Evaluating the European Commission's proposed international roaming regulation

A REPORT PREPARED FOR VODAFONE

March 2006

Evaluating the European Commission's proposed international roaming regulation

1 Introduction and key conclusions

The European Commission has announced that it plans to seek approval from the European Parliament for a new EU regulation on international roaming charges (the 'roaming regulation' hereafter). If the Commission's proposal is accepted by the European Parliament, then the new roaming regulation could come into force in the latter part of 2007.

The proposed new regulation is apparently intended to address the concern that the prices paid by consumers for using their mobile phones whilst abroad are 'unreasonably high' and may 'reduce the cross-border use of mobile phones'.[1] The Commission is currently consulting with interested parties on the scope, form, and potential impact of the regulation. It is unclear what options are actively under consideration, since the Commission has yet to provide details on what it has in mind.[2] However, it is clear from the Commission's consultation questions that price regulation at the retail and/or the wholesale level is under consideration.

A policy decision to regulate international roaming charges could have far-reaching consequences for the operation of the mobile market in the EU. It is therefore essential that any proposed roaming regulation should be subject to a rigorous impact assessment in order to evaluate its likely costs and benefits. Section 2 of this report sets out the appropriate framework for the required impact assessment, drawing on the EC's own Impact Assessment Guidelines.

Following this, we discuss some of the potential economic consequences that might result from regulating international roaming charges that the Commission should take into account in considering whether to adopt any measures. Since the scope and form of the proposed roaming regulation is unclear, section 3 considers the potential impact of a regulatory-induced reduction in retail or wholesale international roaming charges, irrespective of the precise way in which this is implemented. Following this, section 4 considers the potential economic impact of three specific options that the Commission might consider for reducing the cost to consumers of international roaming, namely: (i) a price cap on an MNOs average wholesale price of international roaming; (ii) a broad price cap on an MNO's average retail price of international roaming; and (iii) a requirement that an MNO's retail international roaming prices be tied to its retail prices for domestic and international calls.

---

1 See the Commission's website on international roaming tariffs at http://europe.eu.int/information_society/activities/roaming/internal_market/consultation/index_en.htm.

2 Whilst Commissioner Reding stated in a speech to the ERG on 8 February 2006 that the new Regulation will not prescribe a specific 'ideal' price of international roaming, but would "*require that international roaming charges are not higher than national roaming charges*", this is not reflected in the Commission's consultation questions.

Key conclusions

The key conclusions of this paper are as follows:

- It is essential that the Commission carries out a detailed impact assessment of any proposed measures aimed at reducing international roaming prices, in view of the novel nature of the proposed regulation, and the clear potential for unintended negative impacts.
- The impact assessment should be based on a rigorous analysis of the operation of mobile markets, and should take into account the extensive body of existing knowledge and evidence that NRAs, competition authorities, and academic economists have developed in relation to mobile markets.
- The impact assessment should be conducted in accordance with the Commission's own Impact Assessment Guidelines. Accordingly, the Commission should ensure that:
  - the problem to be addressed is fully articulated, and an analysis of the underlying causes is carried out;
  - an appropriate range of possible policy options is fully considered, including the option of 'no EU action';
  - all of the potential impacts, both positive and negative, of alternative policy options are identified; and
  - a proper cost-benefit appraisal is undertaken in order to evaluate alternative policy options.
- The Commission should carefully consider alternative forms of economic regulation as part of its impact assessment to evaluate their merits and demerits. This will require a proper assessment of how alternative forms of economic regulation are likely to affect the incentives and conduct of industry participants, taking into account the nature of the mobile market in the EU.
- A regulatory-induced reduction in wholesale or retail international roaming charges could give rise to:
  - arbitrage opportunities for consumers that might result in a radical restructuring of domestic and international mobile tariffs throughout the EU; and
  - arbitrage opportunities for operators in the wholesale market that might result in a significant change in market structures.
- These examples illustrate how a regulatory measure aimed at reducing international roaming prices could have unintended and far-reaching consequences for the operation of mobile markets in the EU. This underlines the importance of a rigorous impact assessment before any regulation is decided upon and implemented.
- A high degree of internalisation of international roaming traffic with MNO groups and alliances would call into question the effectiveness of a regulation aimed at reducing wholesale international roaming prices.

