



Non-Confidential version

**Review of the functioning of the Roaming Regulation
Comments of Vodafone
26 January 2011**

We welcome comments or questions relating this submission. They can be directed to richard.feasey@vodafone.com

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Executive Summary

1. We welcome the Commission's recognition that the existing roaming regulation has inhibited rather than contributed towards competition in Europe. Despite this, we should not underestimate the progress which operators like Vodafone have made in making voice and data roaming simple and worry free over the past 5 years.
2. As the Commission itself recognised in 2008, any attempt to extend the current approach of price caps is particularly difficult when the retail prices for data services – whether domestic or roaming – are in such a state of flux. Regulating data would require a different approach to price caps.
3. The new Digital Agenda's target of aligning roaming to domestic prices by 2015 is unclear and unhelpful to the current debate. It implies a wide range of different retail roaming prices for users in different Member States, whereas the Commission previously claimed that the single market was best met by applying a single retail price to all users irrespective of their domestic circumstances. The Commission has contradictory views on what a single market means in this context. Either way, it cannot simply superimpose a political target on complex economic markets without further distorting competition.
4. We agree with BEREC that none of the various 'decoupling' and other 'structural' solutions which have been proposed would meet the Commission's target. Most of them would make roaming a significantly more complex and less attractive experience for customers. Many are already available today, but unpopular with most customers. We explain in detail why the Commission should not pursue these any further.
5. If the Commission is to regulate, we think it should instead focus its efforts on designing better price caps than we have today. Some linkage between domestic and roaming prices is probably inevitable and could be desirable. It could simplify the regulation and remove the need for the Commission to set detailed prices (although the relationship between such a rule for retail prices and wholesale price caps becomes challenging).
6. As the Commission concluded in 2006 (and as BEREC again conclude in 2010) this does not mean it can simply require operators to charge domestic prices whenever a customer roams. Setting price caps under these circumstances is almost impossible because some

operators would make losses on roaming whilst others made excessive profits. Those making losses would be forced to block roaming services for as many as 160 million devices. Over time, domestic and wholesale prices would rebalance amongst different Member States. European users in 6 Member States would find themselves paying more for all their mobile services as a result. Many smaller mobile operators would be forced to merge or face bankruptcy. This approach would cause chaos and disruption in one of Europe's most important sectors, and would be unlawful in any event.

7. A better way forward might be to require operators to offer a regulated roaming service where usage is capped at a level sufficient to meet the needs of occasional roamers. Users would pay a daily charge to cover the costs of roaming, but would otherwise pay their normal domestic prices when roaming within the usage limit. Outside the limit, higher prices would apply.
8. There is no simple 'fix' which will deliver the political targets which the Commission has set itself for roaming. Instead, we need to explore proposals which improve upon what we have today. In doing so, we must ensure more room for innovation and competition. We must also avoid unnecessary damage or disruption to an important European industry and we must avoid simply moving profits from one set of operators to another. And, of course, we must avoid anything which makes roaming less attractive for users.

Today's debate

9. Since the Commission first proposed regulation of international roaming in 2006, Vodafone has been an active participant in the regulatory debates which have followed. But we have also taken action in the marketplace. We launched Vodafone Passport in 2005 – before regulation was proposed – in order to provide our customers with an attractive alternative to what became the Eurotariff. We have 28 million Passport users today. In 2008 we were the first operator to offer daily, weekly and monthly roaming data bundles at a fixed total cost, removing worries about bill shock. And two months ago, in November 2010, we announced that smartphone users can include roaming in their normal monthly subscription if they are regular travellers, or otherwise add it for only €2 a day¹. Whatever the outcome of the latest regulatory debate, we will continue our efforts to make roaming as easy, intuitive and convenient as possible for our customers.
10. The debate we are having today differs from earlier debates in at least two important respects.
11. First, there is growing recognition that the detailed price controls introduced by the previous Commission have done nothing to enhance competition, particularly in the retail market for roaming. Instead, prices have tended to cluster around the regulated caps and the claims of smaller operators that lowering wholesale prices would enable them to drive down retail prices have proven unfounded. Most of the innovation that we have seen in the market in the past 5 years has in fact been driven by operators like Vodafone. We would have seen more had we not had to divert resources away from commercial initiatives in order to meet regulatory obligations².
12. Vodafone has argued for many years that customers would be better served if competition could emerge between large operators or groups, each with their own pan-European networks on which they could build 'on net' retail offers. We explained in our reply to the Commission in March 2006 how mobile operators in the United States

¹ <http://www.vodafone.com/content/index/press/news/dataroaming.html>

² Implementing the roaming regulation has required significant changes to billing systems. These must be scheduled into a finite number of IT systems upgrades which are undertaken every year and which are carefully gated to ensure overall system stability. Including regulatory requirements means excluding other commercial projects.

had eliminated roaming charges by doing precisely this. More recently, we have seen African operators do the same³.

13. European regulation has deliberately prevented us from following the same path⁴. First, Vodafone was prevented by the Commission from using the network advantages it obtained with the purchase of Mannesmann to develop new roaming offers until 2004⁵. More recently, wholesale regulation has protected small national operators from the competitive pressures which might otherwise have forced consolidation over the past decade.
14. Europe has sought to preserve a fragmented and fractured industry structure in the (mistaken) belief that this is synonymous with greater competition.
15. Despite these reservations, we welcome the starting point for this consultation. We welcome the fact that this Commission recognises the deficiencies of price caps. The Commissioner has made it clear that she is seeking 'structural' solutions to roaming which will not inhibit competition and innovation as price caps have done. We share and welcome the Commissioner's distaste for price caps and share her wish to find better alternatives.
16. However, as BEREC's study of possible alternative solutions shows, we must ensure that any new solution will actually address the policymakers' objectives, and that the benefits of moving to a new model outweigh the costs of doing so⁶. In particular, we must not make roaming a more confusing, complex or otherwise difficult experience than it is today. This is considerable challenge because roaming in Europe is remarkably straightforward. Customers either turn on their phones when they get off the plane and the service works seamlessly as they jump from one network to another. There is no need to register with a new service provider, no need to establish a separate billing relationship, no need to call a different customer services number or to configure a new voicemail. Everything works exactly and seamlessly as if the customer is at home. Whilst customers might welcome roaming at a lower price, they will not want or accept the loss of any of these

³ Zain's One Network tariff and MTN's One World each offer roaming at domestic rates in at least 21 countries

⁴ Although we explained in March 2006 how a policy of pan-European consolidation has been applied by the Commission to the European transport sectors, see 'Efficiency gains from integration: parallels in the transport industry', Charles Rivers Associates, March 2006

⁵ <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/00/373>

⁶ http://www.erg.eu.int/doc/berec/bor_10_58.pdf, hereafter referred to as BEREC Report

features. An alternative approach which results in an impoverished customer experience is not an approach worth pursuing.

17. The second difference to previous debates arises from the recent introduction by the Commission of a 'Digital Agenda for Europe' target that 'the difference between roaming and national tariffs should approach zero by 2015'⁷. As BEREC explain, it is not clear exactly what this target means, nor whether any of the 'structural solutions' designed to promote competition and remove price caps could be relied upon to actually achieve it⁸. This is a topic to which we return below.

Developments since the Regulation

Question 1: To what extent do you believe that the current regulation achieved its objectives in terms of (a) contributing to the single market for roaming services? (b) Ensuring consumer protection (c) Promoting competition

18. The current regulation was always intended to be first and foremost a consumer protection measure. It was for this reason, for example, that policymakers determined that users would have to 'opt out' from the Eurotariff and SMS caps in order to be able to take advantage of commercial alternatives. Vodafone customers aside, relatively few users appear to have done so, with the result that most consumers who roam today pay prices (for voice and SMS services) which are determined by regulation. In this sense, the regulation has achieved its (narrowly defined) objective and the prices which these consumers pay have fallen in line with the caps set by regulation.
19. Protecting consumers is not, however, the same as maximising their welfare. The value that users obtain from roaming services depends not only on the price they pay but the quantity which they feel able to consume. In 2006 the Commission confidently predicted that the regulation would unlock demand for roaming which it claimed was being frustrated by 'excessive' prices charged by operators. This allowed the Commission to claim in its original impact assessment that

⁷ http://ec.europa.eu/information_society/digital-agenda/documents/digital-agenda-communication-en.pdf

⁸ BEREC Report p.28

mobile operators would not see any significant reduction in roaming revenues⁹.

20. In the event, retail revenues from European roaming fell by at least €1 bn in just 2 years following the introduction of the regulation¹⁰. The latest BEREC data confirms that the voice roaming elasticity has been less than 0.5 since regulation was introduced¹¹. The Commission's earlier Impact Assessments now look hopelessly inaccurate. Claims that regulation would have no impact on the industry have proven unfounded.
21. The Commission's failure to predict the impact of regulation arises in part from a misunderstanding of the roaming market and the nature of competition, particularly at the retail level. In the past the Commission has appeared to believe that the root cause of 'excessive' retail prices for roaming was some form of structural failure in the wholesale roaming market. Once this was removed, the Commission expected that competition, particularly from smaller operators, would reduce retail prices to much lower levels which would better reflect their view of consumer demand and hence of 'competitive' prices.
22. In fact, as Vodafone explained on previous occasions, the retail prices which the Commission regarded as 'excessive' were simply evidence of the relative inelasticity of roaming services. As BEREC's recent customer research confirms, 'many mobile users do not take roaming prices into account when choosing a mobile network'¹². Perhaps the Commission thinks they should, but the fact is that many do not (and there are in fact good reasons why they don't). Competition then drives firms to focus on those services which consumers value most highly when deciding which network to choose. Firms that did not do this would risk losing customers to their competitors.
23. This means that, provided the mobile retail market is competitive overall (as most accept it is), the resulting structure of prices that we observe is the one that is likely to maximise consumer welfare and best meet consumer needs. The prices which the Commission regards as

⁹ Curiously, the full 2006 Impact Assessment is not accessible on the Commission website today, but our records show that the July 2006 Impact Assessment ran scenarios assuming an own price elasticity for voice calls of 1.0 or 1.2 and described the assumption of 0.55 as 'pessimistic'. The 2008 assessment adopted the same assumptions.

¹⁰ From €5.7bn in 2007 to €4.6bn in 2009, AT Kearney estimates for GSMA

¹¹ http://www.erg.eu.int/doc/berec/bor_10_50.pdf. Comparison of prices and volumes for outbound and inbound calls (excluding special corporate) Q2 2007 and Q2 2010. 2007 pricing data derived from http://www.erg.eu.int/doc/publications/erg_07_85_intl_roaming_rep.pdf

¹² BEREC Report, p.59

'excessive' will, in these circumstances, reflect the outcome of a properly functioning competitive market.

