobile Phone Services Basket (National)

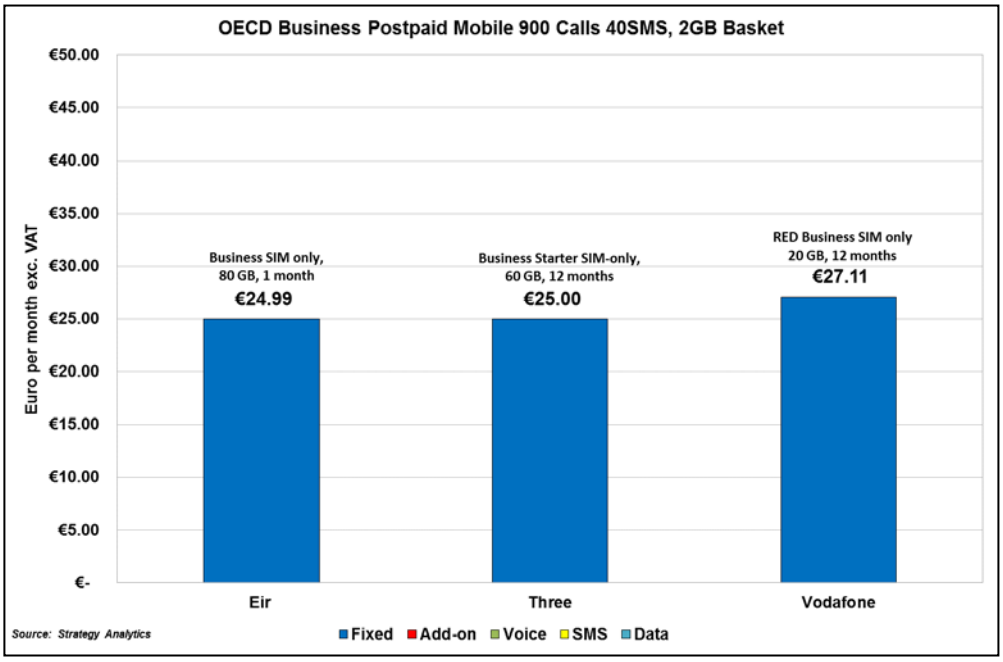
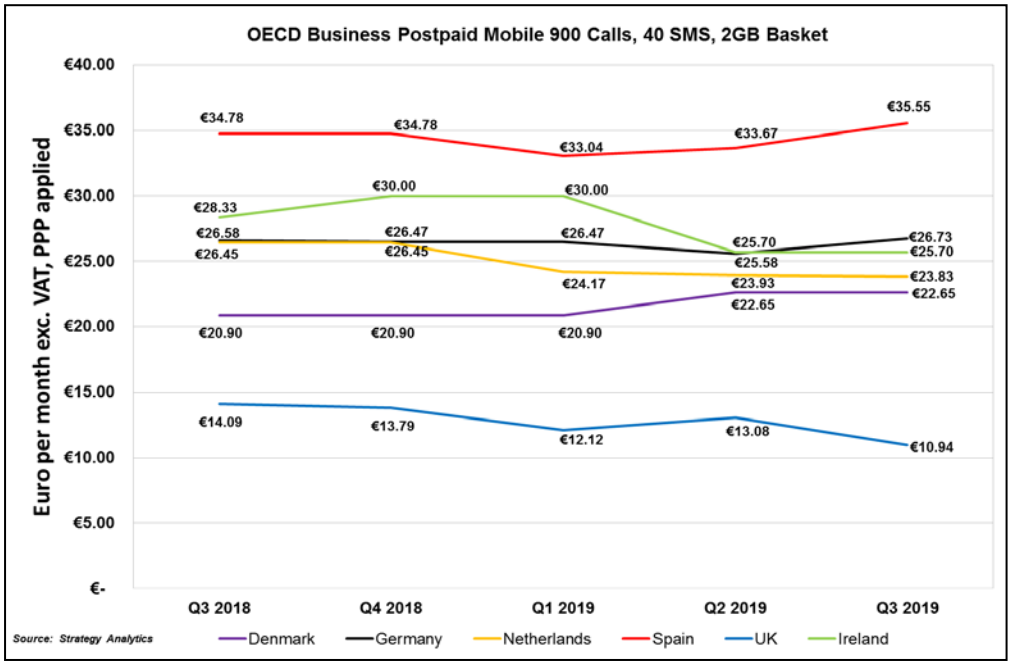


