

RLAH risk assessment

A whitepaper on the key risks to European operator margins

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Executive summary

RLAH will see the end of premiums for roaming across the whole Eurozone and will create a much more competitive landscape for mobile services.

European mobile operators will need to be fully compliant with the new EU roaming regulations by 15th June 2017.

This new regulation, now commonly referred to by the industry as 'Roam Like At Home' (or RLAH), will finally see the end of premiums for roaming across the whole Eurozone and will create a much more competitive landscape for mobile services across the region. From this point forwards customers will be able to use their domestic usage quotas (for data, voice and SMS) when roaming across Europe.

Impact Summary



The impact to operator revenues and margins, both domestic and roaming, is significant, with an immediate drop of c50-60% of EU roaming revenues estimated across the region¹. Beyond this operators are preparing for a major change in customer attitude, and therefore behaviour in relation to use of mobiles whilst roaming. This presents an unknown in relation to future service costs and overall profitability of (EU) roaming as a service. These commercial challenges are compounded by an underlying technology landscape which is complex, costly and somewhat prone to error, plus a clear opportunity for competitive exploitation and arbitrage/fraud.

¹ Based on discussions with several mobile operators across the region, and an assumed 90% drop in EU data revenues, and a c40% drop in EU voice revenues.

This paper outlines the legislation in detail and the key ‘margin assurance’ risks in relation to the implementation of the regulation and the in-life management of roaming services in this new regulatory context.

The main headlines of our research into the holistic impacts of the RLAH regulations are as follows:



Revenues and margins

RLAH presents a significant threat to both domestic and roaming revenues and margins, and due to a combination of its inherent complexity and the uncertain nature of its impact in terms of customer behaviour and market dynamics, should be monitored closely by all affected operators (MNOs and MVNOs).



Change management

From a change management point of view, the various internal change projects should be treated as high priority and subject to stringent risk management methods (i.e. tested thoroughly, clear acceptance criteria agreed, mitigation plans prepared, ‘early-life’ usage monitored closely, etc.)



Business as usual

From a business as usual perspective, it will be vital for operators to be able to monitor the precise impact of the regulation on (data, voice and SMS) service revenues at a granular (roaming partner) level to be able to validate (and optimise) business rules and policies in relation to the overall terms of the ‘compliant’ retail roaming offerings, fair usage management and to be able to quickly and effectively manage abuse and fraud risk.



Regulatory and sector context

Roaming regulation in Europe

For the last 10 years, the European Commission has been working to reduce the roaming charges that telecom operators apply to their customers each time they go abroad either for leisure or business. In 2007, the European Union issued a set of directives to safeguard against roaming related bill shocks, introduce caps on roaming prices and impose certain information obligations on operators to ensure that mobile subscribers pay affordable and transparent roaming prices when abroad. Following an extensive period of negotiations with governments and mobile operators, the EU Parliament voted in October 2015 to end mobile roaming charges in the EU from 15 June 2017.

As of 15 June 2017 every existing or new contract that includes roaming services will, by default, become a Roam Like At Home (RLAH) contract. The minutes, SMS and gigabytes of data consumed abroad in the EU countries will be charged or deducted from the domestic tariff plans (as long as usage is deemed 'normal'². If usage is deemed abnormal operators can apply a charge to the roaming consumption capped at 3.2 cents per minute of voice call and 1 cent per SMS.

For data, the maximum surcharge will be the wholesale roaming caps of €7.7 per GB (as of 15 June 2017), falling to €6 per GB (as of 1 January 2018), €4.5 per GB (as of 1 January 2019), €3.5 per GB (as of 1 January 2020), €3 per GB (as of 1 January 2021) and €2.5 per GB (as of 1 January 2022). Appendix 1 summarizes the regulated retail and wholesale tariffs.

Under the new RLAH regulation MNOs and MVNOs are not obliged to offer roaming with all tariffs however, if they do, they must use regulated wholesale prices (as described above) as the basis for charging all customers.