24. Evidence since the roaming market has been regulated strengthens rather than weakens this conclusion. As BEREC note, some of the smaller operators who had claimed that roaming was relatively elastic did introduce heavily discounted voice roaming offers at the outset. But these were then withdrawn once it became clear that they did not lead consumers to switch network provider as these operators had expected¹³.
25. In addition, retail roaming prices in super-competitive retail markets, such as the UK, have not been significantly different (or lower) than those in other markets. There is no reason to think that the roaming prices we observe are evidence of market failure.
26. These points are important because they explain why the Commission's view of what represents an 'excessive' price for roaming is a political rather than an economic view. Competitive prices are still likely to be 'excessive' if measured against the Commission's EDA target and it is not at all clear whether promoting competition would result in prices moving towards or away from this target¹⁴. With significant differences in demand elasticity for domestic and for roaming services, there is no reason to suppose that the retail prices charged for these services would converge in a competitive market¹⁵.
27. We have already said that the current regulation has done nothing to promote competition. Smaller operators have not driven innovation in the roaming market as they promised and regulation has imposed significant compliance costs on operators which has prevented other commercial initiatives¹⁶. The Commission's current search for 'structural solutions' is itself an explicit admission of this.

¹³ BEREC Report, p.8

¹⁴ Commissioner Kroes has said: "Some have questioned whether we can reconcile achieving that ambitious target with market-oriented solutions. I would not be too quick to reach such a conclusion – and all of you here in this room, as the main players in the mobile industry, can help me to prove it wrong." She did not specify what she had in mind.
<http://europa.eu/rapid/pressReleasesAction.do?reference=SPEECH/10/735>

¹⁵ Assuming wholesale cost differences were eliminated. Retail prices would converge to the extent that domestic and roaming services become direct substitutes, as might occur in some scenarios being contemplated by the Commission

¹⁶ This was highlighted by Vodafone in our submission to the review of the Roaming Regulation in July 2008, and is referenced in the BEREC Report at p.15

28. We think the current regulation has, if anything, delayed the point at which Europe might be able to achieve a proper commercial solution to the roaming issue. As we explained earlier, we believe the greatest obstacle to this is the fragmented structure of the mobile industry in Europe. This will only be overcome if smaller national operators are forced to develop pan-European networks instead of relying on wholesale markets. Yet the effect of the current regulation has been to reduce this pressure by improving the financial position of smaller operators without their having to take any commercial risk or adapt their business. Thanks to regulation, smaller operators have seen their wholesale voice costs fall by over 50%¹⁷ whilst retail prices have fallen by only 44%. The regulation has favoured the smaller operators who originally argued for it. In doing so, it is reinforcing the fragmentation of the industry.
29. The Commission also asks whether the current regulation has contributed to the single market for roaming services. This is difficult to answer because we do not really know what the Commission means by a 'single market for roaming services'. We have already described how we envisage a market in which a small number of networks offer competing retail services across Europe, but the Commission appears to have other ideas in mind.
30. One definition of a market is one in which prices are uniform, reflecting common conditions of supply and demand. This was clearly the Commission's view in 2006 when it applied a single uniform Eurotariff price cap to all users and to all operators, irrespective of differences between or within Member States. The Eurotariff is essentially a regulatory construct which has been superimposed on national operators and on national markets.
31. Another radically different view of a single market is one in which roaming prices align more closely to domestic prices, but still reflect the substantial differences in domestic prices that exist between Member States. This appears to what the Commission has in mind today and is explicitly reflected in the EDA target. Clearly the current Eurotariff regulation has failed to achieve this view of the single market.

¹⁷ Fig 12 http://www.erg.eu.int/doc/berec/bor_10_50.pdf

Question 2: Do you consider that regulatory intervention for roaming services is needed beyond June 2012? Please consider voice, SMS and data roaming services separately.

32. We have already explained how the case for regulation depends upon the objective which the Commission has. BEREC have made the same point. We have explained why, in the EDA, the Commission is pursuing a political rather than economic target. We do not have any reason to believe that developments in the retail roaming market over the next 18 months will lead to the achievement of this target. Developments will instead continue to reflect the outcome of competitive interactions between firms who have to respond to customer needs.
33. We think there is widespread agreement that the data roaming market is likely to offer the greatest prospects for commercial innovation and, hence, for complete regulatory withdrawal in the medium term. The wholesale market is already delivering prices at levels substantially below existing regulatory caps and we are seeing significant innovation in the retail market, as evidenced by Vodafone's November smartphone tariff announcement. Traditional concerns about 'bill shock' have now been largely addressed.
34. There are also plenty of reasons to believe that the data market will continue to evolve rapidly. Data users are already accustomed to using roaming services from multiple providers, particularly WiFi networks which are being deployed across Europe. Mobile operators are themselves already exploring alternative data roaming models to manage congestion and new devices such as tablets are likely to accelerate these trends. Data services do not raise numbering or termination issues which make many 'structural' solutions unattractive for voice roaming. Any of these features could herald the emergence of new business models which either compete with, or replace, current data roaming propositions. If they do, it will also have implications for voice roaming, as voice services are increasingly provided as data services (i.e. VOIP).
35. However, the data market remains immature at this stage and it is difficult to predict how any or all of these trends might develop. At a minimum, regulation must not inhibit them.

Question 3: Do you consider that the current model of regulation would be effective in the future in light of the desired objectives? Will this approach ensure adequate consumer protection and help stimulate competition? Is it efficient and coherent with EU policies?

36. We have already explained why the current model of regulation protects consumers but does nothing to stimulate competition. We have also argued elsewhere that the current model of regulation is not coherent with other principles of the electronic communications regulatory framework or EU law¹⁸. We see no reason why these conclusions would not also apply to the application of similar provisions in the future.
37. In addition, we think two new challenges arise if the Commission continues with the current model of regulation. The first arises if it were to be extended to retail data roaming caps and the second arises if an attempt is made to use price caps to pursue the EDA target.
38. The Commission has previously recognised the challenges of setting retail price caps for data services. This is one reason why it declined to do so in 2008. Data pricing is non-linear, meaning that the unit price varies significantly with respect the type of data application that is being used and the users' willingness to pay. For example, tariffs for those using e-mail services will be higher, on a per kilobyte basis, than tariffs for those streaming videos. Any attempt to apply linear prices across the vast range of different types of data service would result in services such as streaming video being far too expensive or services such as e-mail being far too cheap. Linear prices would bear no relationship to users' relative willingness to pay and would give rise to massive distortions in consumption (either under- or over-consumption). Non-linear pricing is an essential feature of an efficient (and expanding) data services market.
39. This makes the setting of data price caps more challenging than the BEREC Report appears to suggest¹⁹. If the Commission were to follow the current model for voice and SMS and set an absolute cap then it would find itself having to specify individual caps for each type of data service (and to define those services). This is impracticable as well as

¹⁸ In our application to the European Court of Justice, Case C58-8, judgement at <http://curia.europa.eu/jurisp/cgi-bin/form.pl?lang=en&newform=newform&jurcdj=jurcdj&docj=docj&docnoj=docnoj&typeord=ALL&numaf=58/08&ddatefs=&mdatefs=&ydatefs=&ddatefe=&mdatefe=&ydatefe=&nomusuel=&domaine=&mots=&resmax=100&Submit=Submit>

¹⁹ BEREC Report p.27

unwise. The alternative would be to an average cap across all data traffic carried by an operator. It would be very difficult (as well as inefficient) to apply such an average cap to each and every individual customer, so it would be more appropriate to apply an average cap to the traffic generated by all customers of an individual operator. This would of course allow for the possibility that some individual users could then face roaming prices which were well above the regulated cap for the average. This was something the Commission was keen to avoid, at least in 2006.

40. The Commission faces another challenge with data caps, namely that domestic pricing for data is in a state of flux (in a way not seen with voice or SMS). One of the greatest challenges facing mobile operators today is the challenge of how to price domestic data services so as to better align revenues and costs. Many operators are making radical changes to the way they price mobile data services, with a current trend away from simple 'unlimited' tariffs towards usage-based and application-specific alternatives²⁰.
41. Nobody – including the Commission - knows how domestic data pricing will evolve over the next 5 years. This only adds to the difficulty of trying to set caps and structures for data roaming. With domestic prices so volatile and uncertain, attempts to 'anchor' data roaming prices in regulation means that prices will diverge if the former changes in ways not anticipated by the regulator.
42. This brings us to the second problem: the EDA target. Any attempt to align data roaming prices with domestic prices and to set roaming prices means that the Commission will be indirectly regulating domestic data prices. Unless the Commission can predict how domestic data tariffs should evolve (see above), then this combination of price caps and EDA targets is likely to limit innovation in both roaming and in domestic markets.
43. Tying roaming and domestic prices together, as the EDA target does, would under the current model also involve imposing a uniform price cap on both the roaming and domestic prices of each of the relevant services. The Eurotariff has already reduced differences in roaming prices between Member States but the EDA target would now mean that (significant) differences between domestic rates that exist today

²⁰ See

http://www.vodafone.com/content/dam/vodafone/investors/conference_presentations/goldman_sachs_220910.pdf

would also have to be eliminated by regulation²¹. This is neither feasible nor desirable, and we cannot believe it is what the Commission intends.

44. We therefore share BEREC's view that the continuation of the current model (which BEREC proposes, but we do not) cannot be consistent with the pursuit of the Commission's EDA target²².

Question 4: If this model is suitable in principle, what modifications may be required in order to achieve a well functioning single market for roaming services? Should this approach be combined with other options?

45. For the reasons given above, we do not think that the current uniform price caps are suitable for the Commission's purposes.

Question 5: Would regulation of wholesale prices charged to MNOs, combined with transparency measures, be effective, efficient and coherent in light of the single market objective? Would the benefits of regulated wholesale rates be passed through to consumers?

46. We have already explained why competition in the retail market (even if assisted by additional measures to increase transparency) is unlikely to deliver outcomes consistent with the Commission's EDA target. There is no reason to suppose that the target would be met without regulation in the retail market.

Question 6: Do you consider that retail regulation of data roaming prices is necessary? If not, what are the likely market developments post-June 2012?

