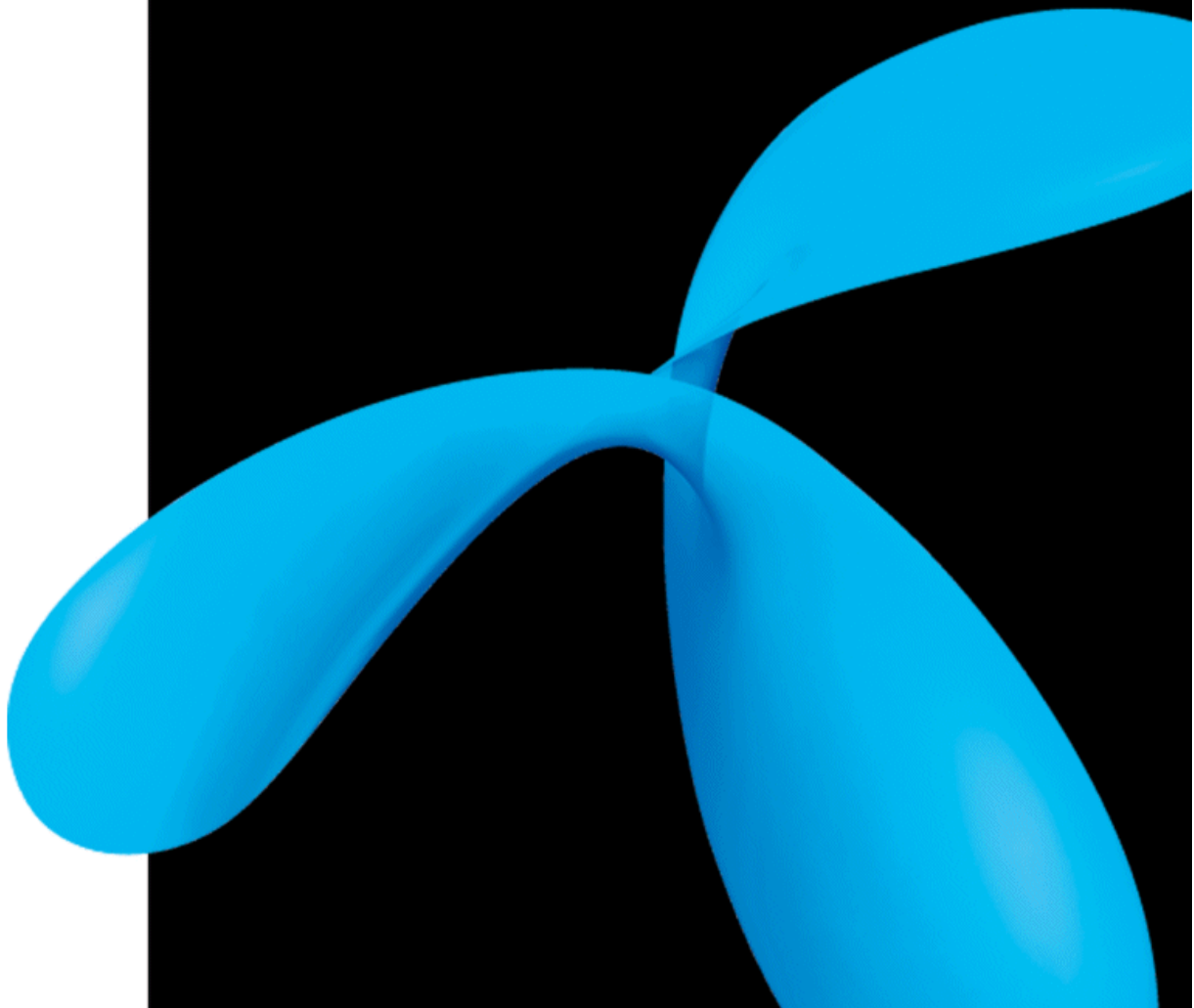


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Terje Ambjørnsen

## Regulation of international roaming - Price flexibility and discrimination





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**Abstract**

On 12 July 2006 the EU Commission presented their *proposal* for regulation of international roaming in Europe, "The European home market approach", for the European Parliament and Council. In the present report we discuss how a non-discrimination clause in the wholesale market may affect competition and welfare, and to what extent the proposed retail regulation will constrain operator's pricing flexibility.

**Keywords**

Regulation, International Roaming, Price discrimination

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## Preface

The present report is a delivery into the project "Robust strategies in regulated market", which is a Joint Activity between Telenor R&I and Global Coordination.

Thanks to Petter Blikrud (Telenor Mobile), Sven Kolberg (Global Coordination) and Terje Nord (Group Regulatory) for in depth comments on an earlier version of the report. I have also benefited from valuable discussions with the project's steering board, and my colleagues Jon-Ivar Kroken and Ole Christian Wasenden in the research department.

The views in this report are those of the author and do not necessarily reflect the opinion of Telenor.



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# 1 Executive summary and key messages

On 12 of July 2006, Viviane Reding (Commissioner for Information Society and Media) presented a regulation proposal for international roaming: "The European Home Market Approach". The European Home Market Approach includes both retail and wholesale regulation. Before the regulation can come into force, it needs to be approved by the European Parliament and Council. The Commissioner hopes to implement the regulation within the summer 2007.

The main elements of the proposal may roughly be described as follows:

- **Wholesale price ceiling.** *i) Calls within the visited country* cannot exceed 2x the average termination level in the EU. *ii) Calls to another Member state (home/3<sup>rd</sup> country)* cannot exceed 3x the average termination level in the EU.
- **Retail price ceiling (making calls).** Retail prices cannot exceed 130% of the wholesale price ceiling.
- **Retail price ceiling (receiving calls).** Tariffs for receiving calls when abroad cannot exceed 130% of the average termination level in the EU.
- **Price transparency.** Mobile operators shall inform subscribers regarding roaming charges and upon request provide travelling end-users with roaming price information.

