



The European Consumers' Organisation

BEUC/X/012/2007

20 February, 2007

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ROAMING : THE POTENTIAL IMPACT OF A REGULATION

A CRITICAL ANALYSIS OF THE OPERATION ARGUMENTS

**ECONOMIC STAKES FOR EUROPEAN CONSUMERS AND THE
ECONOMICS OF THE SECTOR**

Study by Altex for UFC - Que Choisir and BEUC

February 2007

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EXECUTIVE SUMMARY

1. The debate on the regulation of roaming activity in Europe is framed in a context of ignorance concerning the volumes and revenue associated with this activity. This situation is linked to a failure to take into account the volumetry of roaming activities by numerous national regulatory authorities. The players in the sector are today entirely dependent on the figures published by the GSM Association, which is itself an interested party in the ongoing debate on regulation.
2. This absence of independent statistical monitoring is all the more damaging as this activity covers multiple flows on the networks visited (traffic incoming, outgoing, international, local) that are not the subject of a single wholesale and retail pricing system and that, in general, generate imbalances of traffic at local level and at the level of the operators. The limited data that it has been possible to supply to the regulators in the context of public consultations has been protected by business secrecy. In such a context, measures for monitoring average prices and revenue relating to routing activities cannot be implemented in the short term. Significant initiatives must be taken at national level to consolidate the information relating to prices, volumes and revenue relating to roaming, with the introduction of procedures that guarantee the independence of statistical collection of data.
3. In relation to the estimate of the costs of the roaming service, the assimilation of an IOT (inter operator tariff) to a wholesale price that is itself representative of this transport cost on a mobile network introduces a degree of confusion. The MTR (mobile termination rate) used to frame regulation of roaming activity remains a price control indicator used to replace the current IOT level, but it does not constitute an indicator of the roaming cost. A coherent regulation would have to take into consideration the real cost of roaming.
4. The multiplier coefficients applied to the various roaming traffic must, however, remain close to economic models. A coefficient equal to $MTR \times 2$ for outgoing calls must be applied to take into account the reality of the costs. For a local call, a coefficient equal to 1.5 would take into account the real costs of such a call while leaving a substantial margin to the operators.
5. The levels of retail roaming prices have not evolved in the course of recent months, contrary to the assertions of the operators. It is mainly package offers that have appeared; however, the commercial conditions applicable to these render them insufficient or, on the contrary, disproportionate in relation to the needs of residential customers.
6. An offer such as the one from Vodafone remains an offer limited to the networks of the Vodafone group and therefore does not respond to the intrinsic characteristics of roaming. Moreover, the pricing schedules make them very sensitive to the duration of communication, and short calls can be more costly than the base rate. However, the logic of the operators is to multiply package offers with seemingly low prices to try to substantiate the idea that an imposed retail price would inhibit more advantageous offers for the consumers.
7. In relation to the so-called 'waterbed' effect, the reductions announced by the operators on the IOTs have not led to any reduction in the retail prices. Furthermore, the systems to guide traffic to favoured visited networks have broadly expanded. However, contrary

to the expectations of certain regulators, these solutions have not resulted in a lowering of prices for the final users.

8. The debate on the level of volume/price elasticity reveals the counter-productive attitude of the operators regarding roaming. For them, roaming will remain an activity that is essentially linked to professional activities for which a reduction in prices would only have a weak impact on the level of consumption. The general economics of roaming shows, however, that the imbalances noted by the operators themselves between customer flow and visitor flow follow a North South axis typical of tourist travel. To keep a weak rate of elasticity (-0.55) therefore contradicts the indicators shown on the roaming market (even if a precise calculation of the level of elasticity still has to be done).
9. The economic welfare models established by the Commission can be corrected in order to include the real volumes of roaming minutes recorded in Europe. Although reducing the impact announced by the Commission, the levels achieved remain significant (regardless of the scenario considered in relation to elasticity).
10. The alternative proposition of the consumer associations (MTR x 2 for outgoing international calls, MTR x 1.5 for outgoing local calls, 1 MTR for a call entering in roaming) naturally increases the overall benefit by further reducing the prices paid by consumers and reducing operator revenue. With the conservative hypothesis of an elasticity of -0.55, the additional gain in terms of economic welfare is 250 million euros compared to the initial proposition of the Commission.
11. The overall impact of the regulation on the European mobile market overall remains limited. However, particular attention (monitoring) must be given to the effects of regional imbalances and imbalances by operator.
12. The threat linked to rebalancing (recovery of income lost on roaming by increasing the national prices) must be taken into consideration. In theory this threat is not applicable in the context of a control of costs by the national regulatory authorities as the regulation of roaming does not modify the industrial economics of the network, but on the contrary can only lead to additional volumes. In any event, this situation should not arise in a competitive context, as operators have to distinguish themselves with innovative offers to keep their current clients or attract new ones.