Operators are entitled to propose alternative roaming tariffs, but the default caps apply unless the customer explicitly accept such an alternative. Operators must contact their customers ahead of 15 June 2017 and ask if they want to keep a specific roaming tariff. Some mobile operators have come ahead of the roaming charges and already opted to offer inclusive roaming in many tariffs which enables the use of user's home allowance in several countries in Europe and outside Europe.



² 'Normal usage' is up to a pre-defined fair usage limit (which differs between PAYG and PAYM customers) and up to 40 consecutive days of usage roaming overseas.

Market forecast

MNOs will see a decrease in their roaming margins and an increase in roaming usage

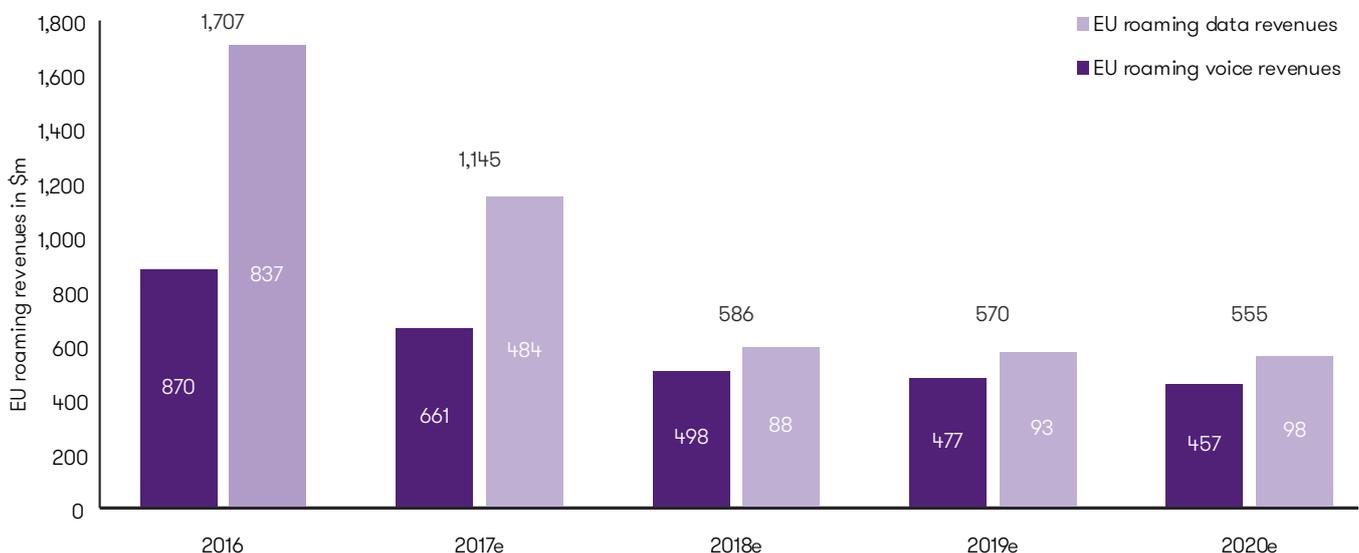
Roaming services are currently considered a high margin product for MNOs. For European operators roaming services account for an average of 2.4% of operators service revenues. The implementation of the EU roaming regulation will have two direct impacts in the short term: A decrease in the average roaming spend per user and margins related with roaming services and an increase in the roaming usage and the number of active roamers in the EU countries as the price-barrier comes down.

We analysed the impact of the implementation of the RLAH regulation on EU roaming revenues for the period of 2016 to 2020. We expect EU roaming revenues to decline by -24% CAGR for the period of 2016 to 2020. A comparison between the EU roaming revenues from 2016 to 2018 shows a sharp drop of 66%. This drop is particularly high in roaming data revenues where we forecast 89% drop in revenues from 2016 to 2018 and an overall -42% CAGR decline from 2016 to 2020. Roaming voice revenues will also see a decline of 43% from 2016 to 2018 and an overall decline of -15% CAGR from 2016 to 2020. Appendix 2 provides details of our analysis and assumptions.

