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Agenda

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A Connected Continent? Eliminating excessive roaming charges in the EU

EU policymakers have long been concerned with the cost of international roaming services within the EU, and the European Commission considers that unjustified roaming charges pose a significant barrier to the EU single market. Its Connected Continent package of reforms aims to address this by eliminating such charges within the EU—but are the proposed changes likely to be effective, or will further modifications be needed?

For end-users such as holiday-makers and business travellers, roaming charges may hinder usage or result in a nasty 'bill shock' at the end of the month. The Commission is therefore concerned about the implication of these charges on end-users. It is also concerned that unjustified roaming charges pose a significant barrier to the EU single market, thereby limiting growth, service innovation and choice.[1]

International roaming

Using a mobile service abroad requires access to a mobile network operator (MNO) in the visited country. This requires a wholesale interconnection agreement between the consumer's home MNO and the visited country MNO. Calls (and data) are then routed between the two, and the visited network charges the host network a wholesale inter-operator tariff (IOT).

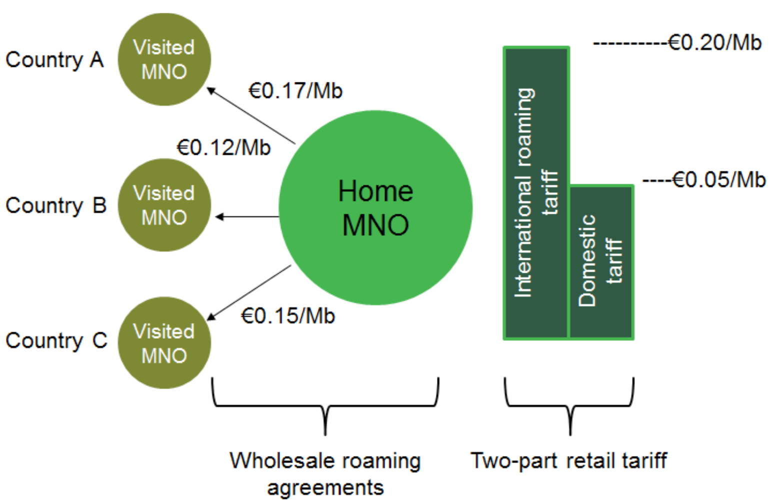
In order for the home MNO to offer services in each country, it must conclude roaming agreements with at least one operator in the visited country. The home MNO may potentially pay different IOTs to operators in different countries if, for instance, local costs vary. In this context, the retail offer of the home MNO can be considered a two-part tariff, with one component covering domestic usage and another part covering usage abroad. Figure 1 shows an illustrative example of these agreements for data services.

The problem

The problem with international roaming is due in part to its status as an add-on service to the basic functionality of communication services. In theory, home MNOs in a given member state compete on the basis of this two-part tariff, as well as other service aspects such as coverage and quality. However, certain features of the market mean that, in practice, there is little incentive for operators to compete on roaming services in the retail market or reduce wholesale charges. These features include the following.

- **Bundled purchases**. Consumers typically purchase roaming within a bundle that also contains domestic calls, texts and data usage. However, there is generally little awareness of roaming charges, and price transparency for calls and texts has been targeted by previous reforms.[2] Consumers are typically unable to choose alternatives at the point of travel. Consequently, once a consumer has chosen a home MNO, that operator has a degree of market power in the provision of international roaming services.

Figure 1 An illustrative example of international roaming



Note: For simplicity, retail tariffs are shown as unit costs. In reality, typical contracts will provide (domestic) consumption within a bundle of minutes, texts and a data (Mb) allowance each month.

Source: Oxera.

- **Relatively inelastic consumption**. Evidence on consumption habits shows that demand for roaming services does not respond to changes in price, especially for voice and text services.[3]

The Commission has been trying to solve these issues in mobile roaming for the last decade. For example, in 2007 it introduced measures to increase transparency in the international calls market, as well as price caps. Similar measures were introduced in the text market in 2009.[4] However, these regulations have arguably had limited success, with retail prices hovering near the price caps.[5] More recently, the popularity of smartphones and tablets, and the increase in data consumption, are beginning to put data roaming charges in the spotlight.

The Connected Continent reform: a potential solution?