Figure 4.9.6 illustrates Ireland's ranking alongside five other Western European countries. Ireland ranks in fourth place with an average price of €25.70[109] for this particular basket. The average price in Ireland is 6.0% more expensive than the average price[110] for all of the countries included in the analysis.

Figure 4.9.6 – Business Post-paid Mobile Phone Services Basket (Int'l)



[109] As noted previously, average prices used for international comparisons exclude VAT charges.

[110] The average of prices presented in Figure 4.9.6.

5. Broadcasting

5.1 Overall Broadcasting Market

This broadcasting data is sourced from the Nielsen TV Audience Measurement (TAM) Establishment Survey.[111] The Survey indicated that there were 1,663,000 TV homes in Ireland in July 2019. Figure 5.1.1 shows the estimated number of TV homes by reception type in July 2019 and January 2019 on the basis of the reception method through which the highest number of TV channels is received[112]. Irish terrestrial DTT-only homes represented 11.2% of all TV homes (although 39.6% of TV homes receive Irish DTT) as of July 2019. Cable, satellite as well as IPTV platforms represented the remaining 88.8% of all TV homes in Ireland.

Figure 5.1.1 – TV Homes by Reception Type[113]

Reception	July 2019 (000s)	January 2019 (000s)	July 2019 as % of Total TV Homes	% Change Jan. 2019 – July 2019
Irish Terrestrial	186	190	11.2%	-2.1%
Multi Total	1,477	1,463	88.8%	+1.0%
Cable/Satellite	1,383	1,374	83.2%	+0.7%
IPTV	94	89	5.4%	+5.6%
Total TV Homes	1,663	1,653	N/A	+0.6%
RECEPTION: Reception type categories are hierarchically defined and mutually exclusive. A home is classified once within reception type and this is based upon the highest form of reception available within the home.				
Multi Total: Made up of UK DTT / FTA Satellite, IPTV, Cable, and Sky homes.				
Irish Terrestrial refers to homes which only receive the TV channels RTÉ 1 and 2, TG4, Virgin Media 1, 2 and 3 via an aerial and a set-top box or an aerial and an integrated digital TV or via Saorsat.				
Cable/Satellite: Includes UK DTT / FTA Satellite, Cable and Sky homes. Since 2017 Sky homes is based on active Sky subscriptions (rather than on possession of a Sky box).				