Based on the average weighted *peak* termination fee of SMP operators in the EU in October 2005 (€0.1264), wholesale and retail price ceilings are illustrated in the table below (excl. VAT):

	<b>Call within visited country</b>	<b>Call to 3<sup>rd</sup> country/home</b>	<b>Receiving calls</b>
<b>Wholesale price ceiling</b>	€0.25/min	€0.38/min	
<b>Retail price ceiling</b>	€0.33/min	€0.49/min	€0.16/min

The regulation is on a single call level. The proposal will limit the absolute price of roaming services, but it seems that there will be room for discrimination.

In the present report we focus on economic and competitive effects of discrimination in the wholesale market and to what extent retail price discrimination is feasible.

## **Wholesale regulation**

It is not stated clearly whether price discrimination will be accepted in the wholesale market.

If wholesale discrimination between operators is accepted wholesale competition is stimulated. A non-discrimination remedy, in contrast, will reduce the competitive pressure between wholesale operators due to the reduced incentive of buyers privately to bargain over wholesale prices.

Different wholesale terms will be carried over to retail markets. The ability to discriminate in wholesale markets may therefore lead to competition on unequal terms in retail markets. Pan-European operators and roaming alliance

members will benefit from discrimination. Independent national operators will probably not.

### **Retail regulation**

The European Home Market Approach regulates the maximum retail price operators can charge per minute for a single call, fixed costs per call included. Beyond that it seems that operators have pricing flexibility. Operators will probably have the flexibility for example to rebalance tariffs by increasing general fixed monthly fees when lowering roaming charges.

Separate add-on roaming subscriptions (including a fixed monthly fee), for instance to prepaid subscribers, may not be acceptable. O2's latest roaming offering "Chosen Country – Spain" may therefore not be in line with the new regulation. In the case such offerings are feasible it is unclear how the fixed monthly fee should be taken into account.

It is feasible to price discriminate and let roaming charges be dependent on in which country the call is originated, as long as the price of single calls are kept below the regulated price ceilings.

Since the regulated price ceiling per minute includes fixed set-up fees per call, it is not feasible to keep prices high through excessively high call set-up fees. Vodafone Passport as it is offered today is probably not in line with the new regulation.

The retail regulation is on a per-call level (not an average call level). Operators can therefore not compensate for high prices on some traffic streams with low prices on others. Similarly, although it is possible to price discriminate between subscriptions, it is not possible to compensate for too high prices in one subscriber segment with lower prices in other segments.

### **Competition law**

Price discrimination does not violate competition rules, per se. However, when setting retail and wholesale roaming prices operators should make sure that their roaming pricing strategy does not alter the competition law.

## 2 Introduction

For a number of years regulators, competition authorities and user interest groups have raised concern regarding prices on international roaming.

In 1999 the European Competition Commission launched a sector inquiry into mobile roaming charges. In their final report the Commission raised concern regarding competition both in retail and wholesale markets.

In 2004/2005 the Competition Commission sent statements of objections to two UK operators (Vodafone and O2) and two German operators (Vodafone and T-mobile). According to the Commission the four operators have abused a dominant position in their respective wholesale markets, i.e. the UK and German wholesale markets for international roaming. So far no final decision has been made.

Markets for international roaming have not been subject to regulation *ex ante*, neither at the retail nor wholesale level. Under the *New European regulatory framework* and the *Commission Recommendation on relevant markets*, the wholesale national market for international roaming on public mobile networks (market 17) is identified as one of 18 relevant markets that should be analyzed in order to identify operators with significant market power (SMP). National Regulatory Authorities (NRA) are obliged to regulate operators with SMP. So far no European operator is regulated.

In February 2006 Commissioner Vivian Reding (Commissioner for Information Society and Media) announced that she intended to regulate markets for international roaming. Two hearing rounds were held. On 12 July 2006 the Commissioner presented a regulation proposal: "*The European Home Market Approach*". The European Home Market Approach includes both retail and wholesale regulation. However, before the regulation can come into force, the proposal needs to be approved by the European Parliament and Council. Whether the regulation will in fact be identical to the Commission's proposal remains to be seen. The Commissioner hopes to implement the regulation by the summer 2007.

The regulation will reduce price flexibility of operators, both at the retail and wholesale level. Although the law proposal of the Commission is concrete, a number of issues needs to be clarified, hereunder the flexibility to price discriminate.

In the present report we discuss how a non-discrimination clause in the wholesale market may affect competition and welfare, and to what extent the retail regulation will constrain operators' pricing flexibility.

The report proceeds as follows. In section 3 the proposal is briefly described. Discrimination in wholesale and retail markets are discussed in sections 4 and 5, respectively. Price discrimination and the competition law are briefly discussed in section 6. In section 7, industry positions and impacts are discussed. Conclusions are provided in section 8.

### 3 Brief presentation of the regulation

On 12 July 2006 the EU Commission presented their *proposal* for regulation of international roaming in Europe: "*The European Home Market Approach*" to the European Parliament and Council. Only voice is regulated. The regulation affects, in addition to network operators within the European Union, also operators in Norway, Iceland and Lichtenstein (from now on called *Member States*). Operators outside the EU are not influenced.

The main elements of the proposal may roughly be described as follows:

- **Wholesale price ceiling.** *i)* Calls *within the visited* country cannot exceed 2x the average termination level in the EU. *ii)* Calls *to another Member state* (home/3<sup>rd</sup> country) cannot exceed 3x the average termination level in the EU.
- **Retail price ceiling (making calls).** Retail prices cannot exceed 130% of the wholesale price ceiling.
- **Retail price ceiling (receiving calls).** Receiving call tariffs when abroad cannot exceed 130% of the average termination level in the EU.
- **Price transparency.** Mobile operator shall inform subscribers regarding roaming charges and upon request provide travelling end-users with roaming price information.

The average termination level (per minute) is a number-of-active-subscribers-weighted average of the per-minute-peak-termination charge (including call set-up charges) of SMP operators in the EU. The Commission will regularly publish the average termination rate in the *Official Journal of the European Union*.