In our view Operators in Europe will see their roaming revenues being slashed after the implementation of RLAH regulation. Despite this sharp decline we understand that operators with large European footprints such as Vodafone, Deutsche Telekom, Telefonica and Orange appear to be better positioned in comparison with Nordic operators and MVNOs given their ability to avoid wholesale costs by owing assets in destination countries for roaming.

We also analysed the current roaming offers from operators in Germany, Netherlands and the UK. We observed a rising in competition amongst telco operators with disruptive Roam like home offers e.g. the inclusion of non EU countries such as Turkey, Switzerland, Norway and Iceland, RLAH offers applicable before 15 June 2017 and no data limit offers.

On the other hand and in our view, EU operators will have different impacts on their inbound roaming revenues based on their geography - operators in the Nordics will see a higher slash on their inbound roaming revenues as opposed to southern European operators. The inclusion of non EU countries in roaming offers will impact operators differently and established roaming agreements with special wholesale tariffs will be the key to survive.



Operator readiness

What are MNOs and MVNOs doing to be compliant with the new regulation

Our research, and operational experience, suggests that most operators (and MVNOs) across Europe are treating this major change in regulation and its internal implications very seriously indeed. This has involved lengthy dialogue and extensive lobbying with both local regulators and EU regulatory policy makers (in some case back to 2010).

The inevitable decline in roaming revenues and the need to 'rebalance Telco margins' has long been messaged through quarterly results and in the overall outlook for most mobile operators in the region, and in the sector as a whole.

In many circles the decline in roaming revenue and margins, has been part of the debates about the need for more innovation in the sector and the overall role of the Telco in a new digital age.

However in the more immediate context the RLAH presents an undeniable risk in relation to both domestic and roaming margins.

From a technology point of view billing and charging systems and fair usage management systems will be at the centre of the IT change programme, and will have needed a considerable allocation of CAPEX not just in 2017, but in prior years too.

From a customer experience point of view operators will have been carefully considering and developing customer journeys and communications plans to ensure that RLAH related pricing and specific operator policies are clear and consistently applied.

From a revenue assurance perspective all new tariffs will be subject to extensive RA testing (using test call generators, manual simulation) and close monitoring of RA KPIs.

And from a commercial perspective finance teams will have been attempting to model the financial impact both to the top line revenue, but more critically to the bottom line from an expected change in customer behaviour in relation to the use of (data) roaming services.



RLAH risk assessment

Key threats and 'typical' FNO exposure

Our research, as requested, has focused on the key margin assurance risks that present the greatest threats to operators roaming margins across the group.

The below table summarises the main threats we have identified and the supporting commentary outlines the key considerations for each threat.

Specific margin threats/risks from RLAH	Threat category	Probability ³	Impact ⁴	Ease to mitigate
1. Change management failure (billing/charging/decrementation)	Revenue & cost leakage	High	Low	Medium
2. Silent roamers/change in customer behaviour	Margin impact (cost inflation)	High	High	Hard
3. Weak/no management of data fair usage	Margin impact (revenue leakage and cost inflation)	High	Medium	Medium
4. Commercial exploitation of new charging structure	Margin impact (base erosion and cost inflation)	Low	Medium	Hard
5. MNVO compliance/exploitation of new regulation	Margin impact (base erosion and cost inflation)	Low	Low	Hard
6. Exploitation of permanent roamer rules	Margin impact (cost inflation)	Medium	Low	Hard
7. Voice and SMS price arbitrage	Fraud (cost inflation)	Medium	Low	Medium (but typically well established)
8. Up sale of other roaming products/broadening of RLAH product	Margin impact (cost inflation)	Low	Low	Limited
9. Enhanced PAYM Churn risk/retention requirement	Margin impact (base erosion and cost inflation)	Medium	Medium	Limited
10. Non-compliance risk (regulatory penalties/ fines and brand risk)	Margin (cost)	Low	High	Easy

³ For our assessment of probability and ease of mitigation we have assumed a typical (mature operator) with established and effective risk management, change management and revenue assurance capability.