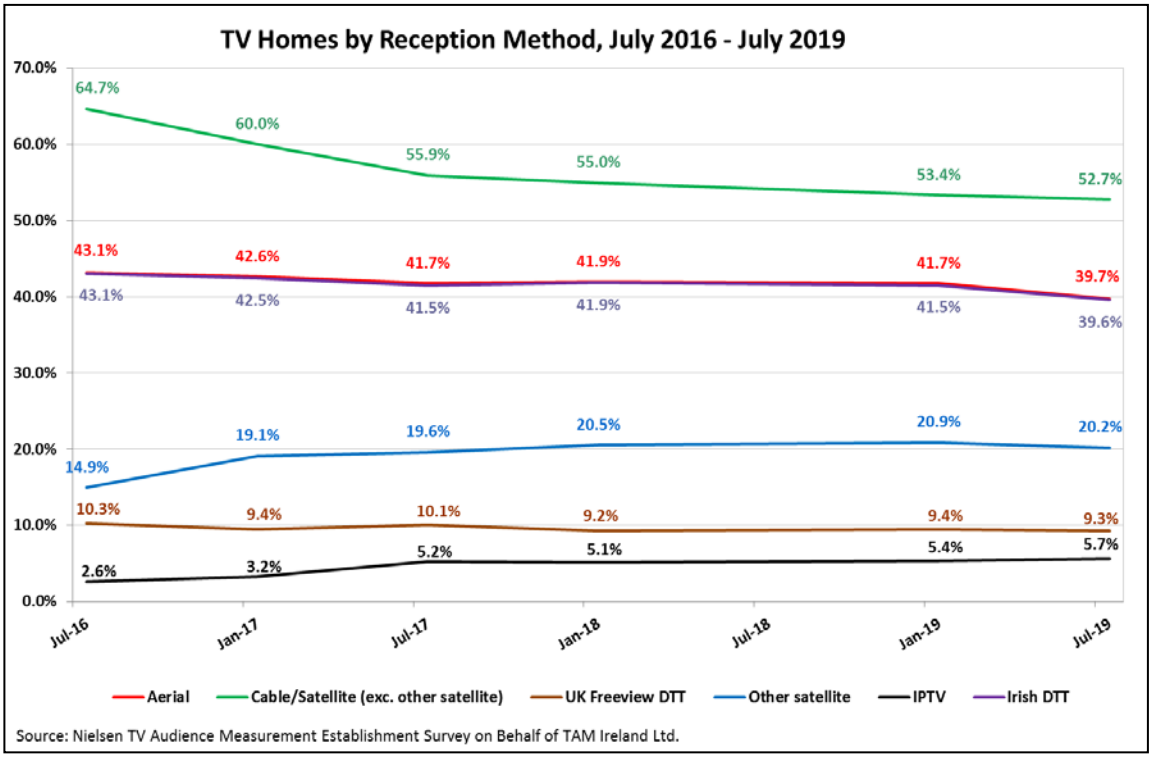
[111] The Establishment Survey is a survey produced by Nielsen TV Audience Measurement (fieldwork is carried out by Behaviours and Attitudes) on behalf of Television Audience Measurement Ireland Ltd (a TV ratings body). The Establishment Survey covers areas such as ownership of TV related equipment, method of TV reception and demographics of TV household individuals such as age etc.

[112] Note, data for July 2018 is not available, therefore January 2019 is used as a comparison.

[113] Source: Nielsen TV Audience Measurement Establishment Survey on behalf of TAM Ireland.

Figure 5.1.2 shows TV homes by reception method[114] from July 2016 to July 2019. The percentage of cable/satellite TV homes (this does not include other satellite i.e. respondents who said 'don't know' and satellites that receive foreign language stations including freesat) has declined from 64.7% to 52.7% over the last three years.[115] Television homes that receive other satellite services (i.e. on a non-subscription basis) beside Sky represented 20.2% of TV homes in July 2019. Reception by IPTV method is relatively low (5.7% of TV homes). Approximately 39.6% of TV homes have Irish DTT.

Figure 5.1.2 – TV Homes by Reception Method[116]