- A cap on retail roaming prices, or a remedy that ties the level of retail prices for international roaming services to the level of retail prices for national or international call services can both be expected to have knock-on effects on other mobile prices – i.e. the prices of subscription, handset subsidies and/or the prices of domestic and international calls. This is a further illustration of the key point that a regulation aimed at reducing the cost of international roaming to consumers is likely to have a number of unintended consequences which should be taken into account in the Commission's impact assessment.
- There should be no presumption that a cap on retail roaming prices or a tying remedy would have the same impacts, or that either would necessarily improve consumer or total welfare. In competitive mobile markets, it is possible that either regulatory option might reduce total welfare, as pricing structures are likely to be efficient when competition for subscribers is effective. Accordingly, a regulatory restriction on the retail pricing freedom of MNOs would distort the competitive outcome, and can be expected to reduce total welfare, and perhaps also consumer welfare.

2 Framework for impact assessment

It is essential to carry out a rigorous impact assessment in order to identify and evaluate the likely costs and benefits of any proposed regulatory intervention aimed at controlling international roaming charges. A rigorous impact assessment will ensure that the Commission properly considers all of the potential consequences of regulating international roaming charges, both intended and unintended, and will enable the Commission to evaluate this policy option against other possible alternatives.

The importance of carrying out an impact assessment is underlined in the EC's own Impact Assessment Guidelines (IAGs), which state that:

> "*Assessing, in a systematic manner, potential impacts of policy options is* ***always*** *desirable when preparing a proposal.*"[3]

It is particularly important that the Commission should carry out a proper impact assessment in relation to the regulation of international roaming charges, given the novelty of the proposal. Indeed, the IAGs state that the impact assessment will usually have to be particularly developed for 'new' regulatory proposals i.e. for proposed actions in an area that was previously left to Member States, or in an entirely new area.[4]

2.1 THE IMPACT ASSESSMENT PROCESS

In this section, we draw on the EC's IAGs to set out the assessment criteria and key analytical steps that should be applied by the Commission in relation to any proposed intervention to regulate international roaming charges.

2.1.1 Assessment criteria

The IAGs identify three key assessment criteria for the evaluation of policy options:

- **effectiveness** - i.e. the extent to which options can be expected to achieve the objectives of the proposal;
- **efficiency –** i.e. the extent to which objectives can be achieved for a given level of resource and at least cost (cost-effectiveness); and
- **consistency** – i.e. the extent to which options are likely to limit trade-offs across the economic, social and environmental domain (e.g. between different social and economic groups, regions). This would include an assessment of the positive and negative impacts that a regulation of international roaming charges could have in general economic and social terms, and on industry players and consumers.

---

3 European Commission SEC(2005) 791. "Impact Assessment Guidelines", page 6. Emphasis added.

4 EC IAG's, page 8.

2.1.2 Key analytical steps

The IAGs states that the following six key analytical steps should be used to assess the impact of policy proposals:

- identify the problem;
- define the objectives;
- develop main policy options;
- analyse their impacts;
- compare the options; and
- outline policy monitoring and evaluation.

We briefly discuss each of these steps below, and comment on their implications in the context of the proposed roaming regulation where appropriate.

Identify the problem

The first step in an impact assessment is to identify the problem to be addressed. According to the EC's IAGs, this involves:

- delineating the extent of the problem;
- identifying the key players and affected populations;
- establishing the causes;
- assessing how the problem would evolve if the current EU approach were to continue; and
- assessing whether the EU has the right to act.

The importance of a robust, fact-based identification of the problem and its underlying causes to effective policy-making is self-evident. This is a crucial element in the impact assessment, since it also serves as the basis for understanding the potential impact of any proposed remedy. The Commission appears to be concerned that the cost of international roaming to consumers is too high, and that this may reduce the cross-border use of mobile phones. However, the Commission has yet to provide any analysis of the underlying reason for the perceived 'high prices' for roaming. For example, it is unclear whether the Commission is concerned with retail or wholesale charges.

Roaming prices, like the prices of other mobile services, are determined as part of a complex and dynamic competitive process. Accordingly, the Commission should base its analysis of the manner in which retail international roaming prices are set on a proper understanding of the operation of the mobile market in the EU. Related issues have been examined extensively by National Regulatory Authorities in recent years, for example in relation to the Framework Regulation as well as investigations into fixed to mobile call termination charges, and has also been the subject of a substantial body of academic research by economists.