47. We have explained why extending existing regulatory models to retail data services is far more difficult than regulating voice and SMS services (and would require a different approach if it were to be attempted at all). We have also said that data roaming markets appear to have greater prospects for the kind of commercial innovation that would make regulation unnecessary in the longer term. But we do not believe that the outcome of competition in the retail data market will fulfil the Commission's EDA target in the foreseeable future because we do not think that this target represents a competitive outcome.

²¹ BEREC Report p.18

²² BEREC Report p.22

Question 7: If retail regulation of data roaming prices was necessary, what would be an appropriate model for such regulation?

48. We have explained why a simple linear (per kilobyte) price cap would not be appropriate for retail data services. This suggests that a different approach to regulation will be required if retail regulation of data roaming prices is to be contemplated. We consider this further in our responses below.

Question 8: Please indicate the advantages and disadvantages of these [roaming similar to domestic] approaches, relative to each other and to the current model of price capping, considering also competition aspects such as the possibility of margin squeeze?

49. Models which explicitly tie retail roaming prices to domestic prices are clearly more likely to achieve the Commission's EDA target than other models. Some versions closely resemble the approach which Vodafone has successfully adopted with its 'take your home tariff abroad' strategy which underpins both Vodafone Passport and our recent smartphone data tariffs. In our experience, customers have a good understanding of their domestic prices and feel comfortable using services at home. Adopting a similar structure for roaming prices allows them to feel equally comfortable when abroad. Of course, supplementary charges will be needed to cover the additional wholesale costs of roaming. These can be levied in a variety of ways. Currently Vodafone employs a fixed per call charge for voice calling on Passport and a fixed per day charge (with a limit on total consumption) for smartphone data users.

50. Tying roaming prices to domestic prices in the home market is far better than tying them to domestic prices in the visited market. The latter would only increase the complexity of roaming (relative to the current model) with users being presented with different prices in each Member State they visit. Whilst BEREC consider that the merits of 'roam like a local' are 'much the same' as 'roam like home', we think the user experience would be far worse²³. The idea of tying roaming prices to domestic prices in the visited market should be swiftly abandoned by the Commission.

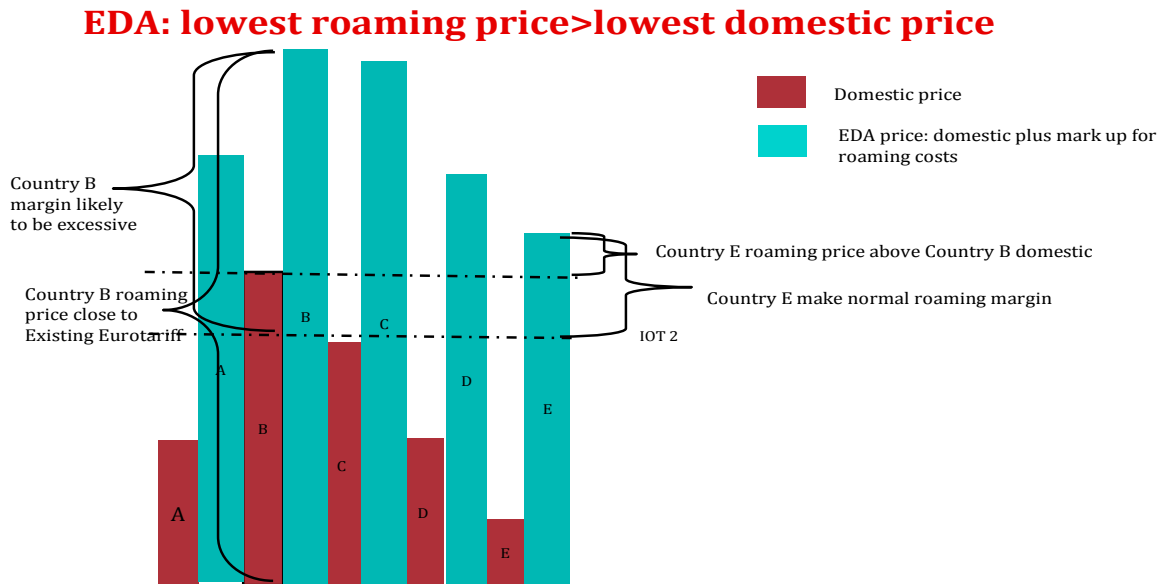
²³ BEREC Report p.19. BEREC appear to be attracted by the possibility of then setting 'retail minus' wholesale rates to support the 'roam like a local option'. This would mark a return to the original NNT approach to wholesale price setting, which was criticised by the Commission in its original sector enquiry on roaming and which was abandoned by the industry in 1998/9, see http://ec.europa.eu/competition/sectors/telecommunications/archive/inquiries/roaming/working_document_on_initial_results.pdf

51. Tying roaming prices to domestic prices in the home market has other advantages when compared to the current model. First, it does not prescribe the structure of roaming or domestic tariffs, only the relationship between them. It is therefore less likely to inhibit innovation in domestic prices, which we have already argued should be an important consideration for the Commission (particularly with regard to data prices). Second, it allows the underlying costs of roaming for customers to fall in line with reductions in domestic tariffs. These will reflect movements in underlying costs of provision and changes in competitive dynamics. This avoids the need for regulators to predict how costs might move over time – something which the latest data in the BEREC Report confirms is difficult to do well²⁴. Instead, the Commission would simply have to set a cap on the level of the supplementary charge that could be levied to cover the additional costs of roaming (and the extent to which, and the speed at which, the EDA target would be met). This creates options for a much simpler form of retail price regulation than applies today.
52. Most versions of a ‘roam like home’ model would allow both roaming and domestic tariffs to match the needs of particular customers in particular Member States rather than superimposing a uniform tariff (which, as we have already explained, is simply not feasible given current spreads in domestic prices across Europe). A ‘roam like home’ model would ensure more efficient pricing and would be likely to reduce the risk that uniform price caps dampen competition and create a focal point around which operators would cluster.
53. We recognise that tying retail roaming prices to domestic prices is not without difficulty. As BEREC explain (and the Commission itself notes), the most fundamental difficulty arises from the fact that domestic prices differ significantly between Member States today, and are likely to continue to do so for the foreseeable future.
54. We take BEREC’s figures as illustrative in what follows. They suggest that, if this model were applied today, regulated roaming services provided by operators in Member States such as Lithuania (country E) would substitute for domestic services provided in Member States like the Netherlands (country B)²⁵ unless the supplemental mark up for roaming costs was to be very large indeed (of the order of 14 cents/min in this illustration). But with a 14 cent mark up for roaming costs,

²⁴ BEREC Report p. 7

²⁵ BEREC Report p.8

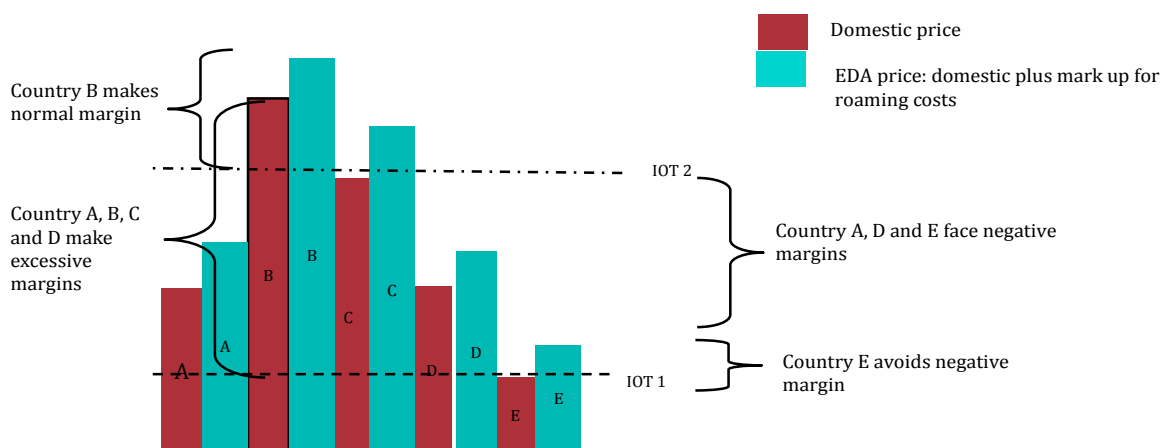
country B roamers would find themselves facing an average roaming price close to existing Eurotariff levels, an outcome which is unlikely to be acceptable. This situation is illustrated below, with price caps being set so that country E's retail roaming price is above country B's domestic price:



55. The problem gets worse when we consider the wholesale position. Wholesale roaming prices would have to be very low indeed in order to avoid margin squeeze for those operators in country E. Let us say the wholesale price would have to be 5 cents. But if this is done then operators in country B will be enjoying the same 5 cent wholesale cost with much higher retail caps. They will be making like 300% retail margins on their outbound roaming services, whilst their counterparts in country E (and A and D) are struggling to break even. This is illustrated below:

EDA + wholesale caps: retail margins

With EDA retail targets but uniform wholesale caps, some operators will make negative margins (IOT2) or others will make excessive margins (IOT1)



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10 January 2011



56. For these reasons the Commission rightly concluded in 2006, after Commissioner Reding had initially proposed it, that attempts to equate roaming to domestic prices under the so-called 'home pricing principle' should be abandoned. In our submission to the Commission of 12 May 2006 Vodafone included a detailed analysis from Frontier Economics of the likely consequences of attempting to align roaming and domestic prices. Frontier found then that operators in higher cost markets would seek to reduce the impact of very low wholesale caps (which would be required to support the EDA approach) by seeking to restrict the ability of users to roam into their country. Thus, the immediate consequence of such an approach would be a 'connectivity breakdown' as operators in visited markets sought to limit negative margins from roaming visitors. Wholesale caps would have to be relaxed so as to allow operators in different markets to recover their costs (and thereby resume the provision of roaming services). In time, cross-border arbitrage would then drive retail prices in higher cost Member States down and prices in lower cost Member States up. Domestic and roaming prices would be the same and would converge around a new average, sufficient to recover total costs of providing services across the Union, but higher than before in some countries and lower in others.