According to the Commission's impact assessment the average EU termination level of SMP operators was 12.64 cents in October 2005. Given this termination level wholesale and retail price ceilings are illustrated in the table below (excl. VAT):

	Call within visited country	Call to 3 <sup>rd</sup> country/home	Receiving calls
<b>Wholesale price ceiling</b>	€0.25/min	€0.38/min	
<b>Retail price ceiling</b>	€0.33/min	€0.49/min	€0.16/min

*Table 1 Wholesale and retail price ceilings based on termination fees in October 2005.*

Furthermore, NRA's shall monitor developments in wholesale and retail voice and data prices, including SMS and MMS.

Within two years after the regulation comes into force, the Commission shall assess how the regulation works and justify why possible continued regulation is needed.

## 4 Discrimination in wholesale markets

### 4.1 Introduction

The regulation of wholesale prices is stated in Article 3 and Annex I:

**Wholesale origination** (Article 3). *The total wholesale charge that the operator of a visited network may levy from the operator of the roaming customer's home network for the provision of a regulated roaming call, including inter alia origination, transit and termination, shall not exceed the applicable amount per minute determined in accordance with Annex I.*

**Annex I.** *The total wholesale charges that the operator of a visited network may levy from the operator of the roaming customer's home network for the making of a regulated roaming call originating on that visited network shall not exceed, on a per-minute basis, an amount equal to the average mobile termination rate published pursuant to Article 10(3) multiplied:*

- a) by a factor of two, in the case of a regulated roaming call to a number assigned to a public telephone network in the Member State in which the visited network is located; or*
- b) by a factor of three, in the case of a regulated roaming call to a number assigned to a public telephone network in a Member State other than that in which the visited network is located.*

*The charge limits in this Annex shall include any fixed elements, such as call set-up charges.*

Fixed elements per call, such as call set-up fees, are to be allocated over a three minute call, i.e. be divided by three (similar to the way the average termination fee is calculated). The price ceiling applies to roaming calls to numbers assigned to a *public telephone network*, i.e. both mobile and fixed networks.

The calculation methodology of the average termination rate, referred to in Article 10(3), is described in Annex II. Briefly speaking the average termination rate is equal to the average mobile termination rate of SMP operators across Member States, weighted on the basis of the number of active subscribers and a three-minute *peak* call.

Although the proposal is fairly clear, there are a number of issues that must be clarified or underlined by the Commission, including price discrimination in the wholesale market.

Active traffic steering stimulates competition in the wholesale market for international roaming. See for example Ambjørnsen and Wasenden (2005) for a discussion. Competition may therefore lead to prices below the regulated price ceiling. It is legal to offer wholesale roaming services at prices below the regulated level. However, as far as R&I can see, the Commission does not discuss whether wholesale price discrimination is feasible.

There are at least two relevant types of discrimination to consider:

- Discrimination between 3<sup>rd</sup> parties, and
- Discrimination between 3<sup>rd</sup> parties and members of own group.

The economic and competitive effects of discrimination are discussed in this section.

## 4.2 Discrimination between 3<sup>rd</sup> parties

The ability to steer traffic to preferred networks provides buyers of wholesale roaming services with buying power. The degree of buying power differs between operators. It may therefore be profitable from an operator perspective on the *supply side* to price discriminate between buyers of roaming. The ability to discriminate:

- i) *Will have positive competitive effects in the wholesale market.*
- ii) *May distort the competitive power in home retail markets of buyers.*

***i) Will have positive competitive effects in the wholesale market.*** Mobile operators have hundreds of roaming agreements. Although it is not rational to negotiate actively with everyone, bargaining is common.

Price reductions through bargaining have two positive effects for the buyer. Firstly, costs are reduced. Secondly, the competitive power in the home retail market is improved.

In the case of non-discrimination, price reductions should be passed on to everyone. Non-discrimination will therefore reduce the benefits from bargaining. The cost-reduction effect will remain, but the competitive advantage in the home-retail market will evaporate. In effect, the incentive to bargain will be reduced and the incentive to be a free rider is increased. Non-discrimination will therefore dampen competition in the wholesale market for international roaming.

This argument has been presented to the EU Commission by Valetti (2003). In their sector inquiry into roaming charges in 2000 the EU Competition Commission makes similar statements: "*The Standard non-discrimination obligations introduced by the GSM Association appear to remove the incentives to introduce pro-competitive roaming services, e.g. based on preferential wholesale roaming agreements and transparent on-rate tariffs.*"

A non-discrimination remedy will therefore mute wholesale competition and be negative from a social perspective.

***ii) May distort the competitive power in home retail markets of buyers.*** An operator with for example a high number of subscribers, a membership in an alliance (Freemove, Starnap Alliance, Vodafone) or an international footprint has typically a higher degree of buying power compared to small independent national operators. Small independent operators may therefore get less favourable wholesale price conditions.

Differences in wholesale prices will be transmitted to the home retail market of buyers, leaving small independent national operators with a competitive disadvantage at home.

For example, in the Commission's first hearing round the Dutch operator KPN notes that "*Especially Freemove partners are unlikely to allow independent operators a competitive tariff, since these independent operators often compete with Freemove partners in their home countries.*"

A non-discrimination clause may therefore lead to competition on equal terms in retail markets.

### 4.3 Discrimination between 3<sup>rd</sup> parties and members of own group

In subsection 4.2 we discussed discrimination between third parties. In this subsection, we analyse the effects of discrimination between third parties and members of own group.

Group members in the case of Telenor include operators such as Sonofon (Denmark), Telenor Mobil (Norway), Telenor Sweden and Pannon (Hungary). Vodafone, T-Mobile and Telefonica/O2 are examples of groups with a pan-European footprint.<sup>1</sup>

As long as the regulated wholesale price is sufficiently high, there will be room for a positive margin on the provision of wholesale roaming services.