This body of knowledge is highly relevant to the Commission's deliberations and should be fully taken into account.

Define the objectives

The importance of defining the objectives of any proposed policy is also self-evident. Without a clear understanding of what a policy is supposed to achieve, it is impossible to identify and evaluate possible courses of action. According to the EC's IAGs, defining the objectives of a policy involves:

- setting objectives that correspond to the problem and its root causes;
- establishing objectives at a number of levels so as to set out the 'intervention logic'; and
- ensuring that the objectives are consistent with EU policies and strategies.

The Commission's objective appears to be to reduce retail roaming charges, and to stimulate increased cross-border use of mobile phones.

Develop main policy options

Once the objectives of the policy have been properly defined, it is then necessary to identify the most appropriate policy options and delivery mechanisms for achieving those objectives. The IAGs set out the following steps for developing policy options:

- identify policy options to meet the objectives;
- consider the most appropriate delivery mechanisms (including both regulatory and non-regulatory approaches);
- screen the alternative options against the criteria of effectiveness, efficiency and consistency; and
- draw up a shortlist of potentially valid options for further analysis.

The IAGs specifically state that:

> *"The option of '**no EU action**' should always be considered, except in cases where there is an obligation to act laid down by the Treaties. It is also advisable to consider, where relevant, including an **alternative approach to 'classical' forms of regulation**, unless a decision by the Commission has already ruled this out."*[5].

The IAGs also state that the aim of the initial screening of options is to arrive at a list of (usually three or four) the most promising options, one of which should be the 'no EU action' option.

---

5 EC IAGs, page 24. Emphasis in original.

Analyse the impacts of policy options

The IAGs state that an impact analysis should be conducted for each of the most relevant policy options, including the 'no EU action' option. This involves the following steps:

- identification of the (direct and indirect) economic, social and environmental impacts and how they occur;
- identification of who is affected, including those outside the EU, and in what way;
- assessment of the impact in qualitative, quantitative, and monetary terms where possible and appropriate; and
- consideration of the risks and uncertainties in the policy choices, including obstacles to compliance.

The purpose of this assessment is to provide sufficient and clear information on the likely impact of the various policy options that can be used as a basis to evaluate and compare the options. The IAGs state that the analysis of impacts should consider the intended and the unintended consequences of each policy option. In addition, the IAGs emphasise that:

> *"…the credibility of an IA* [impact assessment] *depends to a large extent on providing results that are based on reliable data and robust analysis, and which are transparent and understandable to non-specialists."*[6]

As noted above, there is a significant existing body of evidence and expertise in relation to the operation of mobile markets that is highly relevant to the robust assessment of any proposed regulation aimed at controlling international roaming prices.

Compare the options

According to the IAGs, the comparison of options should involve the following steps:

- weigh up the positive and the negative impacts of each option by area (i.e. economic, environmental and social impact);
- aggregate the results to obtain a net impact where feasible; and
- identify a preferred option, where possible and appropriate.

The IAGs emphasise that although the final policy choice is always left to the College of Commissioners, it is important as an aid to decision making that:

> *"…the results and the alternative options considered - in all cases – need to be presented in a transparent and understandable way to provide the basis for a political discussion on the relative advantages and disadvantages of the relevant options."*[7]

---

6 EC IAGs, page 26.

7 EC IAGs, page 44. Emphasis in original.

Outline policy monitoring and evaluation

The final step identified in the IAGs relates to the arrangements for monitoring and evaluation. This is required in order to assess whether the policy has been implemented, and is achieving it objectives. According to the IAGs, this involves the following steps: identify core progress indicators for the key objective for the proposed policy; provide a broad outline of possible monitoring arrangements; and provide a broad outline of possible evaluation objectives.

2.2 PREVIOUS IMPACT ASSESSMENTS BY THE COMMISSION

The Commission has carried out a large number of detailed impact assessments concerning a variety of policy proposals in recent years. In many cases, this has involved a very substantial analysis of policy options.