⁴ For our assessment of impact we have considered the primary financial consequence only, and used a scale as follows:

- Low impact less than €0.5M;
- Medium impact from €0.5M to €1M; and
- High impact greater than €1M (impact to 2017 EBITDA)

Key threats and risks



1. Change management failure

Implementation of RLAH will involve wide ranging and complex system changes, and like any other major billing change programme will be exposed to a variety of specific change related risks. We would anticipate that the most pressing areas of risk would be in relation to pricing reference data, FUP platform configuration, and 3rd party data sources. Some of the existing (and accepted) vulnerabilities in relation to roaming change management might also be areas of concern, such as FNO IP data configuration and FNO xDR generation (for example).

We would expect most operators will adopt a robust and thorough approach to managing this change, and will carry out extension customer experience, service acceptance and RA testing, although we would highlight that testing of roaming services is often limited to a sample number of FNOs (due to cost restrictions).

We would suggest that most change related failure will be visible to operators quite quickly (i.e. during early life acceptance) and will mostly be able to mitigated quickly and easily (with patches and fixes).

It is also worth noting that as many operators already offer 'free' European roaming products⁵, the level of change (to be fully compliant) will for some only be incremental, and therefore present a lower level of risk (compared to those that are moving from legacy to free on 15th June).



2. Silent roamers/change in customer behaviour

Operators will have attempted to model the change in customer behaviour as a result of RLAH (to understand the increase in data volumes and costs), and the speed at which this change will come in to effect.

Our insight is that most operators are using a combination of current roaming and domestic (data) usage patterns as the basis for future customer behaviour. There is an argument that for certain segments of consumer roamers (in particularly the 'holiday maker') there is a significant risk that the change in behaviour will have been understated. It is certainly possible that the silent roamer effect (roamers who have only ever used wifi when roaming) will have been under-estimated.

This change in behaviour will only become apparent with time, and it might take up to 12months for new normal behaviours to become established. The timing of this change is particularly interesting, being at the start of the European summer holiday season, and we would suggest that many operators are delaying communicating the new roaming rules until the last minute to try and 'control' the level of margin impact to 2017 budgets.

We can only see limited tactical options for mitigating the level of customer behaviour change i.e. promoting the use of wifi, offering alternative OTT products, and restricting download speeds (in relation to the most data hungry services (i.e. streaming HD TV), but this insight will be critical in establishing profitable domestic data plans for operators.

⁵ Examples of this include 3 and Vodafone in the UK



3. Weak/No management of data Fair Usage

The policy guidance for setting specific data fair usage limits for RLAH is clearly complex both for operators to implement and for customers to understand. As the fair usage limit is derived from a combination of the customer's domestic airtime tariffs and the regulated wholesale roaming rates both of which will change overtime, there is a significant risk, in our opinion, that these limits will be incorrectly set causing either customer bill-shock and/or poor service experience. This risk is incremental to the existing vulnerability in relation to overall fair usage management, where we note processes and capability (for many operators) continue to be weak, causing many general customer issues in relation to allowance management and usage notification.

We understand that some operators are not planning on implementing specific RLAH FUP controls for roaming data at all⁶, and are instead proposing to rely on domestic allowance limits and existing proven domestic exception reports. We assume that this is in the main a commercially driven decision, but assumes that the level of excessive usage has been modelled, quantified and is commercially acceptable. This will need on-going focus (and robust BI reporting) to be sure that the operator's policy remains appropriate and commercially viable.



4. Commercial exploitation of new charging structures

The new RLAH regulation will have a fundamental impact on the overall roaming market place across Europe, as is the intention of the EU regulation. There is however a considerable risk that there will be consequential impacts on both domestic pricing (i.e. the 'waterbed effect') and broader impacts in relation to cross-border pricing exploitation. Analysts might argue that some of these impacts are the result of natural market place balancing, and might see the innovative services that might emerge here as good for consumers and healthy for the industry. However there are certainly some specific scenarios that operators should be mindful of, and should consider options to measure the extent of these specific risks. We would also argue that in many cases these new services would be in breach of the new regulation, but would appear to be hard to prove and mitigate.