For independent operators wholesale prices reflect the true costs of roaming. Where pan-European operators have footprints the true costs of roaming equals the internal production cost of roaming. If pan-European operators maximize group profits, the internal production costs of roaming should be taken into account when determining prices, not wholesale prices.<sup>2</sup>

To see why, suppose marginal costs of providing roaming services are equal to  $c$ . Consider for example Hungary where Vodafone is competing with Pannon. Suppose Vodafone and Pannon purchase wholesale roaming from the Vodafone group member in the Czech Republic. Let the wholesale price be equal to  $w$ , where  $c < w$ . Suppose Vodafone sets a retail price ( $p$ ) below the wholesale price in the retail market in Hungary;  $c < p < w$ . If Pannon meets Vodafone in the retail market, retail roaming services are sold with a loss;  $p - w < 0$ . Vodafone Hungary would make a similar loss in the retail market, but would make a surplus in the wholesale market in the Czech Republic;  $w - c > 0$ . As a *group* Vodafone would make a surplus;  $p - w + w - c = p - c > 0$ . Vodafone as a group has therefore a competitive advantage in Hungary relative to Pannon.

It should be noted that this type of internalization mindset may generate conflict of interest *within* a group. Vodafone may therefore not be able to *maximize* the benefits of internalization, but it is clear that at least part of the benefits will be collected this way.

We are now ready to discuss the economic effects of discrimination between third parties and members of own group. From the discussion above it is clear that discrimination:

- a. *May lead to lower consumer prices,*
- b. *May distort competition in retail markets.*

**a) Lower consumer prices.** It is straightforward to show that cost internalization rather than so-called *double marginalization* will lead to reduced prices and improve welfare, see for example Tirole (1989). Pan-European integration in combination with discrimination leads to lower consumer prices and is positive in a social perspective.

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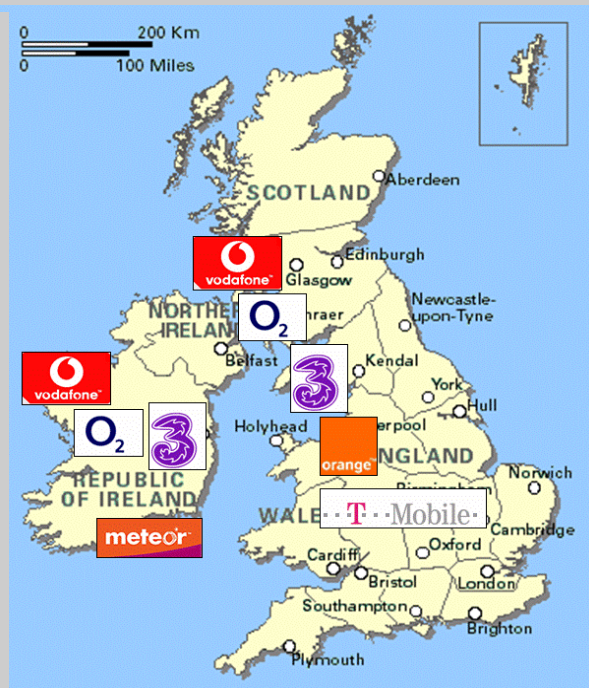
<sup>1</sup> EU countries where Vodafone Group members are located: Germany, Czech Republic, Hungary, Italy, Spain, UK, Greece, Ireland, Malta, the Netherlands and Portugal. EU countries where T-Mobile Group members are located: Germany, UK, Austria, the Netherlands, Poland, Hungary, Czech Republic and Slovakia. EU countries where Telefonica/O2 members are located: Spain, Czech Republic, Germany, UK and Ireland.

<sup>2</sup> Within a group wholesale prices transfer revenues from one part of the group to another, but do not increase overall group profits before taxes.

**b) Distortion of competition in retail markets.** Discrimination between third parties and members of own group will lead to different input costs in retail markets. Independent operators will therefore typically face reduced competitive power relative to pan-European operators. In the first hearing round the Irish operator Meteor focused on this type of distortions based on their experience from their home market in Ireland. The case is described in box 1.

**Box 1: Roaming in Ireland, Great Britain and Northern Ireland**

Roaming in Ireland, Great Britain and Northern Ireland is an interesting case due to an ongoing process to reduce problems with inadvertent roaming on the border between Ireland and Northern Ireland in the UK. Inadvertent roaming happens when Irish subscribers located in Ireland are connected to a base station on the other side of the border (and vice versa) and charged roaming tariffs. According to a joint ComReg/Ofcom working group 43% of surveyed mobile customers in Northern Ireland “claimed to have received a signal from the Republic of Ireland while in Northern Ireland. A third of these consumers used this signal .... , and almost half (48%) of these were unaware of roaming costs.



Neither ComReg nor Ofcom have taken regulatory actions to reduce the problem. Instead they have put pressure on operators. Authorities have applauded the changes made so far, but the actions in Ireland and the UK differ:

**Ireland.** In Ireland operators have launched offerings that address the problem with inadvertent roaming. Vodafone Ireland has introduced a “home pricing principle” (when using Vodafone’s network) to their business and personal postpaid subscribers. O2 Ireland offers the add-on service “All Ireland” (no roaming tariffs when using O2’s network, no receiving-call charges) to their personal postpaid subscribers. Hutchison 3, “Ireland’s newest mobile phone network”, offers to some extent a home pricing principle. Receiving calls are charged, however. Vodafone, O2 and Hutchison 3 have footprints in the UK.

Meteor is the only Irish mobile network operator with no footprint in the UK. In the first round of the EU hearing Meteor argues that “*Meteor cannot replicate the removal of international roaming charges for the UK and Northern Ireland because it does not have a licence for the UK and therefore must pay the wholesale international roaming charges charged by operators in the UK*”. From Meteor’s web-site, however, it seems now that Meteor has a special agreement with T-Mobile in the UK. If Meteor’s pay-monthly subscribers use the network of T-mobile in the UK and call home, home off-net prices apply. Receiving calls is free of charge. Prepaid subscribers are offered favourable terms if they use T-mobile’s network when in the UK.