57. Frontier explained how the competitive structure of the market would also have to change to allow this averaging or rebalancing of costs and prices across the Union. Small national operators would be squeezed by pan-European operators who would be better placed to manage the rebalancing of tariffs across markets.
58. We believe the analysis we undertook in 2006 remains valid in 2010, although some modifications are required if we now assume that a small mark up to cover roaming specific costs will be required. We asked Frontier to re-run their modelling with revised assumptions (and updated data about domestic prices and call volumes). We attach their conclusions at Annex A. Frontier find that, if the Commission were to apply a uniform wholesale price cap of 8 cents/minute for outgoing voice calls (lower than BEREC's estimation of 10 cents/minute²⁶), roaming services could be disrupted for customers with over 160 connections in 10 Member States. If wholesale prices are then allowed to rise to restore profitability, but the retail price caps remain in place, then domestic prices could rise in 6 Member States, representing 50 million connections.
59. The Frontier report confirms that attempting to meet the EDA target by tying roaming to home market prices in the presence of the current wide spread of domestic prices amongst Member States will result in significant dislocation of mobile markets across Europe, with adverse consequences for many millions of users.
60. These considerations led BEREC to rule out the 'roam like home' approach 'for the moment'²⁷. As they note, the EDA target could only be met without significant disruption if differences between the domestic prices in Member States were first to narrow significantly. This would allow a reduction in the supplementary charge for roaming without producing cross-border arbitrage.
61. There is, however, no reason to suppose that domestic prices will converge in Europe in the foreseeable future²⁸. Differences in the price of mobile services between Member States are not 'artificial' as the Commission sometimes seems to believe, but reflect fundamental differences in customer preferences (different device categories,

²⁶ BEREC Report p.5

²⁷ BEREC Report p. 18

²⁸ The Commission might claim that convergence of mobile termination rates (as envisaged by the Recommendation) could be expected to drive retail price convergence in European mobile markets. This is a fair point, but other factors are more significant.

different services), differences in prevailing commercial models (pre-paid vs post-paid, subsidy vs non-subsidy, average contract duration), differences in distribution models (commissions to third party dealers etc) as well as differences in underlying costs (coverage, labour costs) and in the competitive dynamics of individual markets (competition between operators but also upstream and downstream). None of these factors are likely to disappear in the foreseeable future.

62. An alternative approach (which operators would adopt in any event if faced with the imposition of 'roam like home' regulation) is to retain relatively low supplementary charges for roaming but to constrain the extent to which these apply to roaming services²⁹. In this case, the 'roam like home' provisions would apply to a limited level of usage. This level would have to be sufficient to ensure that the model could be used to meet the roaming needs of at least infrequent roamers, but that it would not be so large as to allow the widespread substitution of domestic services through cross-border arbitrage. Use within the allowable limit would be at prices close to domestic rates (with an appropriate mark up for roaming specific costs), but use beyond this level would either not be subject to regulation at all or would be subject to safeguard price caps which did not give rise to arbitrage.
63. This approach is not without challenges. We would need to determine what the usage limits would be and what would happen when they were met. Are customers disconnected and how are they informed of the prices applicable beyond that point? We would also need to determine what the supplementary roaming charge would be and how it might be structured. We have some examples of this in the form of Vodafone's existing smartphone data tariffs, which include usage caps of, typically, 25 Mb per day in return for payment of a daily supplement of €2. Other models are conceivable.
64. As we explained earlier, any 'roam like home' proposition, such as the one we have described here, presents challenges when it comes to setting corresponding wholesale prices (as does almost any approach to retail regulation except the current model which superimposes a uniform retail price on top of a uniform wholesale cap). Operators will be setting a wide range of retail roaming prices, reflecting differences in their respective domestic prices (both between Member States and

²⁹ This builds upon the Commission's own suggestion that the impact of 'access-based approaches' might be constrained by ensuring that wholesale terms applied only to roaming traffic and not to mobile services generally, Commission p.9

between individual users within a Member State)³⁰. A uniform wholesale price cap would mean that retail margins for individual users and individual calls would vary significantly between operators.

65. This concern is at least reduced to some extent if consumption of the 'roam like home' service is limited in the way as we have suggested. This would ensure that, even if the regulated 'roam like home' services are provided at negative margins by some operators in some markets, the overall impact might still be manageable when compared with overall margins earned from retail roaming services as a whole. Further work is required to determine exactly what level of cap might be required.

Question 9: In general, would these decoupling approaches be effective in terms of stimulating greater competition for roaming services? Would all customer segments be able to benefit? Would such increased competition be sufficient to give consumers and effective choice of roaming services at (near) domestic prices?

66. Vodafone would support new approaches, such as decoupling, if they met the needs of both customers and policymakers and replaced rather than simply supplemented other forms of retail price regulation (whether the existing price caps or 'roam like home' options discussed above).
67. However, we do not think that the Commission (or BEREC or any other party, Vodafone included) has yet been able, or is likely to be able, to devise an approach which would meet these conditions. The 'decoupling' approaches proposed by the Commission fall short in several important respects.
68. First, we have already explained why there is no reason to believe that increasing competition will mean that the Commission's EDA target is met. 'Decoupling' would require either that the Commission abandoned the EDA target, or that it supplemented this approach with additional measures (most likely retail price controls) to ensure that the EDA target was met. We see no merit in introducing 'decoupling' measures simply to supplement price controls.
69. Second, we do not think that competition would develop for all customers and nor do we think that all customers would stand to

³⁰ This is evident in the latest BEREC data, which shows significant variation in non-Eurotariff prices, see p.11 http://www.erg.eu.int/doc/berec/bor_10_50.pdf

benefit. 'Decoupling' would require operators or other service providers to market roaming services directly to customers and to invest in acquiring and retaining them. These costs include commissions to third party dealers and distributors, as well as marketing and advertising budgets. Roaming is today largely subsumed within the much larger marketing budgets of mobile operators – 'decoupling' would remove many of the synergies which currently exist.

70. The consequence of this is that investments in sales and marketing would only be made for those (frequent) roamers who generated sufficient revenues to cover those costs and earn a margin. This is what we find today, where specialised roaming providers such as Truphone already offer 'decoupled' roaming services to frequent travellers. The constraints which prevent Truphone (or any other small operator currently advocating this solution) from becoming a truly mass market provider of roaming services are not technical or legal and they cannot be overcome by regulation. They simply reflect the economics of offering roaming services on a stand alone basis.
71. To illustrate, Vodafone estimates that the vast majority of its infrequent roamers - those roaming 2 or 3 times a year on average - generate annual revenues from roaming of less than € []. This figure might change under different competitive conditions and with lower prices, but we have already explained that roaming services are relatively inelastic. Annual revenues would be likely to fall as a result. Assuming that competition for these users allowed operators to earn a retail margin of 30%, operators would need to be confident of being able to acquire and retain these users for a cost of less than € [] p.a. in order to earn profit margin of a few Euros at most. Economics like this mean that competition will not be focussed on these customers and, if it were, that the underlying costs of serving them would result in retail prices little different from the Eurotariff caps we have today ³¹.
72. Our third objection reinforces the point just made. Decoupling roaming will also make the roaming experience more complex for users and increase their search costs (for which our survey evidence suggests roaming customers have a very low tolerance). These costs will most readily be borne by users who have most to gain from switching providers: frequent roamers. The likely benefits for infrequent roamers, amounting a few Euros a year at most, are unlikely to be worth the costs they would face in switching provider. On the contrary, infrequent

³¹ This is also BEREC's conclusion at p.16

roamers tell us that they expect Vodafone, as their domestic service provider, to take responsibility for securing the best roaming terms for them. They rightly understand that they will not always have the information or the time to make the kind of choices which the decoupling remedy would impose upon them.

73. The only way to ensure widespread take up of the decoupling model in these circumstances would be to force users to choose alternative providers for roaming services. This was the model adopted by the Australian regulator in requiring users to nominate their preferred carrier for the provision of long distance services (when it sought to 'decouple' long distance services from access). Vodafone is strongly opposed to any coercion of customers. It is not what customers expect or want and it would impose unnecessary costs on them.

Question 10: Would such 'structural approaches be efficient? What are the technical implementation issues associated with these approaches?

74. The costs of 'decoupling' would be significant for both users and operators. In order to implement a 'multi IMSI' approach (allowing the user to use different service providers for domestic and roaming services whilst retaining the same device and number), the vast majority of users would need to undertake a SIM swap each time they wanted to change one or more of their providers.
75. Some of the costs of decoupling may either be met by the user or by the operator, depending on how the approach is implemented. For example, users may need to manually enable registration to the home roaming provider by entering a PIN code (which the user would have to be able to recall) when they first turn on the device in the visited market. To avoid this the home operators would need to agree complex interworking arrangements between themselves to ensure that the SIM presents the right IMSI information to the VLR when it is first activated on the visited network. Another example of this kind is billing. Either the user will face additional costs by entering into separate billing arrangements with the roaming service provider or this will be integrated into the bills provided by the existing domestic service provider. If the latter, then operators would again have to establish complex interworking arrangements to enable this. Procedures would then need to be agreed for issues such as bad debt (if the customer defaults on part of the bill, which operator carries the debt?) and customer complaints. In addition, the operators would have to agree

how SIM cards were to be distributed in the first place. Operators would have to carry inventories of dual IMSI SIMs and either allow users to register to take both domestic and roaming services from different providers at the same point of sale or require users to visit multiple points of sale or online facilities in order to complete the registration process. Procedures would also need to be agreed for the handling of service related enquiries – customers may not know who is responsible if their roaming services do not work and may be unclear whether the problem relates to the handset (provided by the domestic service provider) or the network services (provided by the roaming service provider)³².

76. Complex provisions would then be needed to handle the sharing of commercially sensitive information (including information relating to customers registered, to network encryption, and to usage behaviour) between competitors. Whilst most of these issues are theoretically capable of being resolved, no arrangements exist today to do so and it would take several years and a great deal of work to conclude them.
77. Although these comments apply to both the 'home market provider' CPS and the 'visited market provider' CPS versions of the 'decoupling' remedy, we assume that it is only the former which merits serious consideration. Allowing users to register with providers in the visited market would add further complexity to the implementation (the domestic service provider would have to establish wholesale billing and other customer management relationships with more than 90 other operators as well as additional MVNOs across the Union instead of the 3 or 4 operators in the home market). It would only add to the costs for both users and operators (both of whom would have to overcome language barriers and who, in the case of foreign operators, would have no marketing, sales or distribution infrastructure in the market which they might be targeting). Customers may also find that network availability on the visited provider is significantly more restricted than they are accustomed to when roaming.
78. Since we consider that the implementation challenges of the 'home market provider' CPS version are themselves sufficient to exclude this option from further consideration, the even less attractive 'visited market provider' option should also be swiftly rejected.