The impact assessment in relation to the proposals to reduce the climate change impact of aviation illustrates the application of the methodology set in the IAG by the Commission in the context of a particular market sector.[8] This impact assessment has the following key features:

- a detailed consideration of the problem to be addressed, and the underlying causes, drawing extensively on previous relevant studies;
- a clear statement of the objectives of policy intervention;
- a full review of all of the policy options that were considered by the Commission;
- a clear statement of the options selected for detailed assessment, and a clear explanation for why other options were rejected;
- detailed quantitative and qualitative analysis of the impacts of the preferred options. This includes an assessment of the direct and indirect economic impacts on the aviation sector and on consumers, and attempts to take into account the nature of competition in the aviation sector; and
- a comparative evaluation of the advantages and disadvantages of the preferred options.

A similarly detailed analysis would be required to assess proposals to reduce the cost to consumers of international roaming, given the complexity and importance of the mobile market.

2.3 SUMMARY

This section has outlined the impact assessment process that the Commission would be required to carry out in order to conform to its own guidelines. The key points to note are as follows:

---

8 Commission Staff Working Document , SEC (2005) 1184.

- an impact assessment is essential given the novel nature of the proposed regulation, and the clear potential for unintended negative impacts;
- the impact assessment should be based on a rigorous analysis of the operation of mobile markets, and should take the extensive body of existing knowledge and evidence into account;
- the Commission should ensure that the problem to be addressed is fully articulated, and that an analysis of the underlying cause is carried out;
- the Commission should ensure that an appropriate range of possible policy options is fully considered, including the option of 'no EU action';
- the Commission should ensure that all of the potential impacts, both positive and negative, of alternative policy options are identified;
- the Commission should ensure that a proper cost benefit appraisal is undertaken in order to evaluate alternative policy options, including the option of 'no EU action'; and
- the Commission should ensure that relevant stakeholders are fully consulted and have the opportunity to comment on the Commission's analysis and conclusions.

3 Potential impact of a regulated reduction in the price of roaming

The previous section highlighted the importance of assessing the likely impacts of introducing a regulation to control the cost to consumers of international roaming. In order to do this, it would be necessary to have a clear idea of the scope and form of the proposed regulation. However, little is currently known about the proposed regulation.

In this section we discuss two possible impacts of a regulatory-induced reduction in the price of international roaming at either the retail or the wholesale level, irrespective of the precise way in which this is implemented. We first consider the possibility that a regulated reduction in the price of retail international roaming calls could give rise to consumer arbitrage opportunities that might result in a radical restructuring of mobile tariffs throughout the EU. Following this, we explain that a regulated reduction in the price of retail international roaming calls could result in a downward adjustment of wholesale international roaming prices, and hence indirectly give rise to operator arbitrage opportunities in the wholesale market that might result in a significant change in market structures. Similar operator arbitrage opportunities could also arise if regulation were applied at the wholesale level to directly reduce the wholesale price of international roaming.

These examples illustrate how a regulatory measure aimed at reducing the cost of international roaming to consumers (applied at either the retail or the wholesale level) could have unintended and far-reaching consequences for the operation of mobile markets in the EU. This underlines the importance of a rigorous impact assessment before any regulation is implemented.

3.1 CONSUMER ARBITRAGE BETWEEN NATIONAL AND INTERNATIONAL MOBILE CALLS

Retail international roaming prices are currently set at a level that is significantly above national and international call prices. A regulated reduction in retail international roaming prices would reduce or reverse the gap between international roaming prices and national and international call prices. This could give rise to an opportunity for consumers to avoid international call charges by appearing to be roamers in their own countries.

Consider, for example, a subscriber of a Spanish MNO who wishes to make a mobile call to the UK from Spain. If this subscriber makes this call using the service provided by his local Spanish MNO, then he would pay the Spanish MNO's domestic charges for an international call from Spain to the UK. An alternative possibility that the Spanish subscriber might consider is to subscribe to a UK MNO and make the call to the UK using the service provided by the UK MNO. In this case, the Spanish subscriber would pay the UK MNO's charges for an international roaming call from Spain to the UK.