**UK.** UK operators have so far not responded in the same manner as Irish operators. Vodafone UK have their "Passport" offering (high call set-up fee and UK-minute prices when in Ireland). With "O2 Ireland Bolt On™" (£1.99/month) prepaid subscribers pay the same as home when roaming in Ireland. Receiving calls is free of charge. The "Ireland Bolton™" for Pay monthly subscribers offers discounted roaming rates. Receiving calls is, however, not free of charge. If roaming in Hutchison 3's network subscribers pay domestic tariffs. T-mobile and Orange do not supply home-pricing offerings.

Although no operator has abolished roaming charges completely, Vodafone, O2 and Hutchison 3 (footprint in Ireland and the UK) have taken a longer step in that direction compared to T-mobile, Orange and Meteor.

Roaming and distortion of competition were also central elements in the Vodafone Airtouch/Mannesmann merger case in 2000. In that case the EU Commission raised competitive concerns of the pan-European merger. The Commission raised, among other things, concern regarding the "... *creation of a dominant position on the market for provision of seamless pan-European mobile telecommunication services, ...*"

To remove these anticompetitive concerns Vodafone Airtouch committed to offer third parties access to the merged undertakings networks on a non-discriminatory basis for three years. The non-discrimination principle regarded both pricing and quality of service. A deeper description of the Vodafone Airtouch/Mannesmann merger case is available in box 2.

#### **Box 2: The Vodafone Airtouch-Mannesmann merger case**

On 14 January 2000, the EU Commission received a notification that Vodafone Airtouch Plc (Vodafone Airtouch) intended to acquire the control over Mannesmann AG (Mannesmann).

Vodafone Airtouch was at that point of time a UK-based company with interest in companies across 24 countries, including telecommunication companies in 10 Member States. Mannesmann was a German based engineering and telecommunication (fixed and mobile) company. Mannesmann had interest in a number of operators in European countries.

The Commission raised competitive concern regarding the increased concentration in the UK (market share of 53.6% after the merger) and Belgian (70%) markets.

The Commission estimated the merged firm's market share in Europe to be higher than 30%. The second and third operator in Europe had 15% (Telecom Italia) and 10% (Deutsche Telecom), respectively. British Telecom and France Telecom both had market shares in Europe of about 8%. According to the Commission neither of these operators could match the geographical footprint of Vodafone Airtouch/Mannesmann. Furthermore, the competing operators would have "*significant cost and performance/quality disadvantages given its dependency on Vodafone Airtouch/Mannesmann for instance on roaming agreements in order to offer "equivalent" pan-European mobile services*". The Commission argues that the merged entity's bargaining power vis-à-vis handset manufacturers with respect to the design of handset functionality (not available to competitors) could lead to distortions in the market for more advanced pan-European mobile services. The Commission therefore raised competitive concerns regarding the potential creation of a dominant position in the market for pan-European services.

To remove the Commission's competitive concerns in the UK and Belgian markets Vodafone Airtouch proposed a de-merger of Mannesmann's shares in

Orange. To remove the Commission's concern regarding the market for pan-European services, Vodafone Airtouch guaranteed third parties *non-discriminatory* access (pricing and quality) to Vodafone Airtouch/Mannesmann's integrated network for three years.

Given the guarantees made by Vodafone Airtouch the Commission approved the merger.

Summing up, a non-discrimination clause reduces the social benefits from pan-European footprints, but may lead to competition on equal terms in retail markets.

Having said this it should be added that improved traffic steering techniques are likely to intensify competition in wholesale markets and reduce the competitive edge of pan-European operators in retail markets.

#### 4.4 Discrimination of non-Member-State operators

During the Commission's hearing rounds, some operators raised concern regarding pricing of roaming wholesale services vis-à-vis non-regulated operators outside Europe. The argument was that regulation in Europe would reduce the bargaining power of European operators and lead to higher wholesale roaming costs outside Europe.

According to Article 2-b and 2-f,:

- 2-b *"home network" means the terrestrial public mobile network located within a Member State and used by the home provider for the provision of terrestrial public mobile telephony services to the roaming customer (R&I's underlining)*
- 2-f *"visited network" means a terrestrial public mobile telephony network situated in a Member State other than that of the home network and permitting a roaming customer to make or receive calls by reason of arrangements with the operator of the home network. (R&I's underlining)*

As R&I sees it, the regulated wholesale price ceilings therefore only apply to business between operators within Member States and are non-binding vis-à-vis operators outside Europe. It should therefore be possible to discriminate between European operators and non-European operators.

## 5 Discrimination in retail markets

### 5.1 Introduction

The regulation of retail prices is stated in Articles 4 and 6.

- **Making of regulated roaming calls (Article 4).** *Subject to Article 5, the total retail charge, excluding VAT, which a home provider may levy from its roaming customer for the provision of a regulated roaming call may not exceed 130% of the applicable maximum wholesale charge for that call determined in accordance with Annex I. The charge limits in this Article shall include any fixed elements associated with the provision of regulated roaming calls, such as call set up charges or opt-in fees.*
- **Receipt of calls while roaming (Article 6).** *The total retail charge, excluding VAT, which a home provider may levy from its roaming customer in respect of the receipt by that customer of voice telephony calls while roaming on a visited network shall not exceed, on a per minute basis, 130% of the average mobile termination rate published pursuant to Article 10(3). The charge limits in this Article shall include any fixed elements associated with the provision of regulated roaming calls, such as one-off charges or opt-in fees.*

**Making calls.** According to Article 4, the retail price may not exceed 130% of the wholesale price ceiling. It is important to realize that it is the price that is regulated and not the margin per se. For example, if an operator's wholesale price is lower than the regulated level the margin may be higher than 30%, as long as the retail price does not exceed the regulated level.

Furthermore, Article 4 regulates maximum retail prices at a disaggregate level. To be precise, no single call can cost more than 130% of the regulated wholesale price ceiling per minute. If the average termination rate is for example €0,1264/min, making a call home/third country or within the visited country cannot cost more than 0,49€/min and 0,33€/min, respectively.<sup>3</sup>

When calculating the price per minute, fixed fee elements such as one-off charges and opt-in fees shall be included. Fixed fee elements per call should be distributed over a 3-minute voice call.