³² We would also need to decide what happens when roaming outside of the European Union

79. There is a further reason, aside from technical implementation, why any move to 'decoupling' would take several years. As we have already explained, today's mobile tariffs reflect mobile operators' expectations of future revenues from services and subscriptions relative to the current costs of acquiring the customer (including handset subsidies). Any unanticipated change in the former – such as allowing customers to terminate existing commitments to buy roaming services from that operator – alters the viability of existing commercial agreements to which the operators are already committed. Customer agreements would become unprofitable for the operator and users would enjoy an unexpected windfall as a result of being allowed to break their contracts.
80. The Commission should think very carefully indeed before allowing customers to break existing commercial agreements, into which they freely entered, without penalty. This would mean mobile operators suddenly find that a proportion of their (higher value) customers are unprofitable at the stroke of a regulatory pen.
81. The only way to avoid this situation is to first allow operators to adjust their other prices (including handset costs) before customers can transfer their roaming agreement to another provider³³. Since existing post pay contracts typically renew after a period of 2 years, at least 2 years notice would be required before the decoupling remedy could be implemented if operators are to be allowed to avoid unrecoverable losses.
82. For all these reasons we do not see how 'decoupling' approaches could be implemented before 2014 or 2015 at the earliest. Alternative approaches would be required in the meantime, and better approaches might be appropriate after that given prospects for competition in data markets. The approach would be unlikely to benefit many users and, to the extent that it does, there are already commercial providers of decoupled roaming services in the market today. It would certainly not allow the Commission to achieve its EDA target and would impose very significant implementation costs on the industry. It would impose costs on customers too, with roaming becoming more complex and less attractive for those customers using 'decoupled' services.

Question 11: How feasible/efficient is the establishment of a spot trading market for wholesale roaming? Would this approach lead to

³³ This is akin to immediate and unexpected reductions in termination rates which also destroy the lifetime profitability of customers if mobile operators cannot reprice other tariffs at the same time.

competitive wholesale rates? How effective would this approach be in terms of achieving competitive retail rates?

83. Establishing a spot trading market for wholesale roaming would involve a fundamental restructuring of existing commercial relationships between mobile operators. This would require considerable time to implement and significant risk of disruption. Other activities –such as developing new wholesale arrangements to support new services such as VOIP over LTE or Machine-to-Machine roaming arrangements – would be likely delayed whilst the industry wrestled with this challenge.
84. It is not clear, however, that such significant implementation risks and costs could be justified, even if it were to result in a more competitive wholesale market. The shortcomings of existing price cap regulation are less acute in wholesale markets (where the services are less differentiated) than in retail markets. There is also less evidence that existing price caps have provided a focal point or have otherwise dampened competition – today’s wholesale prices for data roaming in Europe are actually significantly below the current price caps. In short, the shortcomings of price caps which might favour an alternative approach for the regulation of retail prices do not exist to the same degree with respect to the wholesale market.
85. BEREC has already identified the potential shortcomings of such arrangements³⁴. To work, the spot market would have to be sufficiently ‘thick’ to avoid buyers and sellers being able to co-ordinate (although how this could be avoided in the case of buyers and sellers who are members of the same corporate group is difficult to see). This would suggest that purchases by large groups, such as Vodafone, might be prohibited and we would instead be required to buy wholesale roaming on an individual operating company basis. This would mean that the collective purchasing arrangements which many operators have developed in recent years in order to generate economies of scale in wholesale roaming activities would have to be dismantled. Presumably it would also mean that inter-Group traffic exchanges would be prohibited and that all traffic would have to be traded through the spot market. If so, the result would be a loss of efficiency, potentially higher transactions costs and even greater fragmentation of European mobile markets.

³⁴ BEREC Report, p.20

86. BEREC also notes that wholesale roaming is not the commoditised product which is required for a spot market in it to operate effectively. The emergence of wholesale data roaming as a significant part of the overall market is particularly important in this respect. Wholesale providers of data roaming differ not only with respect to coverage (where there are indeed much more significant differences than with respect to voice services), but also with respect to quality – headline speed, average speed, network availability etc. Today, operators differ significantly in terms of the performance of their networks when carrying data traffic. Vodafone actively monitors the performance of its suppliers. Smaller operators have typically invested much less in their data networks than larger operators such as Vodafone. They are likely to see less roaming traffic steered to them as a result. This is not evidence of ‘market failure’, as some suppose, but evidence that the wholesale market is functioning properly. Forcing the creation of a spot market which artificially disguises or ignores fundamental differences between sellers may assist smaller operators, but will do nothing to improve the roaming experience of retail customers.

87. We therefore see significant challenges to the creation of a spot market whilst we do not believe that the shortcomings of other, less disruptive approaches to wholesale price regulation, are sufficient to justify this approach.

Question 12: For each of options (i) to (iii) above, please indicate whether such approaches can stimulate additional competition for roaming services. In order to achieve significant reductions in roaming prices do you consider that these ‘access-based’ approaches may need to be combined with other forms of wholesale price regulation and/or retail price regulation? Please explain?

88. For the reasons that we explained in detail to BEREC in response to their questionnaire on this topic, we do not believe that using regulation to change the terms on which MVNOs are able to provide roaming services, as envisaged by options (i) and (ii), will make any significant difference to competition in retail roaming markets (above and beyond any changes which might arise from changes to wholesale terms for mobile operators themselves).

89. In our earlier response to BEREC we said:

“...MVNOs typically have competitive strength in retailing and distribution, not in the provision of wholesale network services for which ownership of infrastructure, with all its attendant complexity and cost, is required. MVNOs are not really in a position to influence the underlying costs of providing wholesale roaming services since competition between wholesale providers already works well without the need for intermediaries who must then earn an additional margin. Vodafone established VRS [Vodafone Roaming Services] in large part because many small operators, as well as MVNOs, increasingly wish to avoid the complexity and cost associated with the wholesale international roaming market. This is a market in which fixed costs and ever greater complexity mean that scale is attractive. Vodafone has long argued that this is a market in which, notwithstanding the presence of a few niche players like Truphone, large network operators are much more likely to drive change...”

90. This would suggest that, as between option (i) and option (ii)³⁵, option (ii)³⁵ is of greater relevance. However, we believe that the result of this would simply be to effect a wealth transfer between host mobile operators and MVNOs (by improving MVNO retail margins for roaming). There would be little or no benefit for consumers³⁶. Retail prices would continue to reflect competitive constraints, so this approach would also not meet the EDA target.
91. The implications of option (iii) would depend upon the price levels at which regulated wholesale access was offered. In any and all cases, it would be wholly at odds with the existing European regulatory framework under which access obligations of this kind can only be imposed if Significant Market Power is first established. Mobile operators have invested in Europe on the basis of the current framework and it would be wholly disproportionate, as well as unlawful, to depart from it without clear justification for doing so. The Commission’s EDA target for roaming cannot provide such a justification.
92. If wholesale prices were sufficiently low to allow competition with domestic services, as the Commission proposes, then this would result in a massive redistribution of profits between MVNOs and mobile operators. Mobile operators would suffer a massive loss of domestic

³⁵ Option (i) is ‘wholesale access for MVNOs for roaming only (with MVNOs entitled to access to visited networks at regulated prices). Option (ii) is ‘an obligation on the home MNO not to charge in excess of the regulated wholesale cap to any MVNOs using its network’. Option (iii) is ‘full wholesale access for MVNOs to mobile networks in the home market for all services (not just roaming)’, Commission Paper p.9

³⁶ Much as the existing regulation has effected a wealth transfer to smaller operators

(and roaming) revenues as a result both of direct regulation and resulting cross-border arbitrage activities. If wholesale rates were set too low (and any level necessary to meet the EDA target would be too low), then mobile operators in higher cost markets would likely be unable to continue to fund their network operations and /or would have to block the provision of wholesale services. The whole future of the European industry would be fundamentally challenged and their investment incentives fundamentally altered.

93. As BEREC note, with characteristic understatement:

‘The implications of this measure however go far beyond roaming as any additional competition could revolutionise competition in domestic markets...BEREC is inclined to the view that the measure would be regarded as disproportionate, given that the problem to be solved is high roaming prices’³⁷

94. The Commission note that such an approach ‘could stimulate the emergence of a true pan-European market’³⁸. There is some truth in this if a pan-European market is conceived in terms of domestic as well as roaming price uniformity. We have argued that the European industry needs to move in this direction. But we are absolutely clear that to attempt to force such an outcome by superimposing it on today’s industry structure³⁹ would be irresponsible, disproportionate and unlawful.

Question 13: In the medium to long term, markets and technologies will possibly evolve to the point where roaming services can be provided by different competing technologies. Such developments seem to be unlikely to be sufficient to eliminate or minimize roaming problems within the next 5 years. Do respondents share this view?

95. When considered against the Commission’s assessment of what constitutes ‘roaming problems’, we broadly share this view. We have noted earlier that greater opportunity exists for disruptive innovation in data roaming, but that VOIP will ensure that this extends into the voice market. In the meantime, we have explained why restructuring of the market, with the emergence of operators with pan-European scale, is the best long term solution to the Commission’s concerns.

³⁷ BEREC Report p.20

³⁸ Commission Paper p.9

³⁹ As is beginning with the emergence of pan-European MVNOs such as Truphone to serve certain segments of the roaming market using commercially-concluded wholesale agreements

Question 14: Do respondents think that the Commission should pursue measures to accelerate these developments (eg to encourage the massive deployment of interconnected WiFi networks? What other measures could be considered? What will the impact be of the transition to an 'all IP' environment on roaming services?

96. We believe the Commission should focus on the economic incentives which firms face rather than trying to pick technological winners. An 'all IP' environment does not imply any particular commercial model.

Question 15: To what extent is the problem of inadvertent roaming still a concern for citizens' living close to the border? What measures could be taken to avoid the adverse effects of inadvertent roaming, whether by means of voluntary co-operation between operators or by means of regulatory or legislative action?

Question 16: If you are an operator, what measures (technical or otherwise) have you taken to deal with the issue of inadvertent roaming, both to prevent it happening and to compensate for the adverse effects once it has been shown to have occurred? How do you raise awareness of the problem and the potential remedies on the part of your customers?

97. Vodafone recognizes concerns about inadvertent roaming, although it affects only a very small proportion of customers – fewer than 1%⁴⁰ - in Europe. In all cases, customers already:

- will know when they switch from their home to a visited network whilst making or receiving a call because the call will drop
- have handsets or other devices which inform them of the network they are using
- will receive a push SMS whenever their handset first finds a visited foreign network (assuming that they have not opted out).
- can bar roaming, if they wish to avoid inadvertent charges and ensure that they are always using their home network

⁴⁰ Vodafone calculates those living within 1km of a national border to represent 0.5-1% of all mobile users.