The main areas of concern that we can foresee relate to the use of unified SIMs/global SIM products and/or the use of SIM servers and SIM boxes which would offer customers the option to 'hop around' and exploit cheap domestic bundles across Europe.

We would suggest that mobile operators should consider some competitive intelligence research to ensure they are clear who and how these disruptive services are developing (post 15th June).

⁶ We understand this is the case for some operators we interviewed.

Key threats and risks



5. MVNO compliance/exploitation of new regulation

We can foresee that MVNOs may form part of the above commercial exploitation threat, indeed they would have a considerable incentive to do so, as RLAH will undeniably have a significant impact on their margins, so would look at options to offset that in some way if they can.

It also appears that the broader MVNO perspective and full impact of the regulation on them has not been fully considered.

We understand, from clients in this space that some MVNOs have been advised that they will be subject to a premium (beyond regulated wholesale roaming rates) from their host networks after 15th June – which we would suggest in due course might indeed be the basis for some legal action.

We also understand that MVNOs themselves have possibly underestimated the impact of the regulation, both from a technical perspective and from a broader commercial perspective.

It is entirely possible that we could see MVNOs withdraw roaming as a service entirely, and I would anticipate that some of the MVNOs who operate with tighter margins (typically where mobile forms part of a wider service offer) might look to withdraw from the market or change their commercial model. Mobile operators might want to consider the bad debt risk associated with local MVNOs defaulting later in 2017/18.



6. Exploitation of permanent roamer rules

The rules in relation to permanent roamers are quite clear, in that as an overall principle the EU accepts that operators should be able to control the risk of roaming products being used by permanent roamers. That said, it seems clear that the provisions made are quite easy for those minded to do so, to bypass.

We would expect the permanent roamers threat to be a relatively low impact issue, but one with a significant overhead in terms of business intelligence, customer experience and possible legal action.

Our understanding is that rules based exception reports highlighting clear patterns of permanent roaming behaviour will form the basis for the core mitigations. However the real challenge will be in the successful enforcement of penalties and charges, which might easily flow through into bad debt and churn KPI erosion.



7. Voice and SMS price arbitrage

Use of SIM boxes and other automated devices to exploit differences in domestic and wholesale pricing structures is an issue well understood by most operators. Dedicated processes and sophisticated systems exist to enable detection and treatment of these devices on networks across Europe.

We anticipate that the RLAH regulation will increase the prevalence of voice and SMS arbitrage, as a result of the regulation effectively allowing this type of 'abuse' to become viable under the cover of roaming. This will bypass some of the current detection strategies (that for example use SMSC features and cell site data as part of the 'fingerprinting' of SIM boxes).

We would expect that most operators have considered this risk at length and will have some additional countermeasures in mind, even if it isn't part of the core discussion around RLAH margin impact (which is mostly focused on data margins).

The impact on voice revenues will likely extend to (non-roaming) international revenues where the new regulation will in certain cases make international calls cheaper when roaming compared to when 'at home'. We would anticipate BI focused on international call volumes (domestic vs roaming) might provide some interesting insights.



8. Up sale of other roaming products/broadening of RLAH offer

For senior commercial stakeholders it is likely that the most important commercial consideration isn't the immediate abuse and margin erosion threats, but relates to the future roaming landscape and the customer's needs in relation to simplicity and value for money.

To that end many operators have 'jumped the gun' and already launched RLAH compliant offerings well before the 15th June deadline. We would propose that this has been driven by an assumed overall positive impact on trading, and a broad brand endorsement of transparency and value.

Some of these 'new' offers include pan-European roaming for 'free' and have included countries like Switzerland, Monaco and Turkey (where the regulation and therefore wholesale roaming prices do not apply). This means operators who are doing so are risking further overall margin erosion from activity in these countries (where costs will not fall, but volumes will likely jump).