In summary, if international roaming retail prices were reduced below the prevailing level of international call charges, then this would give rise to an arbitrage opportunity for consumers. If consumers were able to exploit this arbitrage opportunity, then this would put pressure on mobile operators throughout the EU to lower their international call charges in order to reduce or eliminate the gap with international roaming prices. This can be expected to have further knock-on effects on national call charges as MNOs adjust their tariffs in response to the changes in international roaming prices and international call prices (see section 4). This suggests that a regulated reduction in international roaming charges for consumers might result in significant tariff rebalancing, destabilising and distorting prices across all calls, not just roamed intra-EU calls. It is probable that the prices of some services would decrease, whilst others might increase as part of this adjustment.

3.2 OPERATOR ARBITRAGE IN THE WHOLESALE MARKET

A regulatory-induced reduction in international roaming retail prices could result in these prices falling below the prevailing wholesale international roaming prices. This might mean that some MNOs would become unwilling to provide retail international roaming services at current wholesale price levels. This is most likely to apply to MNOs who are unable to internalise fully all roaming traffic, and who therefore pay wholesale IOTs for a significant proportion of their roaming traffic.

These operators are likely to face significant commercial pressure to seek to renegotiate lower IOTs. If other MNOs are unwilling to reduce wholesale price levels, then this could give rise to regulatory pressures on wholesale prices, either in the form of margin squeeze allegations, or perhaps direct regulation of wholesale prices in addition to retail regulation.

The consequence of this could be that wholesale prices are reduced to a level at which it becomes profitable for foreign mobile network operators (FMNOs), or anyone that could buy from them, to compete in the domestic markets of the MNOs who provide wholesale international roaming services, as well to offer their own domestic subscribers international roaming services. In other words, FMNOS might be able to purchase network access at wholesale prices which would allow them to retail services in competition with the access provider.

This type of operator arbitrage opportunity could also arise as a direct consequence of regulation at the wholesale level that resulted in a reduction in wholesale international roaming prices to a level at which it would be profitable for FMNOs to compete in the domestic markets of the MNOs who supply wholesale international roaming services.

Thus, a regulatory initiative that is aimed at reducing the cost to consumers of international roaming services could effectively usher in mandated wholesale access for all MNOs, in markets which have been deemed by most NRAs to be effectively competitive. This would represent a significant shift in regulatory

policy, and one that is unrelated to the stated aim of reducing the retail price of international roaming.

Regulators have generally taken a cautious approach to mandating MVNO access. Whilst MVNOs could in principle increase retail price competition, and stimulate downstream innovation, these benefits are likely to be modest where there is strong competition between MNOs. Against this, mandating MVNO access may give rise to significant costs. For example, MNOs may be exposed to increased investment risk if they are required to increase network capacity in order to meet MVNO requirements, which could damage investment incentives. For these reasons, there is no presumption that facilitating MVNO access would be desirable, and no strong case that this would improve the competitive outcome.

3.3 SUMMARY

This section has explained that a regulatory-induced reduction in the retail or wholesale price of international roaming could give rise to:

- arbitrage opportunities for consumers that might result in a radical restructuring of domestic and international mobile tariffs throughout the EU; and
- arbitrage opportunities for operators in the wholesale market that might result in a significant change in market structures.

These examples illustrate how a regulatory measure aimed at reducing the cost of international roaming to consumers could have unintended and far-reaching consequences for the operation of mobile markets in the EU. This underlines the importance of a rigorous impact assessment before any regulation is decided upon and implemented.

4 Analysis of wholesale and retail price regulation options

In this section we first consider the likely effectiveness of wholesale price regulation as a means of achieving the objective of reducing the cost to consumers of international roaming. We then discuss the potential economic impact of two specific options that the Commission might consider for regulating retail international roaming charges, namely:

- a broad price cap on an MNO's average retail price of international roaming; and
- a requirement that the level of an MNO's retail international roaming prices be tied to the level of its retail domestic prices.

The key aim of this section is to highlight the importance of taking into account the likely reactions of operators to price regulation in assessing the overall impact of any proposed measure.[9] For example, operators might seek to reduce the impact of either a retail price cap or a retail tying remedy by increasing other retail charges, or by limiting the availability of roaming services. The responses chosen by operators will depend on a range of factors, including the likely impact on profits, the anticipated responses of consumers and rivals, and the form of the regulation.

4.1 WHOLESALE PRICE REGULATION

Regulating the wholesale price of international roaming would not directly address the perceived problem of high costs to consumers when using their mobile phones abroad. The rationale for this form of regulation would therefore depend on whether a regulated reduction in wholesale international roaming prices would result in a corresponding reduction in the cost to consumers of international roaming.