98. It is important to note that inadvertent 'non-roaming' 'is equally likely to benefit customers who move across borders. That is, a similar number of customers moving across the border will continue to be connected to their 'home' network even when physically located on the other side of the border. They will continue to make calls at domestic prices whilst they are abroad. The negative consequences of inadvertent roaming are therefore to some extent compensated by the positive benefits of such 'non-roaming'.

99. As we have informed the Commission previously, Vodafone had planned some years ago to launch services which would allow Vodafone subscribers to benefit from an extended domestic calling zone which would consist of two Member States (which may or may not be geographically adjacent) provided that Vodafone owned networks in both. We considered this an attractive proposition for customers who travelled frequently between two Member States, or who lived in the border region. We have found that demand for such a product differs significantly between Member States. We introduced a version of this service for customers in the Netherlands in 2009 (allowing them to enjoy domestic rates in Belgium and Germany for an additional charge of €5 a month). Other Vodafone operating companies continue to review customer demand for such services.

Questions 17, 18, 19 and 20: Outermost regions and impact on smaller operators

100. Vodafone is not able to comment in detail on these questions (although Vodafone Spain applies the regulation to roaming in the Canaries). We have already noted that we believe that the effect of the current regulation has been to improve the retail roaming margins earned by smaller operators in outbound markets (relative both to their previous position and to larger operators).

Question 21: To what extent is the use of traffic steering accompanied by a lower retail price for the roaming customer? Where lower roaming prices are conditional upon the use of a preferred visited network, how effective is the traffic steering in practice in ensuring that the preferred network is used?

Question 22: What techniques are applied to implement traffic steering in practice? Is the roaming customer informed in advance about the steering and does he have the possibility to override it?

101. Vodafone believes that it remains an industry leader in traffic steering. More than 90% of voice traffic (and even more data traffic⁴¹) is directed to one of the Vodafone subsidiary, affiliate or partner networks which are present in all but one of the 27 Member States today.
102. The principle benefit from steering is the ability to lower our wholesale costs and provide more attractive retail roaming propositions to our customers. We lower our costs both by internalising traffic within our own network footprint and by using steering to secure more attractive wholesale terms from other operators when we have to send traffic outside our network (particularly outside the EU).
103. Customers are not informed about traffic steering in advance, but can readily see on the device which network they are roaming on at any given moment. They can manually select other networks, including non-preferred networks, if they wish. Our research suggests that the vast majority of customers consider it our responsibility, as the mobile service provider, to secure the best visited network arrangements on their behalf.

Question 23: Have you identified any significant effects on domestic prices or changes in an operators' tariff structure for domestic voice calls or other mobile services introduced after or shortly before the entry into force of the Regulation?

106. In our 2008 response to the Commission we said:

“Vodafone did not to suggest that the measures proposed in the Regulation would be likely to result in an increase in other prices, although this does not mean that other prices were not affected.....

..... A simplistic view of a ‘waterbed’ ignores the complexities of mobile markets, but the fact that the consequences of regulation are extremely difficult to discern should induce caution not disregard. In the past year, Vodafone has published the first serious empirical research by academics on the relationship between regulated reductions in mobile termination rates and other mobile prices. They show that the ‘waterbed’ clearly does exist⁴². Their analysis required examination of thousands of observations and changes of prices over

⁴¹ Reflecting Vodafone’s relative strength in 3G network coverage

⁴² See Valletti and Genakos, Vodafone Public Policy Paper No. 7, at http://www.vodafone.com/start/misc/public_policy.html

an extended time series. This is not available to us at this stage for the Roaming Regulation.”

Our view remains unchanged today.

Question 24: What, if any, has been the impact of the Regulation on reciprocal roaming arrangements between EU/EEA mobile operators and their counterparts in other third countries?

107. Although significant FX movements make comparison over recent periods difficult, Vodafone has continued to see reductions in both outbound (EU to RoW) and inbound (RoW to EU) prices for all service types. The Regulation has had no impact on these commercial arrangements.

Question 25: Have any Community-based providers of mobile roaming services negotiated agreements with third country operators concerning a reduction of wholesale roaming tariffs comparable to those set up in the Regulation?

108. []

Annex A: Report by Frontier Economics

The impact of possible roaming regulations on EU mobile markets

A PAPER PREPARED FOR VODAFONE

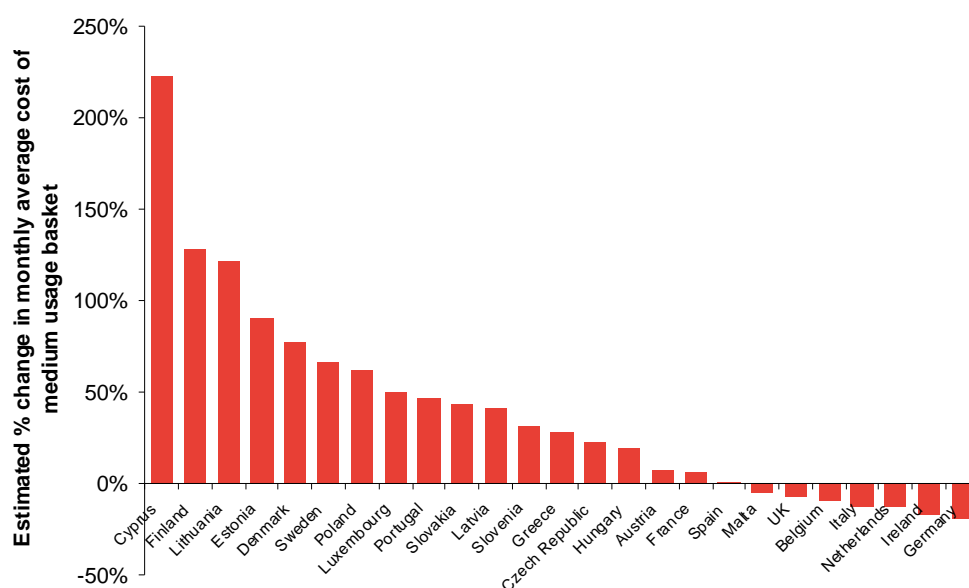
This note assesses the potential impact of possible regulatory measures to reduce intra-EU roaming charges by tying roaming charges to domestic mobile prices. It concludes that the Commission's draft proposals could have a significantly detrimental effect on both mobile phone operators and consumers.

The Commission is reviewing the existing Eurotariff regulation and is seeking comments on a range of possible other regulatory measures it could take to reduce the gap between roaming charges and charges for non-roaming domestic calls. Among these, this note assesses the impact of linking roaming prices to domestic mobile prices and reductions in the price cap applied to wholesale voice roaming.

The Commission's Home Pricing Principle

Before introducing the Eurotariff regulation, the Commission considered an alternative possible model of regulation, the Home Pricing Principle (HPP). This sought to tie explicitly the roaming tariffs offered by an operator to its domestic (non-roaming) call prices. Had this been introduced, it would have meant that a consumer could have taken his non-roaming charges abroad and so, when roaming in another EU Member State, would only have paid charges for calls equal to those he/she pays when using his/her mobile in the home country. We analysed the likely impact of the Commission's proposal in a report prepared for Vodafone in 2006. This demonstrated that under the reasonable assumption that it would be very difficult to prevent arbitrage, the introduction of HPP would lead to consumers switching to take mobile phone services from the Member State where mobile services were cheapest to operate (i.e., where prices were lowest). This would then result in an equalisation of all mobile prices in the EU: meaning very significant price increases in a number of Member States. **Figure 1**, below, illustrates this impact on domestic mobile prices by Member State.

Figure 1. Change in domestic mobile prices in each Member State, from the implementation of the HPP⁴³



Source: Frontier Economics, "Impact of the proposed EC regulation on mobile international roaming services; a report prepared for Vodafone", (Figure 5) May 2006

In its latest consultation document on roaming, the Commission is seeking comment on a new form of regulation similar to this HPP. However, in this latest proposal we assume that mobile operators can charge a (small) mark-up for roaming prices over and above domestic prices in order to cover the additional costs of roaming.⁴⁴ This paper examines the potential impact of this new proposed regulation, alongside an expected reduction in the price cap applied to wholesale voice roaming services.

In assessing the impact of these proposals, we assume that the maximum allowed mark-up to domestic retail tariffs will be set at €0.06 (six euro cents) per minute for outgoing calls and that the maximum charge for wholesale voice international roaming will be reduced to a uniform €0.08 (eight euro cents) per minute. These figures are used for illustration purposes only, and by using these figures we are not implying that we believe them to be appropriate within the context of any proposed regulation.⁴⁵ We first discuss the impact of a significant reduction in the uniform wholesale roaming charge.

⁴³ A full description of the reasons for this impact can be found in our 2006 report for Vodafone, "Impact of the proposed EC regulation on mobile international roaming services; a report prepared for Vodafone"

⁴⁴ The EC's original HPP proposal did not allow operators to charge consumers for receiving a call when roaming. This is because mobile operators in Europe do not charge customers for receiving a call when they are in their home market. In contrast, under the possible new regulation, the EC will also allow operators to charge a mark-up on retail charges for receiving a call. In effect, this means operators will be able to charge their customers for receiving a call when roaming.

⁴⁵ In this paper we do not consider the impact of also applying a mark-up to the charges for receiving calls when roaming. However, this does not affect the conclusions of our analysis.

Reductions in the wholesale price cap could lead to a major connectivity breakdown, especially when combined with retail regulation

It is well accepted that the cost of providing mobile services varies across Member States. For example, cost differences can arise due to differences in the topography between Member States, as well as differences in population distribution and general labour costs. Applying a common maximum wholesale roaming charge across all Member States therefore means this service will not be cost oriented in many Member States. Applying a wholesale cap of €0.08 – as opposed to the current level of €0.22 – also increases the likelihood that a number of operators in higher cost Member States will now find that they cannot cover their costs of providing wholesale roaming services.

Any operator who cannot offer wholesale roaming services without making a loss on the service could be expected to choose not to offer such services. Therefore, unless the common wholesale charge is set equal to the costs incurred by operators in the highest cost country, there will be some connectivity breakdown between Member States.⁴⁶ A common wholesale price cap below this level will not allow operators in at least some Member States to recover the costs they incur in providing wholesale roaming services to operators in other Member States.