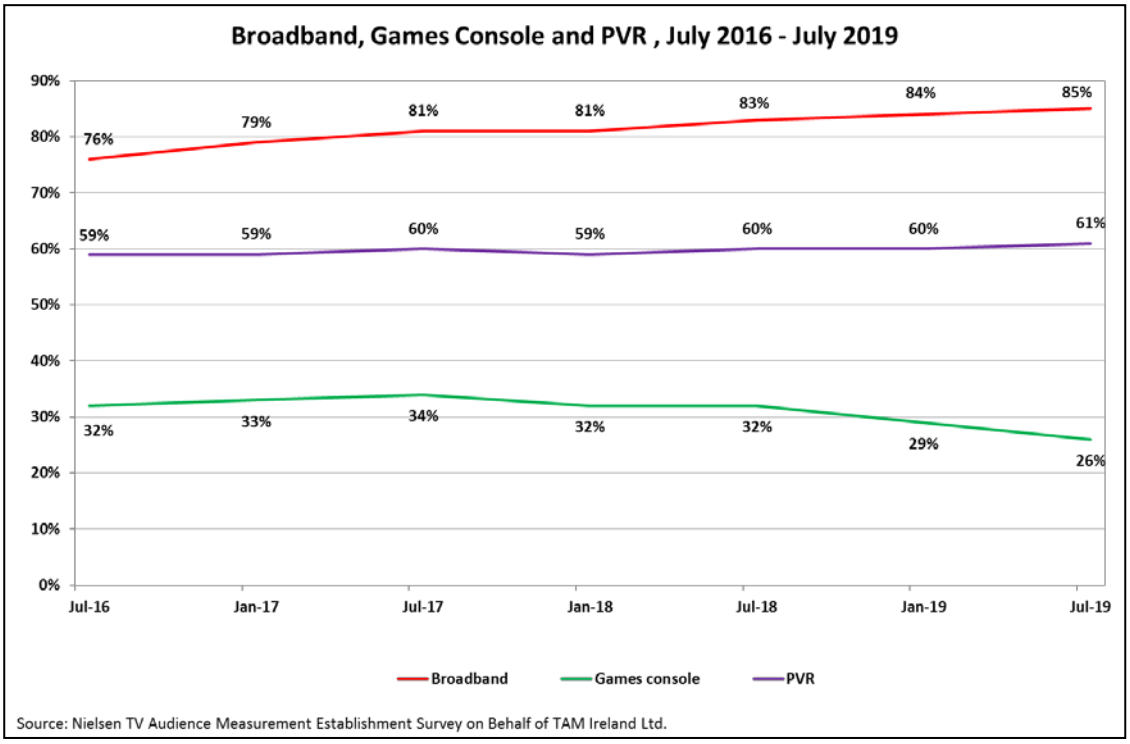
[114] This is determined by the method by which homes with a TV receive their channels. Each home can have more than one method of reception e.g. aerial and cable or digital satellite, digital satellite and cable, etc. The question is asked for their main and up to 9 TV sets. For this reason, the total for the reception methods adds up to more than 100%.

[115] It should be noted that from December 2011 the reporting of the cable/satellite figure has changed. This is because up to December 2011 cable/satellite reception method included homes that had both cable and satellite twice (i.e. (1) cable, (1) satellite). Nielsen now publish homes with cable and satellite as one reception method - as cable or satellite (i.e. cable or satellite (1)). IPTV is not included in the category.

[116] As of November 2012 'Aerial' includes Saorsat homes. Irish DTT includes Saorsat. Cable/satellite includes IPTV, excludes UK DTT, Irish DTT and Saorsat.

Figure 5.1.4 shows TV homes by broadband [117] access, game console and PVR [118] ownership between July 2016 and July 2019. Broadband access was present in circa 85% of homes with a television in July 2019. The number of homes with games consoles has changed over the last three years from 32% in July 2016 to 26% in July 2019. PVR ownership was 59% to 61% over the same period.