The Commission would need to take into account the extent to which international roaming traffic is now internalised within pan-European groups and alliances, and hence unaffected by wholesale international roaming prices. A high degree of internalisation would call into question the effectiveness of a regulation aimed at reducing wholesale international roaming prices.

In addition, the Commission would need to assess the extent to which those operators who do procure wholesale international roaming services at arms length would pass on reductions in wholesale international roaming prices to consumers in the form of reduced retail prices for international roaming, as opposed to reductions in the retail prices of other services or in subscription charges.

---

9 This section considers impacts that might arise from price regulation that are in addition to the consumer and operator arbitrage opportunities that are discussed in section 3.

4.2 RETAIL PRICE CAP REMEDY

The Commission might seek to reduce the cost to consumers of international roaming directly through a price cap regulation. This could, for example, specify the average revenue that an MNO can earn on a basket of international roaming services.

This type of price cap can be expected to have a knock-on effect on the price of other mobile services that are supplied by MNOs to subscribers. The reason for this is that MNOs compete for subscribers by offering a variety of tariffs for bundles of services, including international roaming, and consumers select the operator who they consider offers the best value for money (given their expected usage of mobile services).

A regulated reduction in the price of one component of a bundle of services, such as international roaming, will have two direct effects as follows:

- the profitability of each subscriber to an MNO will be reduced; and
- subscribers who use their mobile phone when abroad will be better off than before the regulation, given the existing prices of the other services in the bundle.

One would naturally expect the conduct of MNOs to adjust to mitigate the direct impact on profits of a regulated reduction in the retail price of international roaming. In practice, this might entail an increase in subscription charges, a reduction in handset subsidies, and/or an increase in the prices of other services. This can be illustrated by considering the impact of a price cap on the price of international roaming services on pre-pay subscribers who use their mobile phones abroad.

For these subscribers, MNOs could consider increasing the prices of other national and international call services, or reducing handset subsidies. It is straightforward to show that a price cap that reduces the retail price of international roaming:

- will typically reduce MNO profits – this reflects the fact that a binding price cap on the retail price of international roaming by definition restricts the ability of MNOs to set prices and forces the adoption of a less profitable pricing structure than would otherwise be the case; and
- is likely to result in an increase in the prices of other services (particularly if handset subsidies are small, or remain unchanged). This reflects the fact that a regulated reduction in the retail price of international roaming increases the value of the tariff bundles purchased by subscribers who use their mobile phone abroad. Accordingly, MNOs can be expected to increase the prices of other services purchased by these subscribers. Whilst competition between MNOs for subscribers will constrain the extent to which MNOs can increase the prices of other services, some increase can nontheless be expected since the roaming price cap will affect all operators in the market.

The impact of a price cap on retail international roaming prices on total welfare (i.e. profits plus consumer surplus) is uncertain. As explained above, a price cap will typically reduce firm profits, which would tend to reduce total welfare. This may, however, be offset by an increase in consumer surplus. Accordingly, the impact of a price cap on total welfare will depend on whether the reduction in profits outweighs the increase in consumer surplus. In competitive mobile markets, it is possible that a price cap on retail international roaming prices would reduce total welfare. This is because pricing structures are likely to be efficient when competition for subscribers is effective. Accordingly, a cap on retail international roaming prices would distort the competitive outcome, and can be expected to reduce total welfare, and perhaps also consumer welfare.

4.3 RETAIL TYING REMEDY

The Commission might alternatively seek to reduce the cost of international roaming to consumers indirectly by requiring MNOs to tie the level of retail international roaming prices to the level of their retail prices for national or international call services. This type of tying remedy could be implemented in a number of ways. One possibility is that the Commission could implement a regulation that prohibited mobile operators from setting roaming charges above their own domestic call charges. This would mean, for example, that a UK subscriber roaming in Spain would:

- pay the same rate for calling the UK from Spain as he would for a domestic call within the UK;
- pay the same rate for calling another person in Spain as he would for an international call to Spain from the UK;
- pay the same rate for calling non-UK countries from Spain as he would for an international call from the UK; and
- face no charge for receiving calls whilst roaming in Spain.