We would strongly recommend that where operators have adopted this more generous position, granular reporting (at FNO level) exists to support margin analysis and identification of any exploitation of this component of roaming.

Key threats and risks



9. Enhanced PAYM Churn risk/retention requirement

A general area of concern will be in relation to the overall impact on the PAYM base where depending on the terms of their current operator's domestic and roaming deals⁷ customers might choose to migrate to the most generous deal in the market.

We anticipate a slight increase in PAYM churn for most operators, or an appropriate increase in downgrades and /or retention offers, all contributing to a further impact in overall customer margin.

The churn risk is particularly interesting in the context of products launched pre the June 15th deadline where there is an implicit (or explicit) uplift in domestic airtime pricing to reflect that the product includes 'free' European roaming. In these cases we anticipate that customers might expect a discount to their domestic airtime tariff to reflect the understanding that roaming should now be free (across Europe).



10. Non-compliance risk (regulatory penalties/fines + brand risk)

The final area of concern, that our research has highlighted, is in relation to the risk of non-compliance to the specific rules around customer experience, FUP definition, wholesale pricing and the treatment of permanent roamers.

The legislation provides guidance in relation to how key process should and shouldn't come into enforce, but in some case this guidance could be seen ambiguous⁸.

We would expect that ownership of these operational compliance risks will sit across Customer Experience, Finance and Legal, but we would anticipate that the primary focus for most will be on launch readiness and overall compliance, so would suggest that it is entirely possible that some specific operational processes might not be fully formalised and documented from 'day 1', and therefore represent a risk in terms of compliance.

We would also propose that for some of the more ambiguous aspects of the regulation (i.e. MVNO pricing, permanent roamer treatment etc.) there is a strong chance that legal cases will emerge where customers/partners (or commercial parties looking to exploit the regulation) might take their experience to the EU for consideration.

⁷ We would propose that for domestic pricing the data allowance (and FUP) will be key, for roaming the countries included in scope will be key.

⁸ i.e. in relation to opt in/opt out options for bespoke PAYM Enterprise contracts.

Conclusion

Conclusions

The key conclusions of our research for the Telco Revenue and Margin Assurance community are as follows:

- 1 RLAH presents a significant threat to both domestic and roaming revenues and margins, and due to a combination of its inherent complexity and the uncertain nature of its impact in terms of customer behaviour and market dynamics, should be monitored closely by all affected operators (MNOs and MVNOs).
- 2 From a change management points of view, the various internal change projects should be treated as high priority and subject to stringent risk management methods (i.e. tested thoroughly, clear acceptance criteria agreed, mitigation plans prepared, and early life usage monitored closely etc.)
- 3 From a BAU perspective, it will be vital for operators to be able to monitor the precise impact of the regulation on (data, voice and text) service revenues at a granular (FNO) level to be able to validate (and optimise) business rules and policies in relation to the overall terms of the 'compliant' retail roaming offerings, fair usage management and to be able to quickly and effectively manage abuse and fraud risk.