**Receiving calls.** According to Article 6 receiving calls while in Europe shall not cost more than 130% of the average EU termination fee. If the average termination rate is for example €0,1264/min, no single call received should cost more than €0,16/min.

Similar to making calls, fixed fee elements should be distributed over a 3-minute voice call.

Input costs of receiving call services consist of an international transit element, termination costs (payment to the visited network operator) and transaction costs. Although termination fees are regulated by national regulators, there is no guarantee that the retail price ceiling will cover costs in any country. For instance €0,16/min will not cover termination fees in Poland which are about €0,16-€0,17/min (65PLN).<sup>4</sup>

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<sup>3</sup>  $0,49€/min = 0,1264 \times 3 \times 1,3$  and  $0,33€/min = 0,1264 \times 2 \times 1,3$ .

<sup>4</sup> Ovum (2006), 2006 Q2 Interconnect charge data (xls-sheet).

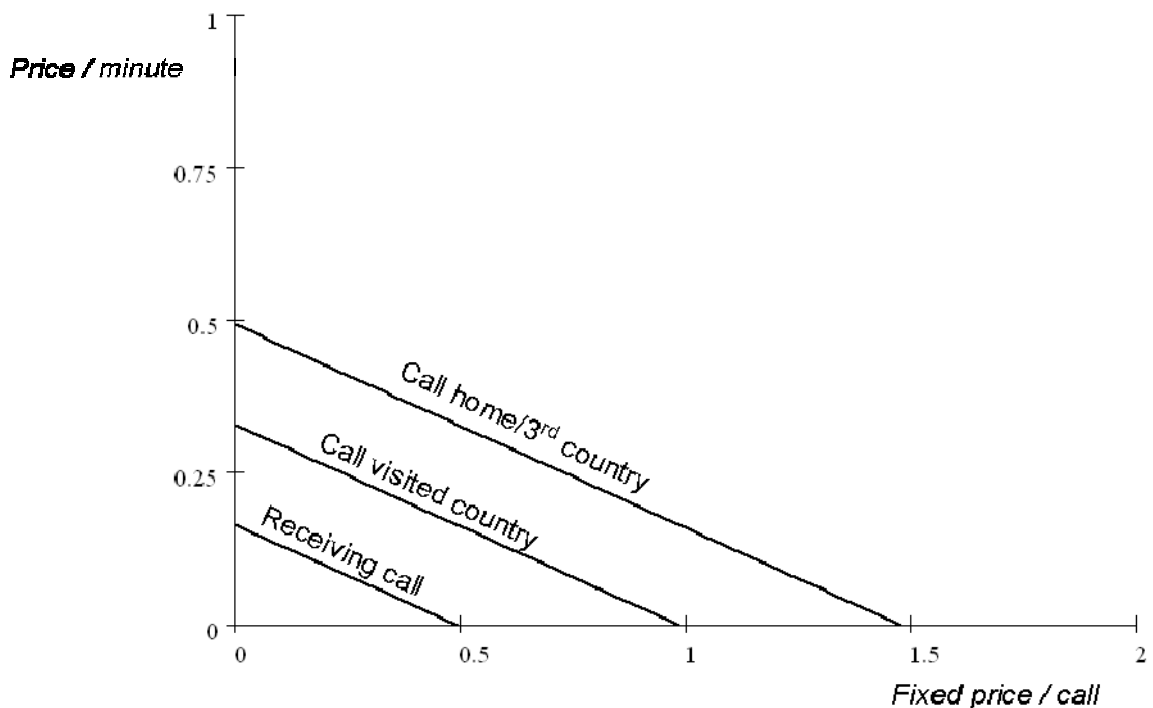
Except from the regulatory constraints determined by Article 4 and 6, it seems that the Commission opens for price discrimination:

*This common mechanism should ensure that retail charges for international roaming provide a more reasonable reflection of the underlying costs involved in the provision of the service than has been the case whilst allowing operators the freedom to compete by differentiating their offerings and adapting their pricing structures to market conditions and consumer preference (R&I's underlining).*

In the next subsections we will discuss to what extent price discrimination is feasible.

## 5.2 Call set-up fees versus variable minute fees

It is clear that the price for making or receiving a single call cannot exceed 130% of the wholesale price ceiling and average termination fee, respectively. The charge limits include any fixed price element (spread over a three-minute call). In the table below the lines between feasible and non-feasible combinations of call set-up fees and minute prices are illustrated.<sup>5</sup> Combinations above the lines are not feasible.



*Figure 1 Feasible and non-feasible combinations of retail call set-up fees and minute prices. Making and receiving calls. Combinations above the lines are not feasible (Measured on €)*

It is therefore not possible to keep usage prices high through excessively high call set-up fees. The argument is relevant both for making and receiving calls.

<sup>5</sup> Average termination fee assumed to be equal to €0,1264.

The Vodafone Passport offering is typically a home-pricing principle, but involves a higher set-up fee per call. See for example the offering of Vodafone in the UK below.

### Vodafone Passport

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Going abroad? Confused about call costs? With Passport just pay a 75p connection charge per call, then chat away at your usual UK rate.

Figure 2 Vodafone Passport offering in the UK

The Vodafone Passport offering applies also for receiving calls. According to Article 6 the retail receiving call tariff cannot exceed about 16 €-cent per minute (excl. VAT).<sup>6</sup> Vodafone UK's offering implies a minute price for receiving calls of 25 €-cent (75 €-cent call set-up fee spread over a three-minute call), i.e. 21 €-cent exclusive 17.5% VAT. The current Vodafone Passport offering in the UK is therefore not feasible under the proposed retail regulation.

## 5.3 Uniform pricing

To simplify roaming price menus operators may want to set uniform prices. If operators set uniform prices for calls home/3<sup>rd</sup> country and calls within visited countries the uniform price must be below the price ceiling for calls within the *visited country*.