The Connected Continent package of reforms is aimed at achieving a single market for communications services in Europe, in order to enhance competition and drive growth. This package includes EU Roaming Regulation III, which imposes a retail remedy for roaming services that will require service providers to either:

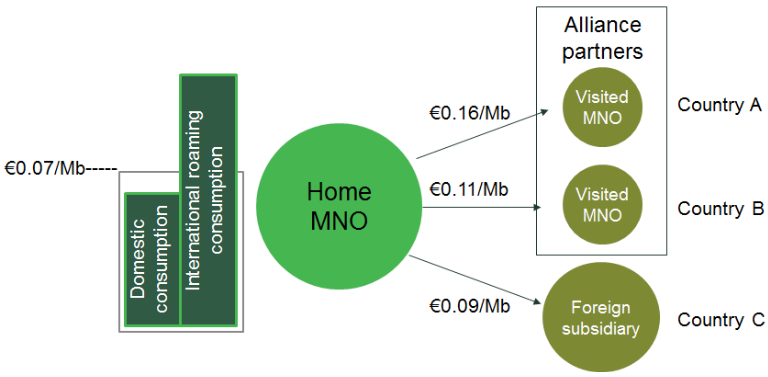
- voluntarily provide **'roam like at home' (RLAH)**—voice, text and data services that are charged at the same rates that the customer would be charged at home; or

- permit **'decoupling'**—allowing end-users to choose an alternate provider for roaming services.

RLAH is a one-part tariff that will cover services across the EU, subject to reasonable use criteria. In the stylised example shown in Figure 2, the RLAH tariff lies between the current retail tariffs for individual domestic and international consumptions.

Furthermore, to internalise different wholesale costs, RLAH will encourage operators to form wholesale roaming alliances—i.e. bilateral or multilateral agreements on IOTs.[6] Multilateral alliances work by negotiating the roaming tariff on the basis of pooled visited traffic from multiple MNOs (or mobile virtual network operators, MVNOs). The home MNO and other alliance partners can offer higher volumes and greater certainty to the visited MNO than it would otherwise have received. As mobile networks are characterised by the presence of large fixed costs, this could improve their bargaining position and result in lower per-unit wholesale prices. For some operators, internalisation of roaming costs is already possible via local subsidiaries in the visited country.[7] The stated rationale behind this is to 'induce the pass-on of such legitimate scale economies to consumers'.[8] It is hoped that pass-on will be achieved by anchoring the retail price for the roaming service to domestic rates.

Figure 2 Roam like at home



Note: Example shows the RLAH tariff as a price rise relative to domestic tariffs. This could be small in magnitude, given that roaming is a small proportion of overall consumption.

Source: Oxera.

The backstop to this regulation is a decoupling obligation. Operators that do not offer RLAH must offer consumers the option of choosing an alternative provider for roaming services.

Decoupling provides the alternative roaming provider with access to the home MNO's network so that it can convey the retail customer's data (and calls) when abroad. The roaming provider will still need to agree wholesale roaming tariffs with MNOs in different member states. The motivation for this approach is that alternative operators could stimulate retail competition in roaming, which could place further competitive pressure on wholesale roaming markets. As a more intrusive measure, the Commission intends for this aspect of the regulation to be less palatable for MNOs relative to the RLAH.[9]

Whether the two remedies can co-exist is questionable. It is reasonable to expect that some operators are already in a position to be able to offer RLAH.[10] For consumers, there is little incentive to choose an alternative roaming provider, unless it can offer a price that is lower than the RLAH tariffs on offer. More generally, an alternative roaming provider's incentive to enter depends on the margin between wholesale and retail roaming tariffs. This is likely to be largest in member states where retail tariffs are comparatively high, but these are likely to be the same countries where MNOs are most likely to offer RLAH in order to protect revenues. It is therefore possible that a roaming provider is left serving the less attractive countries or more price-sensitive consumers. In addition, it will need to recover fixed investments associated with infrastructure, sales and marketing. The Commission's stated aim of eliminating differential roaming charges by 2016 adds a further element of risk for potential entrants.[11]

Overall, as the Commission itself recognises, the decoupling option is unlikely to promote new entry.[12]

What is the impact of the RLAH remedy?

The Commission intends that operators will adjust retail tariffs to equalise domestic and roaming prices. A challenge to this process is the presence of cost differences in the provision of mobile services across the EU. Policymakers recognise this issue, and this is the likely motivation for the promotion of alliances and a transition to RLAH pricing over time. However, the policy could also have some unintended consequences for both operators and consumers.