This situation would be exacerbated by the possible retail roaming regulation linking roaming prices to domestic prices. This is because, absent restrictions on usage, the retail proposal would lead to consumers in any countries where retail prices are currently more than six cents above the rates in the cheapest country having an incentive to take a mobile service from that lowest cost country.⁴⁷ Operators in this group of higher cost countries will, as a result, lose all retail traffic and only receive revenues from wholesale roaming services. However, the wholesale roaming service would itself be loss making. Clearly, this position is not sustainable. Operators will either go out of business or have to put in restrictions to stop roaming from certain low cost countries. This is the only way they can limit their loss of revenue in both the wholesale roaming and the retail market.

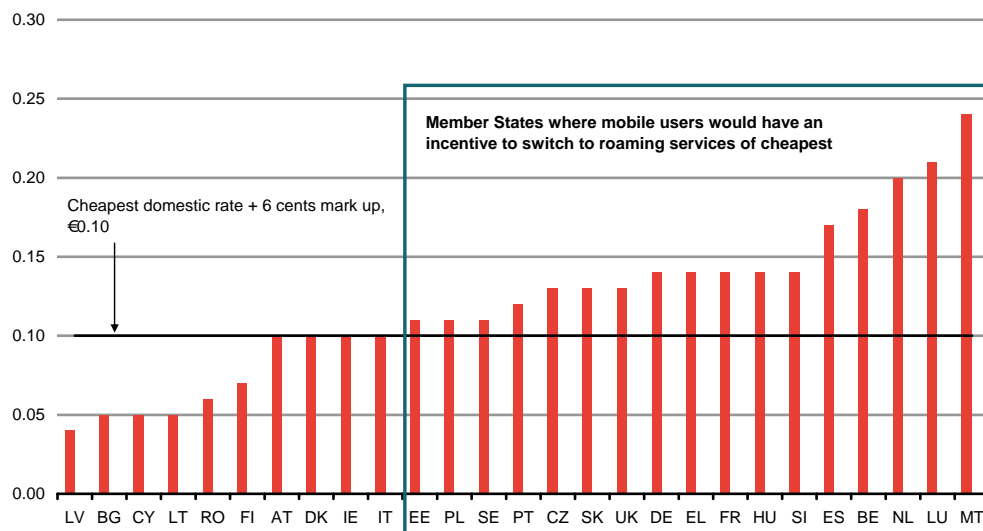
This is not just a theoretical possibility. **Figure 2** shows that consumers in 17 Member States (accounting for over 430 million mobile connections) would have an incentive to switch under this regulation.

Applying a mark-up to receiving calls is equivalent to increasing the mark-up for making outgoing calls. This is because it will increase the cost to a consumer in a high cost country of taking a roaming service (as that customer would then pay to receive calls, compared to a situation where the customer would receive calls free of charge if he or she continued to take a mobile service from a domestic operator).

⁴⁶ In withdrawing from a wholesale roaming arrangement with another Member State, the operator in the high cost country will also take into account any retail revenues it earns from its customers being able to roam in the other country.

⁴⁷ This is based on our assumption that the EC imposes a maximum mark-up of 6 cents on retail domestic prices. Generally, as the maximum mark-up is reduced, the incentives for arbitrage will increase.

Figure 2: Average price per minute for mobile services in each EU Member State, 2008 (Euros)

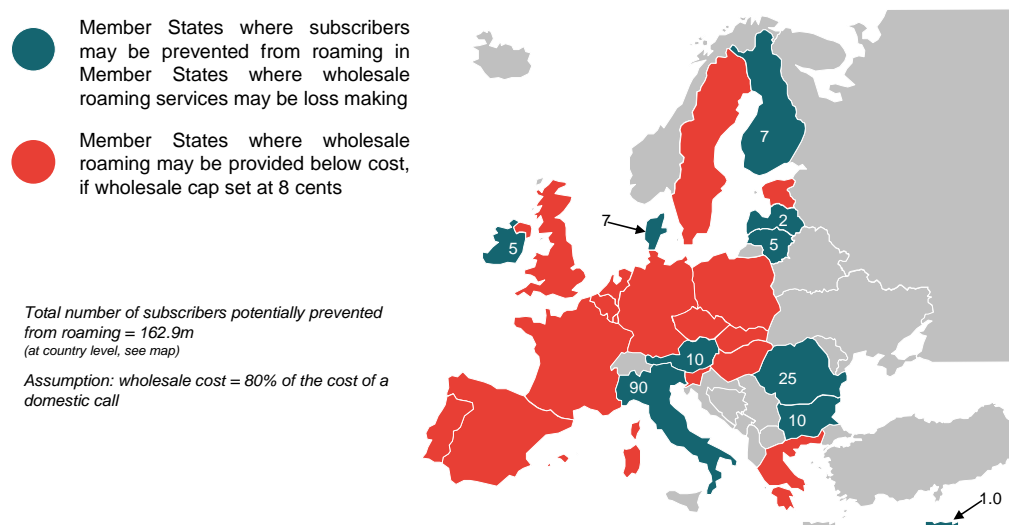


Source: EU 15th Implementation Report, Frontier analysis

Further, if we assume that the wholesale cost of offering a roaming call is 80% of the cost of a domestic retail call in the country concerned and that, on average, operators in each Member State make zero economic profit (consistent with domestic mobile markets being effectively competitive and domestic retail call prices being equal to the cost of providing these calls) we also see that in these 17 Member States, wholesale roaming services would be loss making under a maximum wholesale price cap of €0.08.

Figure 3 shows the Member States and number of customers who would be affected by this connectivity breakdown. Assuming operators in the high cost countries reacted by preventing roaming by customers from lower cost countries, over 160 million consumers in countries such as Italy, Romania, Austria and Bulgaria would have significantly reduced abilities to roam in other EU Member States.

Figure 3. Connectivity breakdown in EU roaming services under a uniform wholesale price cap at €0.08



Source: Frontier Economics

With a retail regulation linking roaming prices to domestic mobile prices, the complete prevention of such a connectivity breakdown would require:

- the setting of country-specific wholesale price caps, thus giving (efficient) operators in each Member State the opportunity to recover the costs they incur in providing roaming services; or;
- the setting of a single wholesale price cap, based on the costs incurred by operators in the highest cost country.⁴⁸

The second of these options could potentially frustrate the Commission’s overall objectives to reduce roaming prices. This is because operators in lower cost Member States with low domestic prices would now find retail roaming to be a loss making activity. In order to avoid this they would either have to block roaming by their retail customers (producing another connectivity breakdown) or raise domestic prices to a level which allowed their roaming prices to cover their wholesale costs. This ‘rebalancing’ effect is considered further below. In the remainder of this note we therefore focus on the first of these options, and demonstrate that even with country-specific wholesale charges, the proposed retail regulation could still lead to significant changes in European mobile markets, most notably price increases across some Member States.⁴⁹

⁴⁸ The potential scale of the problem could also be reduced by amending the terms of the retail price regulation to limit the incentives for customers to switch to a mobile service offered by an operator in a lower cost country. However, this would still mean that wholesale roaming services may be provided below cost in some Member States.

⁴⁹ This impact would also occur if a common wholesale rate was applied at the level of the costs incurred by operators in the highest cost country. However, the scale of the changes in domestic rates described below would be dependent on the level of the wholesale cap.

Even with amended wholesale regulation, there will still be a significant impact on consumers in many countries

With country-specific wholesale roaming charges, operators in 'high cost' countries will no longer make a loss on wholesale roaming services. However, consumers in these countries will still have an incentive to switch and take a service from an operator in a low cost country to make domestic calls in their country of origin (the high cost country), so long as the gap between the domestic charges in these two countries is more than the maximum mark-up allowed for roaming services under the regulation (assumed in our example to be six cents).

However, now the operators in the low cost country will make a loss on retail roaming services offered to consumers from high cost countries. This is because the operator in the low cost country must pay a wholesale charge to the operator in the high cost country which is based on the unit costs in the high cost country. This is illustrated below by looking at the relationship between Latvia and Malta, the Member States with the lowest and highest domestic mobile prices in the EU.

Table 1. The impact of roaming between Malta and Latvia under country-specific wholesale caps⁵⁰

All figures in euro cents per minute	Latvia	Malta
Average domestic retail price	4	24
Price paid by consumers switching to lowest cost country <i>(Mark up = 6 cents)</i>	4 <i>(Customers do not switch)</i>	10 <i>(Customers switch to a Latvian service)</i>
Cost of wholesale roaming service <i>(80% of domestic retail price⁵¹)</i>		19.2
Wholesale price paid to operator in high cost country for roaming traffic <i>(Assume cost oriented price control)</i>	19.2	
Loss on roaming service offered to customers living in high cost country	9.2 <i>(19.2 – 10)</i>	

Source: Frontier Economics

The operator in the low cost country must recover this loss. It cannot do so by raising roaming prices in isolation and therefore will raise its domestic prices above cost. Given the link between domestic and roaming prices, this will also lead to an increase in the retail roaming rate charged by that operator.⁵² For example, using the assumptions from **Table 1**, the operators in Latvia must increase domestic prices above cost, so that they can recover the 9.2 cent per call loss they make when providing the roaming service to customers in Malta.⁵³ Assuming that the volume of calls made by Latvian and Maltese customers is equal (and in the absence of any elasticity effect), the Latvian operator would increase its domestic prices by 4.6 cents. In turn, this would increase the price paid by roaming customers to 14.6 cents (i.e., the new domestic price in Latvia – 8.6 cents – plus the six cent roaming mark-up). The remaining per call loss on the roaming service (4.6 cents, i.e., 19.2 – 14.6) would therefore be covered by the

⁵⁰ In reality, the operator in the low cost country is likely to face higher retail costs to serve roaming customers than it does when serving its own domestic customers. The operator will also need to recover these higher retail costs by increasing its domestic retail prices. For example, we assume that the Latvian operator will incur additional retail costs to serve customers resident in Malta equal to the retail costs faced by domestic operators in Malta.

⁵¹ Assuming that in every country wholesale roaming costs are equal to 80% of the average domestic retail call price would imply that country-specific wholesale roaming charges in the EU would vary between 19.2 cents (in Malta) and 3.2 cents (in Latvia).

⁵² This price will still be below the domestic price a roaming consumer would face if he continued to take a mobile service from an operator in his home market. To reduce the loss of retail customers, the operators in the home market would be forced to reduce tariffs to match those available to consumers through roaming.

⁵³ The operator in Latvia will also need to increase prices to recover the additional retail costs it faces when providing services to customers in Malta.