If operators on the other hand *price differentiate* between calls home/3<sup>rd</sup> country and calls within visited country, but otherwise set uniform prices, calls home home/3<sup>rd</sup> country will have a higher price ceiling compared to calls within visited countries.

## 5.4 Aggregation of calls

The price ceiling is on a single call level, and not on an average level. The price ceiling is in a sense a subscriber guarantee for not paying a higher price for any type of call. It is therefore not possible to set some prices low to compensate for too high prices on other types of calls.

## 5.5 Rebalancing

Pay-monthly subscribers pay a fixed monthly fee in addition to variable usage prices. It is not meaningful to say that one part of the monthly fee is dedicated to roaming services. Roaming is only one element in the bundle of mobile services. It is only the minute price that is regulated. When calculating the minute price "one-off charges or opt-in fees" should be included (Article 4). Although it is not 100% certain how the Commission defines "one-off charges or opt-in fees" we do not believe general fixed monthly fees should be included.

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<sup>6</sup> Given an average termination fee of 12,64 cent.

Increasing the general fixed subscription fee against lower international roaming voice usage prices should therefore be feasible (this type of rebalancing is also known as the "Waterbed effect"). If, in contrast, fixed monthly fees should be taken into account, there are a number of methodological questions that must be clarified by the Commission. Rebalancing by increasing the price of other services may also be an option.

Prepaid subscribers do typically not pay a fixed monthly fee. In the prepaid case it is therefore no feasible trade-off between the monthly fixed fee and the roaming minute price. Prepaid subscribers pay typically similar or higher roaming tariffs compared to pay-monthly subscribers. The probability that the regulated price ceiling will in fact be binding for prepaid subscriptions is therefore higher compared to pay-monthly subscriptions.

Introducing roaming subscriptions as an add-on service including a monthly fixed fee and variable usage prices could be a way to increase pricing flexibility. This type of pricing strategies would however undermine the retail regulation and may not be feasible under the new regulatory regime. Roaming offerings such as O2's "Chosen country – Spain" may therefore not be feasible under the new regulation. Bundled or included usage offerings will face similar problems.

## 5.6 Discrimination across subscriptions

The regulation does not regulate price levels in general, only the upper price bound of single calls. Price discrimination between subscriptions should therefore be of no problem.

## 6 Discrimination and the competition law

According to Article 82 in the EC Treaty abuse of a dominant position is prohibited.

The only antitrust cases regarding international roaming services we are aware of are the two above mentioned cases in the UK and Germany (see section 4). In these cases the EU Commission believes the involved parties have abused their dominant positions in the wholesale markets for international roaming by setting excessive wholesale prices to foreign network operators. We are not aware of antitrust cases focusing on roaming and discrimination.

Although international roaming services (so far) have not been subject to many antitrust investigations, large operators with an international footprint should not ignore competition rules when pricing international roaming services. A margin squeeze may for example constitute an abuse of a dominant position.

A pan-European operator with a dominant position in the wholesale market can exercise a margin squeeze by setting a high wholesale roaming price and a low retail roaming price; see the discussion in section 4.3.

We believe there may (at least) be two ways a margin squeeze may be exercised:

- a) A pan-European operator sets high wholesale roaming prices in countries where it has footprints and low roaming prices in home retail markets.
- b) Network operators set low retail roaming prices and high wholesale roaming prices in their contracts with *independent service providers*.

International roaming services is one part of the mobile basket of bundled services. We believe therefore that competition authorities will not consider roaming in isolation, but rather evaluate profitability of the complete bundle. Fixed fees and margins on other services will then be included. Operators may then legally sell roaming at low prices, as long as the contribution margin from fixed monthly fees and other services is sufficiently high. It should, however, be added that it cannot be ruled out that competition authorities will focus on roaming services in isolation.

## 7 Industry position and impacts

### 7.1 Industry position

The industry seems to acknowledge that the Commission will regulate markets for international roaming. There is however still time to influence the final formulation of the European Home Market Approach.

Although there are conflicts of interest, the industry seems to agree on a common position:

#### **Wholesale (WS) regulation**

- WS 1) **Wholesale price flexibility.** Given that wholesale regulation is to be implemented, operators should have flexibility to compete on price below the cap.
- WS 2) **Broader WS price cap rather than price caps per call.** Rather than introducing price ceilings at a per call level a more aggregate average price cap should be introduced. The proposed sub caps of different call types should be eliminated.

#### **Retail (Rt) regulation**

- Rt 1) **No retail regulation.** Retail regulation is unnecessary and damaging.
- Rt 2) **Retail regulation only if retail competition does not work.** Retail regulation should only be introduced when it is proven that wholesale regulation is not sufficient to drive retail prices down.
- Rt 3) **Broader retail price cap rather than price caps per call.** In the case of retail regulation the proposal should be modified. Rather than introducing price ceilings at a per call level a more aggregated average price cap should be introduced. The proposed sub caps of different call types should be eliminated.

In this subsection we will briefly discuss the position of the industry in elucidation of the discussion earlier in this report.

**WS1)** As noted in section 4 there are conflict of interests with respect to pricing flexibility and non-discrimination in the wholesale market. Large operators with a pan-European footprint would typically prefer discrimination, while independent national operators would not. The position of the industry to enable operators to compete on price below the price cap seems therefore to benefit larger operators.

**WS 2)** One broad average price cap (for example WS revenues from roaming divided by traffic volume), rather than price caps on traffic types on a per-call level, would give operators increased flexibility to price discriminate. In order to ensure that all operators benefit from the regulation the cap could be established at an operator level. A broader price cap would make pricing more efficient in the sense that differences in wholesale roaming tariffs could reflect underlying cost differences, for example differences in termination costs and price elasticity.