Impact on mobile operators

The headline aim of the RLAH policy is to 'abolish roaming premiums'. The Commission's policy assessment found that RLAH would reduce operators' intra-EU mobile revenues from roaming calls by at most €1.35bn.[13] While this captures a static effect, it ignores some possible responses to the policy.

Specific operators could be harmed due to the risk of arbitrage arising from intra-EU cost differences. Consumers may be able to acquire mobile service contracts where domestic prices are relatively cheap, but use the service predominately in a location with higher prevailing domestic tariffs. This could be particularly attractive for pre-paid services that are easy to buy and transport. The Commission aims to prevent this with the provision of reasonable use clauses, which could include residency requirements.[14] Arbitrage would result in revenue losses, which may result in some operators refusing to offer roaming.

Asymmetries across the mobile value chain

The ability to respond to the new regulation depends in part on the level of infrastructure that operators control throughout the value chain, both domestically and abroad. Larger operators that have infrastructure abroad are likely to be in a strong position to be able to make alliances and compete in the retail market with RLAH tariffs. Smaller MNOs that are present in only a few markets are likely to need to either form alliances or strike bilateral deals that provide them with sufficient margin to compete in the retail market. The positions of different types of operator are summarised in Figure 3.

The nature of bilateral deals is discussed further in the box above. Importantly, these smaller MNOs may find it more difficult to form the kind of roaming alliances that the Commission envisages.

Roaming agreements

In a bilateral roaming agreement, the level of wholesale roaming tariffs is material only when there is an asymmetry in traffic volumes. The deals are often reciprocal, so an equal flow of traffic in opposite directions results in a zero net wholesale payment. Traffic steering—the ability for an MNO to control which network a subscriber will roam onto—has meant that it is possible for operators to identify preferred partners for their roaming traffic to make these agreements balanced. Network coverage and quality are relevant factors that would influence these agreements, as home operators would seek to offer customers the same experience abroad as at home. Operators with smaller networks or subscriber bases may have reduced bargaining positions in these situations, especially if they cannot match the traffic offered by the counter-parties.

Source: Oxera.

Figure 3 Ability of operators to respond

MNOs present in multiple EU countries	MNOs with limited presence abroad	Full MVNOs	Thin MVNOs
• control of some infrastructure abroad	• no control over infrastructure abroad	• control voice and data interconnection point (MSC) in home country	• no infrastructure
• could be in strong position in forming agreements	• will need to strike bilateral or multilateral agreements	• can conclude roaming agreements	• reliant on host MNO for all interconnection
• some may already have products that offer tariffs similar to RLAH		• could be restricted by wholesale rates of host MNO	

Note: MSC, mobile switching centre. MVNOs do not control the wireless infrastructure (e.g. towers, radio equipment, spectrum rights), but gain wholesale access from a 'host' MNO. A 'thin' MVNO does not have mobile switching centre functionality and cannot conclude an interconnection deal on its own. A 'full' MVNO has this capability and can interconnect with other operators independently of the relationship with its host MNO.

Source: Oxera.

MVNOs and the potential for margin squeeze

MVNOs may find it hard to make alliances, as they tend to rely on their host to provide wholesale international roaming. A stylised MVNO agreement under the current regulation is shown in Figure 4.

A host MNO charges an MVNO a mark-up on its own wholesale costs, for example to cover billing and commercial costs, and activities it undertakes on the MVNO's behalf. The MVNO may have sufficient economic space to match its host's offer; it may also have flexibility to offer cheaper local rates offset by higher roaming charges, subject to rate caps.

Crucially, the agreements between MVNOs and MNOs are typically not price-regulated. Without corresponding wholesale measures, a remedy like RLAH could lead to margin squeeze, whereby an MVNO is unable to replicate the host's retail price. Figure 5 provides an example.

If the host achieves some wholesale savings from forming an alliance, it is not obliged to pass these on to the MVNO. The host could pass them on to its own customers, but prevent the MVNO from matching its price by maintaining the wholesale charge. In addition, by forcing the domestic and retail prices to be equal, the RLAH reform could reduce the flexibility of the MVNO's retail offer. RLAH could enhance a host's existing ability (i.e. control over all wholesale inputs) to impose a margin squeeze on an MVNO.[15] The problem of MVNOs gaining access to the 'right' wholesale price in relation to RLAH has been identified by the European Association of Full MVNOs (EAFM).[16]