Figure 5.1.4 – Broadband, Games Console and PVR Trends

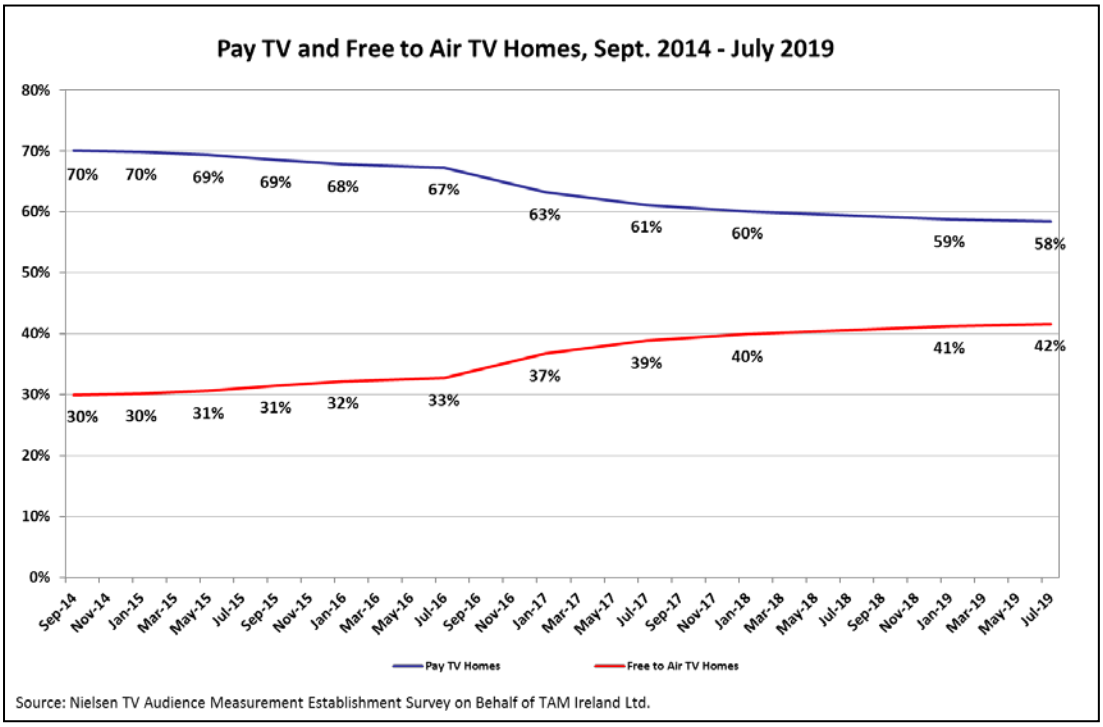


[117] Both fixed and mobile broadband.

[118] A PVR is an electronic device used to record media digitally. The PVR is also known as a digital video recorder or DVR. A PVR records and plays back television programmes, but, unlike the VCR, it stores the programs in digital rather than analogue format, for example, SKY+Box, or Virgin Media Digital Video Recorder.

Figure 5.1.5 shows the level of household penetration of pay TV services and free to air TV services in Ireland based on reception method. This chart has been derived by ComReg using Nielsen data and is not a classification used by Nielsen or a classification used as part of the survey itself. Homes with a pay TV (cable, satellite and IPTV homes)[119] service were generally stable from September 2014 to July 2016. However, we have seen a decrease since with the figure at 58% in July 2019.

Figure 5.1.5 – Pay TV vs Free to Air TV Homes, 2014 - 2019



[119] IPTV is included from December 2011.

The following table lists Respondents who submitted data which was used to produce the Q3 2019 Quarterly Key Data Report.

Table A1: List of Respondents

Respondent Name (N=45)
AirSpeed Telecom
AT&T Global Network Services Ireland Limited
Blueface Limited
BT Communications Ireland Limited
CenturyLink Communications Ireland
Colt Technology Services Limited
Crossan CableComm Limited
Digitalforge
Digiweb Limited
Edge Telecommunications Limited
Eircom Limited
E-Net
Equant operations in Ireland (EGN BV and ENS Limited)
ESB Telecoms
EU Networks Ireland Private Fiber Limited
BigBlu Broadband Ireland Limited
Fastcom Broadband Limited
Fulnett Limited t/a Strencom
Goldfish Telecom Limited
Hibernia Atlantic Cable Systems Limited
Host Ireland Business Broadband
IFA Telecom
Imagine Group
Intellicom Ireland Limited
Ivertec Limited
Lycamobile Ireland Limited
Magnet Networks Limited
Modeva Networks
Nova Networks Limited
Permanet Limited
Postmobile
Pure Telecom Limited
Rapid Broadband Limited
Ripplecom Limited
Siro Limited
Sky Ireland Limited
SprintLink Ireland Limited
Tesco Mobile Ireland Limited
Three Ireland (Hutchison) Limited
Transaction Network Services (Ireland) Limited
Verizon Ireland Limited
Virgin Media Business Limited
Virgin Media Ireland Limited
Vodafone Ireland Limited
Welltel (Ireland) Limited