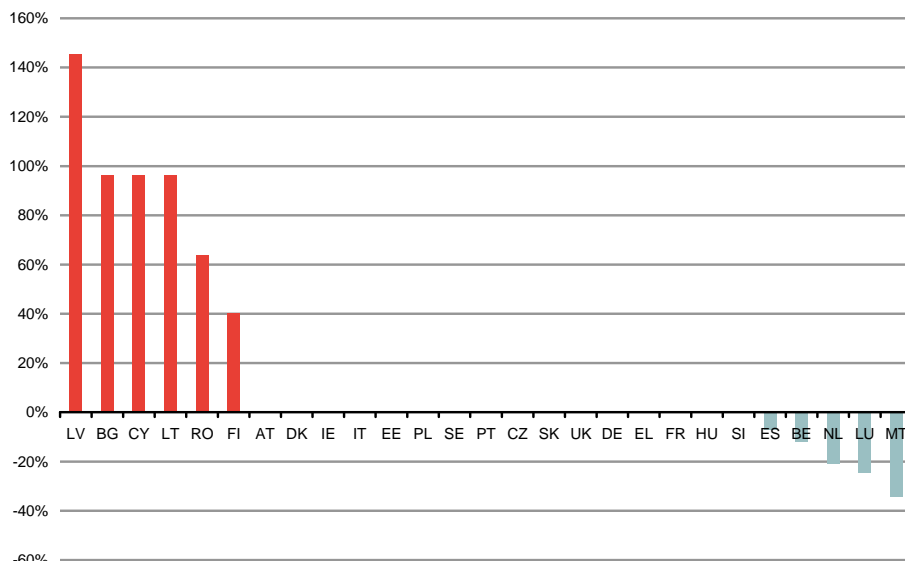
profits made by the Latvian operators on offering call services to their own customers.

This arbitrage will clearly harm consumers in low cost countries by driving up the price of domestic mobile services, whilst reducing prices faced by consumers in high cost countries. This process will continue until there are no more opportunities for arbitrage between Member States. These opportunities will only cease when the differences between domestic rates faced by European consumers for mobile services are no greater than the regulated mark-up.

The chart below shows the results of this arbitrage on domestic mobile prices in EU Member States. With an assumed maximum mark-up of 6 euro cents, this demonstrates that 50 million customers across 6 countries will face higher mobile prices as a result of this regulation. This is also shown graphically below.⁵⁴

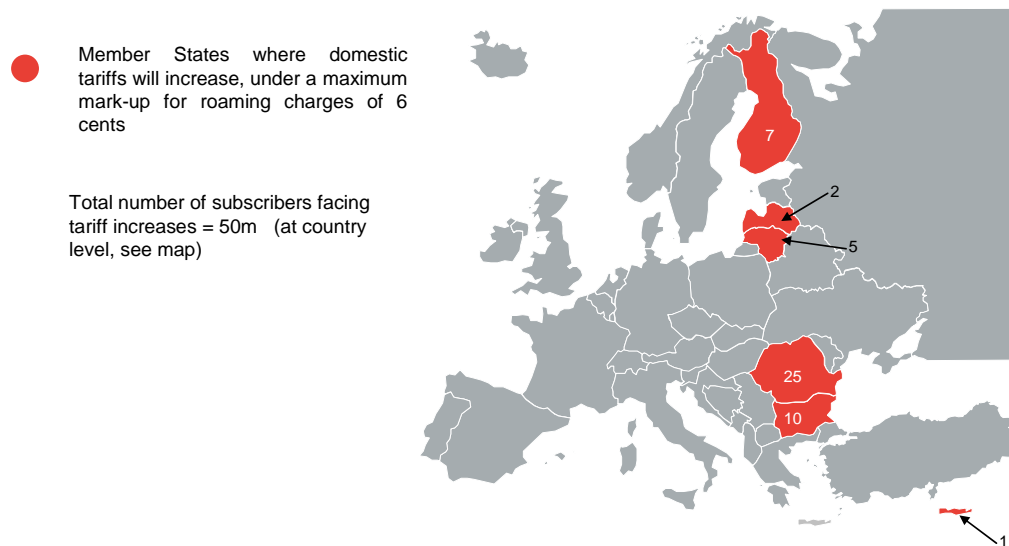
⁵⁴ The annexe to this paper describes the further assumptions we have made in deriving the estimated impact of the regulation.

Figure 4. Change in domestic mobile prices in each Member State under a roaming mark-up of 6 cents



Source: Frontier Economics analysis

Figure 5. European consumers affected by increases in mobile prices under a roaming mark-up of 6 cents



Source: Frontier Economics analysis

Conclusions

In this paper we have found that:

- The EC's proposals to link intra-EU retail roaming charges to domestic mobile prices will, if based on a common wholesale rate which does not allow operators in high cost countries to recover their costs, lead to a break down of connectivity across Europe. Under a capped wholesale roaming rate of eight euro cents, this could reduce the opportunities for over 160 million customers in 10 countries to roam in other Member States.
- To prevent this connectivity breakdown, the retail roaming regulation would either need to be based on a common wholesale rate set such that it enabled operators in the highest cost country to recover the costs of the wholesale roaming service, or based on country-specific cost oriented wholesale roaming charges.
- However, even under these cases, and dependent on the level of the allowed mark-up and the differences in costs between Member States, the retail regulation could lead to domestic mobile prices increasing for a large number of EU mobile users, especially in lower GDP Central and Eastern European Member States.
- The scale of the impact on domestic prices will depend on the size of the maximum allowed mark-up on domestic rates: the lower the mark-up, the greater the increase in domestic tariffs in some Member States. With a mark-up of six euro cents, we estimate that 50 million mobile users could see an increase in domestic mobile prices. In the most affected country, this could equate to a 145% increase in domestic prices.

Annexe – Modelling and data assumptions

This annexe reports in turn the modelling assumptions, data sources and modelling approach we have used to derive the results presented in this paper.

Assumptions

Table 1 summarises the assumptions of the model. These concern the behaviours of consumers and cost and price structures of the mobile operators.

Table 2. Assumptions

Assumptions	
Mobile user's behaviour	<p>Price elasticity of demand in each country is null (i.e., callers do not react to as reduction in price by increasing call volumes).⁵⁵</p> <p>No restrictions on arbitrage - assume all subscribers are rational and would choose the cheapest service.</p>
Mobile operators	<p>Initial retail prices set equal to costs in all countries.</p> <p>Wholesale cost of a roaming call in Country X equals 80% of the average domestic call price in that country.</p> <p>The retail costs faced by an operator in a low cost country offering roaming services to customers in a high cost country are equal to the retail costs incurred by operators in the high cost country.</p> <p>Wholesale roaming charge either capped at €0.08 in all countries or at 80% of the price of a retail domestic call (as a proxy for cost in each country).</p>

Data sources

Table 2 lists our sources for each variable of our model. Note that Frontier has not undertaken a full review of the data provided by these sources for this piece of work. The dataset we created covers the EC member states only. (It excludes countries from the EEA, who also follow the EC roaming rules).

⁵⁵ Including an elasticity effect in the model would be likely to increase the required price rises in low cost countries. This is because the volume of roaming traffic over which the operators in low cost countries lose money would increase, thus requiring the operators to further increase domestic prices. The results set out above should therefore be considered conservative.

Table 3. Data sources

	Source
Volume (Minutes of Use, MoU)	<p>Telegeography, MoU by operator in each country, December 2008 data. We calculated a weighted average MoU (using subscribers as weights). For some countries, only the MoU of one operator was reported. We assumed this was representative of the market.</p> <p>For the average MoU of Cyprus, Estonia, Luxembourg, Malta, Romania and Slovakia (not reported in Telegeography), we used the data provided in “European Mobile Industry Observatory 2009” report by GSMA and ATKEARNEY.</p> <p>http://gsma.weccg.com/meda/web/downloads/European-Mobile-Observatory-2009.pdf</p>
Subscribers	<p>Both datasets refer to 2008 data.</p> <p>Telegeography data for 2008 for all countries but Malta; ITU newslog for Malta: http://www.itu.int/ITU-D/ict/newslog/Malta+End+September+With+A+Mobile+Subscriber+Base+Of+381955.aspx</p>
Average retail domestic rates	<p>EC’s 15th Implementation Report, 2010 (Part 2, Figure 5)</p> <p>Data relates to 2008</p>

Modelling approach

Our model follows an iterative approach to determine the equilibrium prices in all EU Member States under the proposed retail regulation. At the equilibrium prices, no consumer is willing to switch to the roaming services of an operator based abroad.

The model approach is described below.

Stage 1: Arbitrage between the dearest and cheapest countries in EC

Initially our model assumes a world made of the two countries with the most expensive and cheapest domestic rate among the EC countries – Malta and Latvia respectively. As the gap in domestic tariffs between these two Member States is greater than the assumed roaming mark-up, all customers of Maltese operators would be better off taking a service from a Latvian operator and using this to roam in Malta.

The model then seeks the necessary increase in domestic rates in Latvia to recover its losses from providing roaming services to customers living in Malta. These losses arise because for the Latvian operator, the cost of providing a roaming service in Malta is greater than the retail revenues it earns from providing the roaming service. (That is, the retail roaming regulation requires operators in low cost countries to provide roaming services below cost). Domestic (and hence roaming) rates for the Latvian operator must therefore increase such that overall, it earns zero economic profit.

Stage 2: Arbitrage between the dearest and cheapest and 2nd cheapest country

If the new domestic rate in Latvia remains the cheapest, the model seeks to find the necessary additional increase in domestic rates in Latvia to recover also the losses from providing roaming services to customers living in the second most expensive country (Luxembourg in our panel), as these customers would also switch to the cheapest country. This calculation follows that set out in Stage 1, above.

Stage n: Arbitrage between a zone of countries until equilibrium prices are reached

The process described above in stages 1 and 2 continues as customers from other high cost countries also switch to use a roaming service offered by an operator in the lowest cost country.

At some point, prices in the lowest cost country increase to the same level as domestic prices in the next lowest cost country. At this point, consumers from high cost countries engaging in arbitrage would be willing to switch to either of the low cost countries. The model then calculates the price increases required in the group of low cost countries to offset the losses operators in these countries face from providing roaming to customers in high cost countries. To do this, the model assumes that prices in the group of low cost countries will be equal.⁵⁶

⁵⁶ All other things the same, as more low cost countries are affected, the required price increase becomes less. This is because there are more domestic calls over which the losses from roaming services can be recovered.

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