A tying remedy would constrain the commercial freedom of MNOs in setting the structure of mobile tariffs, and is analogous to a ban on price discrimination across call services. The academic literature provides a number of potentially relevant insights into the impact of a ban on price discrimination in competitive markets. For example, Vickers and Armstrong (2001) find that the freedom to engage in price discrimination tends to be desirable in terms of efficiency when competition is sufficiently strong.[10] The intuition for this is that welfare is maximised by allowing firms freedom to compete for customers without constraining pricing structures (although consumer welfare may be reduced since firms can extract consumer surplus more efficiently).[11]

---

10 Vicker, J and Armstrong, M (2001): "Competitive price discrimination". Rand Journal of Economics.

11 Vickers and Armstrong note that this conclusion may not apply if consumers can be segmented into different markets, or if consumers do not one-stop shop.

More recently, Armstrong (2005) notes that the welfare effects of banning price price discrimination are ambiguous. Price discrimination can, for example, lead to efficient pricing, increased output in an otherwise neglected market, and to more intense competition which benefits consumers.[12] Armstrong concludes that there is no justification for public policies that prohibit price discrimination in general, and that a sensible policy towards price discrimination needs to be founded on a good economic understanding of the market in question.

As with the price cap remedy considered above, a tying remedy can be expected to result in an increase in the prices of other services (particularly those services to which the price of international roaming is tied). However, a tying remedy is unlikely to be equivalent in effect to a price cap on retail international roaming prices. This is because a tying remedy imposes a regulatory restriction on the retail structure of mobile tariffs, whilst a price cap remedy imposes a regulatory restriction on the retail price level of one particular service, namely international roaming.

The potential impact of a tying remedy can be illustrated by considering the effect on pre-pay subscribers who use their mobile phone when abroad. As noted above, MNOs could consider increasing the prices of other national and international call services, or reducing handset subsidies for these subscribers. It is straightforward to show that a tying remedy:

- will typically reduce MNO profits – this reflects the fact that a tying remedy by definition restricts the ability of MNOs to set prices and forces the adoption of a less profitable pricing structure than would otherwise be the case; and
- is likely to result in an increase in the prices of other services (particularly if handset subsidies are small, or remain unchanged). This reflects the fact that MNOs may choose to meet the tying requirement by adjusting retail international roaming prices down, whilst adjusting the prices of other services (particularly those to which the price of retail international roaming is tied) up.

Since a tying remedy will typically reduce MNO profits, the impact of this type of remedy on total welfare (i.e. profits plus consumer surplus) will depend on the change in consumer surplus. Accordingly, a tying remedy may in fact result in a reduction in total welfare (i.e. profits plus consumer surplus). As in the case of a price cap, it is possible that a tying remedy would reduce total welfare in competitive mobile markets, since it would distort the competitive outcome. It is also possible that a tying remedy would have a worse impact on both consumer welfare and total welfare than a price cap remedy.

4.4 SUMMARY

In this section we have considered the potential impact of price regulation at the wholesale and retail levels. The key points of this analysis are as follows:

---

12 Armstrong, M. (2005): "Recent developments in the economics of price discrimination".

- a high degree of internalisation of international roaming traffic with MNO groups and alliances would call into question the effectiveness of a regulation aimed at reducing wholesale international roaming prices;
- a cap on retail roaming prices and a tying remedy can both be expected to have knock-on effects on other prices. This is a further illustration of the key point that a regulation aimed at reducing the retail price of international roaming is likely to have a number of unintended consequences which should be taken into account by the Commission; and
- there should be no presumption that a cap on retail international roaming prices or a tying remedy would necessarily improve either consumer or total welfare. Equally, there should be no presumption that a price cap and a tying remedy would have the same effects on the market.

For these reasons, the Commission should carefully consider alternative forms of economic regulation as part of its impact assessment to evaluate their merits and demerits. This will require a proper assessment of how alternative forms of economic regulation are likely to affect the incentives and conduct of consumers and MNOs, taking into account the nature of the mobile market in the EU.

THE FRONTIER ECONOMICS NETWORK
LONDON | COLOGNE | MELBOURNE | SYDNEY

Frontier Economics Ltd 71 High Holborn London WC1V 6DA
Tel. +44 (0)20 7031 7000 Fax. +44 (0)20 7031 7001 www.frontier-economics.com