Impact on consumers

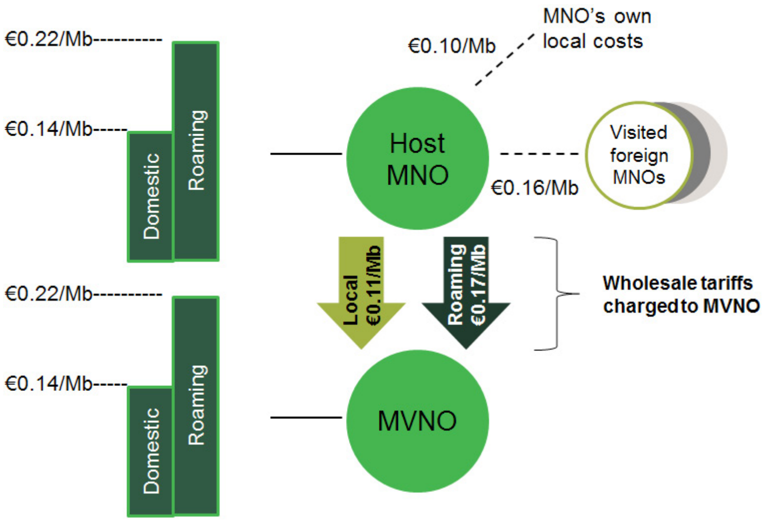
For consumers, the implications of RLAH will depend on whether, and how, operators re-adjust their retail and wholesale tariffs. If roaming charges are abolished as intended, this would improve total consumer welfare. The Commission estimates that it could result in an annual transfer of €1.35bn from service providers to end-users.[17]

However, the policy could have a detrimental impact on consumer welfare. If RLAH results in higher domestic tariffs it could disadvantage consumers who do not use roaming services. Margin squeeze practices such as the one illustrated above could harm competition and reduce consumer welfare in terms of price and operator choice.

In addition, operators could respond to the reform by offsetting the lost revenue with income from other services. This 'waterbed effect' occurs where regulation limits one source of revenue (in this case, roaming revenues) and operators respond by raising prices elsewhere. Economic models show that this is possible in mobile communications under a variety of competitive conditions.[18] Implicit in the policy is that domestic tariffs could rise; but other services such as non-EU international roaming could be attractive targets for price rises. This would shift the problem elsewhere.

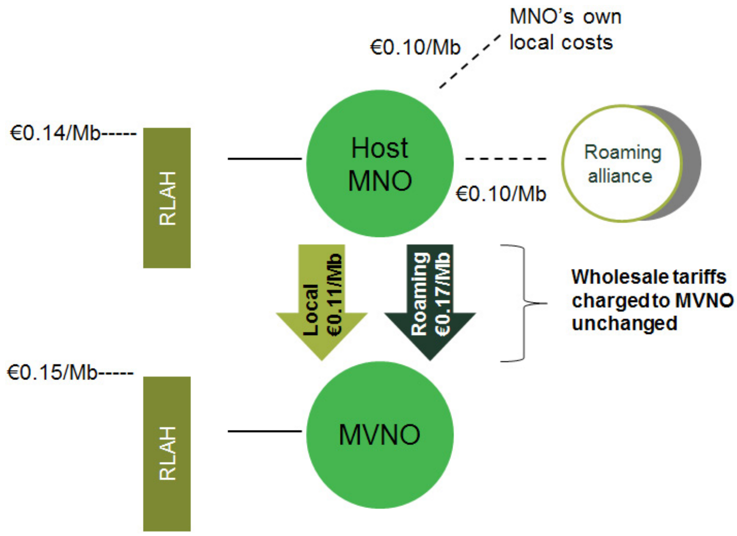
The size of any waterbed effect is ultimately an empirical question. Intra-EU roaming revenue comprised an average of 4.2% of total mobile revenues across the EU in 2009, while the obvious target of non-EU roaming would be small in comparison, and thus difficult to recover revenue from.[19] The Body of European Regulators for Electronic Communications (BEREC) has not observed price increases on rest-of-world roaming following previous regulations, although the reforms were different from the Connected Continent and the study did not consider the counterfactual prices.[20] The evidence is not clear-cut, although, given the magnitude of revenues at stake, some attempt to protect revenue cannot be ruled out.

Figure 4 Stylised MVNO wholesale agreement



Source: Oxera.

Figure 5 Stylised margin squeeze



Note: Assumes 5% of traffic is roaming.

Source: Oxera.

Are there any solutions?

The presence of intra-EU cost differences and RLAH's potential for unintended consequences pose challenges to the success of the policy. This could contribute to ex post competition challenges or even an undesirable change in the market structure. However, there may be ways to address these issues while maintaining pressure on roaming prices.