**Rt 1) and Rt 2)** From an economic point of view, regulation should only be imposed on operators where market failure is identified. The Commission did not identify any market failure, but argued that retail regulation is needed to secure end-user benefit from wholesale price reductions.<sup>7</sup> From a welfare perspective retail regulation may be harmful due to reduced price flexibility and ability to offer new innovative price structures. The industry's resistance against retail regulation is understandable. It is only by accident that price regulation and profit maximization coincide. Rather than introducing retail regulation immediately, the Commission could wait and see and only introduce regulation if it is proven that savings at the wholesale level are not passed on to end-users. Furthermore, the industry argues, price monitoring should be done at a more aggregate level, see the discussion below.

**Rt 3)** The broader the price index of roaming services the more price flexibility operators have. The Commission's proposal regulates retail prices on a single call level, and reduces therefore significantly operator's pricing flexibility. Examples of how pricing flexibility is constrained are given in section 5. The proposal of the Commission works as a safeguard (on a single call basis) against excessive roaming prices. On the other hand it may increase other end-user prices, for instance monthly subscription fees. Retail price regulation may furthermore prevent operators from implementing efficiency-improving Ramsey pricing. A broader regulated roaming price index will increase price flexibility, which, from a profitability perspective, typically is positive. For example, if operators in any case expect price reductions in the business segment due to increased competition, operators may not have to reduce prices to for instance prepaid subscribers.

## 7.2 Possible impacts

Independent of whether the industry's views will be taken into account, international roaming will be regulated. It is difficult to say how incentives and markets will develop, and to what extent regulation will affect market outcomes. Our viewpoints below are more like hypotheses and should therefore be treated very carefully.

Due to effective traffic steering technology competition in wholesale markets will increase, even without regulation. Increased ability to direct traffic to preferred networks will make buyers able, credibly, to set operators on the supply side up against each other and put a downward pressure on wholesale prices. This type of buying power, we believe, will be beneficial also to small independent national operators.

The incentive to invest in price bargaining will depend on the expected benefits. The harder the regulation in the wholesale market, the lower the benefits from individual discounts will be. In the case of a non-discrimination clause, the individual benefits from bargaining will be even lower. It seems therefore that the harder wholesale regulation is, the lower the incentives to bargain and the lower the incentives to compete. We believe, however, that the proposed wholesale regulation leaves room for positive incentives to bargain over price.

Today operators have hundreds of wholesale roaming agreements across the world. In many countries operators have agreements with several network

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<sup>7</sup> *The Commission argumentation was based on the observation that past price reductions in the wholesale market so far have not (at least not to any significant degree) led to lower end-user prices.*

operators. One reason why operators prefer to have contracts with more than one operator in a country could be to improve coverage for their end-users. As networks have full coverage, however, this argument is losing explanatory power.

One additional motivation for having several agreements in a particular country has been to increase *wholesale* demand at home, and was in particular important when traffic redirecting technology was poor. With a limited ability to steer traffic improved signal strengths/coverage and an increased number of roaming contracts (i.e. increased subscriber base abroad who potentially will use your network when travelling in your home country) were important ways to increase wholesale traffic in own network. Whether this type of contract structure will remain is difficult to say. We believe however, due to improved traffic steering techniques, that the role as buyer and seller of international roaming will be decoupled to a greater extent. Although 3<sup>rd</sup> and 4<sup>th</sup> operators may not be guaranteed roaming agreements, we do not rule out that operators may continue to have roaming agreements with several operators in a particular country. Operators may, for instance, prefer to have roaming agreements with several operators to credibly set operators up against each other.

Since the retail regulation binds on a single call level, retail price flexibility is significantly limited. The reduced pricing flexibility will have a number of effects. A few consequences are mentioned below.

Since the retail price cap includes set-up fees (spread over three minutes) offerings with a high set-up fee per call and lower minute prices, such as for instance the current version of Vodafone Passport, may not be in line with the new regulation.

As noted in section 5.5, separate roaming subscriptions including a fixed monthly fee, such as for instance O2's "Chosen country – Spain", may not be feasible under the new regulation.

Although it is feasible to discriminate we believe the regulation will make roaming tariffs converge across subscriptions, at least in the short term. If wholesale competition drives wholesale prices well below the regulated level there will be more room for price discrimination across subscriptions.

## 8 Conclusions

**Price discrimination in wholesale markets will increase wholesale competition and lower prices, but may distort competition in retail markets.**

Discrimination in combination with an increased capability to steer traffic to preferred networks, for instance cheaper networks, will intensify competition. Discrimination in favour of own group members will lead to lower consumer prices. Operator-dependent wholesale prices will on the other hand lead to differences in the competitive power in retail markets.

**The maximum minute retail price operators can charge for a single call is regulated, beyond that, operators have pricing flexibility.**

The European Home Market Approach regulates the maximum retail price operators can charge per minute for a single call, fixed cost per call included. Beyond that it seems that operators have pricing flexibility. As far as R&I can see operators have the flexibility for example to increase general fixed monthly fees when lowering roaming charges. Separate roaming subscriptions (including a fixed monthly fee), for instance to prepaid subscribers, is however probably not feasible. In the case it is feasible it is unclear how the fixed monthly fee should be taken into account.

Since the minute price includes fixed costs per call (spread over a three-minute call) operators cannot compensate for lower minute prices through higher fixed fees per call. Due to the high set-up fee per call, the current Vodafone Passport offering seems not to be in line with the proposed retail regulation.

It is feasible to price discriminate and let roaming charges be dependent on in which country the call is originated. The retail minute price regulation is on a per call level (not an average call level). Operators can therefore not compensate for high prices on some traffic streams with low prices on others. Similarly, although it is possible to price discriminate between subscriptions, it is not possible to compensate for too high prices in one subscriber segment with lower prices in other segments.

**Price discrimination does not violate competition rules, per se. However, when setting retail roaming prices operators should make sure that their roaming pricing strategy does not alter the competition law.**

Price discrimination may increase competition and reduce consumer prices. Price discrimination is therefore not illegal, per se. However, if price discrimination mutes or distorts competition it may not be in line with competition rules. Operators should therefore assess (ex ante) the competitive effects of their roaming pricing strategies. Whether a roaming pricing strategy implies a margin squeeze or not should for example be evaluated.

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