Appendix 1

Regulated retail and wholesale tariffs

Maximum tariffs (excl. VAT)	Retail prices
1 July 2014	Roaming consumption is not deducted from domestic volume. Pay a maximum of Call mins sent/received €0.19/€0.05 SMS sent €0.06 MB of data €0.20
As of 30 April 2016	Roaming consumption is deducted from the domestic volume, with a charge added Call mins sent/received € 0.05/€ 0.01 SMS sent €0.02 MB of data €0.05
As of 15 June 2017	Roam like at Home. Roaming consumption deducted from the domestic volume Calls & SMS: Home allowance Data: Fair use limit. In certain cases e.g. domestic bundles including unlimited data a surcharge may be applied beyond a certain limit. The maximum surcharge is €7.7/GB + VAT; this will decline gradually to reach €2.5/GB as of 2022. Calculation of the Fair usage limits: Pre-paid tariffs Fair usage limit on data = credit on the pre-paid card (excl. VAT) when started using data roaming/ maximum surcharge (€7.7 for 2017) Post-paid tariffs Unlimited voice, SMS, data Fair usage limit on data = 2 * (data bundle price/maximum surcharge) Unlimited voice, SMS and limited data If unit price of data > €3.85 p/ GB (in 2017 €3.85/GB, 2018 €3/GB, 2019 €2.25/GB) Fair usage limit on data = Home allowance If unit price of data < €3.85 p/ GB (in 2017 €3.85/GB, 2018 €3/GB, 2019 €2.25/GB) Fair usage limit on data = 2 * (data bundle price/maximum surcharge)
Maximum tariffs (excl. VAT)	Wholesale prices
As of 15 June 2017	Maximum regulated wholesale roaming charges Calls mins sent € 0.032 SMS sent € 0.01 Data: €7.7 per GB (as of 15 June 2017), falling to €6 per GB (as of 1 January 2018), €4.5 per GB (as of 1 January 2019), €3.5 per GB (as of 1 January 2020), €3 per GB (as of 1 January 2021) and €2.5 per GB (as of 1 January 2022)

Source: http://europa.eu/rapid/press-release_MEMO-17-885_en.htm

Appendix 2

EU roaming revenues

Figures in million		2016	2017e	2018e	2019e	2020e	CAGR 2016-2020
Mobile Retail Connectivity Revenues in \$m	1	\$ 866,700	\$ 881,993	\$ 899,975	\$ 919,250	\$ 939,937	
Mobile service revenues growth		1.4%	1.8%	2.0%	2.1%	2.3%	
Mobile Voice Revenues in Europe in \$m	1	\$ 79,088	\$ 75,133	\$ 71,695	\$ 68,598	\$ 65,790	-4%
Mobile Data Revenues in Europe in \$m	1	\$ 76,049	\$ 80,080	\$ 84,375	\$ 88,818	\$ 93,401	5%
Mobile Voice Revenues growth in Europe		-5.7%	-5.0%	-4.6%	-4.3%	-4.1%	-8%
Mobile Data Revenues growth in Europe		5.0%	5.3%	5.4%	5.3%	5.2%	1%
Mobile Voice as a % of Retail Connectivity Revenues in Europe		51.0%	48.4%	45.9%	43.6%	41.3%	-5%
Mobile Data as a % of Retail Connectivity Revenues in Europe		49.0%	51.6%	54.1%	56.4%	58.7%	5%
Mobile Voice and Data Revenues in Europe in \$m	2	\$ 155,137	\$ 155,213	\$ 156,070	\$ 157,416	\$ 159,191	
% group revenues from EU roaming	3	1.1%					
Roaming retail revenues hit in EU by RLAH legislation - Voice	4		20.0%	40.0%			
Roaming retail revenues hit in EU by RLAH legislation - Data	4		45.0%	90.0%			
EU roaming revenues in \$m	5	\$ 1,707	\$ 1,146	\$ 586	\$ 569	\$ 555	-24%
EU roaming voice revenues	6	\$ 870	\$ 661	\$ 498	\$ 477	\$ 457	-15%
EU roaming data revenues	7	\$ 837	\$ 484	\$ 88	\$ 93	\$ 98	-42%

Notes

- 1 Ovum Mobile subscriptions and Revenue Forecast
- 2 Estimated based on mobile service revenues growth
- 3 Deutsche Bank Markets research broker note, 15 Dec 2016
- 4 Assumption based on discussions with MNOs
- 5 For FY16 EU roaming revenues estimated as 1.1% of group revenues. From FY17 EU roaming revenues equals to the sum of EU voice and data revenues
- 6 EU roaming voice revenues is a function of an analysis of the impact of the EU RLAH legislation and mobile voice revenues growth in Europe
- 7 EU roaming data revenues is a function of an analysis of the impact of the EU RLAH legislation and mobile data revenues growth in Europe

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