For example, the issue of cost differences might be addressed by requiring retail tariffs to be in line with local tariffs in the visited country. 'Roam like a local' would not provide the headline-grabbing elimination of roaming charges, but it might address the arbitrage issue and prove simpler to implement and monitor.

The Commission does not appear to have directly addressed the issue of margin squeeze. There are a number of options open to the Commission. For example, it could consider complementing RLAH with regulatory remedies directed at potential sources of market power in wholesale markets. These could take the form of formal controls on wholesale prices to mirror retail price changes so that MVNOs are not left out of the market (retail minus rules).

As a less intrusive intervention, the Commission could rely on commercial negotiations complemented by an obligation to provide roaming on fair, reasonable and non-discriminatory (FRAND) terms. Alternatively, waiting and seeing how commercial negotiations develop might be a preferable way to determine wholesale terms, as these have been shown to work in similar contexts—most notably, in the development of national wholesale access and roaming markets. In these circumstances, ex post competition law could be used to deal with any problems that might arise.

Whichever approach the Commission decides to take, the decision cannot be taken lightly, as the implications for the future competitive structure of the European mobile market could be significant.

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[1] European Commission (2013a), 'Proposal for a regulation of the European Parliament and of the Council laying down measures concerning the European single market for electronic communications and to achieve a Connected Continent, and amending Directives 2002/20/EC, 2002/21/EC and 2002/22/EC and Regulations (EC) No 1211/2009 and (EU) No 531/2012', policy proposal, 11 September.

[2] The reforms in the Connected Continent package aim at increasing transparency in the provision of retail communications services more generally. See European Commission (2013a), Chapter IV, Articles 21 to 29. See also European Commission (2009), 'Regulation (EC) No 544/2009 of the European Parliament and of the Council of 18 June 2009 amending Regulation (EC) No 717/2007 on roaming on public mobile telephone networks within the Community and Directive 2002/21/EC on a common regulatory framework for electronic communications networks and services', regulation, 29 June, para. 18.

[3] Data service elasticity is higher. See European Commission (2013b), 'Impact Assessment Accompanying the document Proposal for a Regulation of the European Parliament and of the Council laying down measures concerning the European single market for electronic communications and to achieve a Connected Continent, and amending Directives 2002/20/EC, 2002/21/EC and 2002/22/EC and Regulations (EC) No 1211/2009 and (EU) No 531/2012', Commission staff working document, 11 September.

[4] European Commission (2009), 'Regulation (EC) No 544/2009 of the European Parliament and of the Council of 18 June 2009 amending Regulation (EC) No 717/2007 on roaming on public mobile telephone networks within the Community and Directive 2002/21/EC on a common regulatory framework for electronic communications networks and services', regulation, 29 June.

[5] BEREC (2013), 'International Roaming BEREC Benchmark Data Report January 2012 – June 2012', report, 28 January, para. 1.5 and figure 16.

[6] These kinds of deals already exist. The Commission proposes that under RLAH such agreements are notified in order to increase transparency.

[7] For example, Vodafone subscribers from the UK can stay on the Vodafone network in Ireland when visiting there.

[8] European Commission (2013a), Explanatory Memorandum, para. 3.6.

[9] See European Commission (2013b), p. 74.

[10] See Vodafone (2013), 'Vodafone is one of the first operators in the world to offer 4G Roaming', press release, 7 November.

[11] See European Commission, 'Connected Continent legislative package'.

[12] European Commission (2013b), p. 74.

[13] This impact is based on an effective flat rate across Europe, and volumes remaining the same. See European Commission (2013b).

[14] The clause may make reference to 'the main pricing, volume or other parameters of the retail package in question'. See European Commission (2013b).

[15] A common requirement in finding a margin squeeze is that the integrated firm has market power in the provision of the wholesale input.

[16] See EAFM (2013), 'EESC Mobile Roaming Hearing', 23 October.

[17] European Commission (2013b).

[18] See Genakos, C. and Valletti, T. (2011), 'Testing the "waterbed" effect in mobile telephony', *Journal of the European Economic Association*, **9**:6, pp. 1114–42.

[19] BEREC (2010), 'International Mobile Roaming Regulation', BEREC Report, 13 December.

[20] BEREC (2013), 'International Roaming BEREC Benchmark Data Report July 2012 – March 2013', report, 30 September.