1. CONTEXT OF THE STUDY

(UFC)-Que Choisir, with the support of BEUC the European Consumers' Organisation, wanted to have a study on roaming in Europe that would reframe the debate by basing it on an independent economic analysis.

Taking into account the various propositions for regulation of roaming in relation to wholesale and retail price, this study throws light on the economic reality of roaming and on the pricing consequences for European consumers.

The objectives of the study relate, in particular, to the following:

Assessment of the impact of the regulations proposed on the general economics of the sector and the advantages obtained by the consumers

Calculation of the impacts at geographic level and at the level of the various profiles of mobile operators

Analysis of the wholesale and retail price developments recorded in recent months in Europe.

2. REFOCUSING THE DEBATE ON ROAMING

The analysis of roaming activities in Europe has been undertaken on the basis of a legitimate debate on the level of retail price incurred by customers visiting foreign networks. This should not obscure the economic realities of mobile activities in Europe. In the absence of this the operators use the argument that industrial relations are not taken into account to challenge the evolution of the pricing situation of roaming.

2.1. UNCERTAINTY CONCERNING THE STATISTICS

2.1.1. The initial situation

The statistics on roaming are not precise, in the absence of systematic work by the national authorities in this regard. Furthermore, where the figures are published, there are uncertainties concerning the perimeter of accounting between outgoing minutes and incoming minutes. One of the first tasks of legislators should have been to account for the corresponding volumes in parallel with the work regarding prices.

This uncertainty explains why the services of the Commission had to await publication of the data issued by the GSM Association. The impact study of the Commission was undertaken on the basis of an inadequate estimate of the traffic in roaming minutes. In fact, the Commission is dependent on statistics supplied by the GSM Association, which are not statistics collected by the various national regulators.

A consequence of this is the absence of statistics on the volumes and revenue from roaming; a delicate situation when studying the consequences of an intervention on prices.

The international activity of the mobile operators is made up of three distinct elements:

- Roaming out, corresponding to the flows linked to the activity of mobile customers outside of the cover of their operators;
- Roaming in, corresponding to the flows linked to the activity of the mobile customers attended to by third party operators;
- International activity, corresponding to the flows linked to international calls by mobile customers on the network of their own operator.

This first distinction is still not sufficient to describe with precision the flows, the techniques and the associated revenue. One must also distinguish the outgoing flows and the incoming flows in each domain. (Cf. *Appendix A*)

The Commission is not in issue, therefore. It is the national regulators who, in general, have not made detailed studies of the roaming market. Apart from some regulators, such as the French regulator, who have made the effort to publish data on roaming in and roaming out, most have come to a decision on the situation of the roaming in market without providing any statistical data on this activity¹. In the absence of consideration of the volumes, it is more difficult to assess the situation of roaming which, by its nature, is a net balance market in which the repayments between operators take into account the roaming in and the roaming out minutes, the roaming agreement being, by its nature, a bilateral agreement².

Further, the roaming market is made more complex by the various flows concerned. It will be noted that, in a systematic way, the regulators who publish data on roaming in and out do not distinguish the incoming volumes and the outgoing volumes applicable to each of these situations. In effect, the confusion remains relatively high concerning the assessment of the economic impact of the proposed regulations.

2.1.2. An example of transparency in statistics

The French regulator henceforth publishes statistics on the volumes of mobile traffic and revenue related to the international activities of the operators. Such transparency, were it applied to all of the European markets, would allow progress in the detailed analysis of the impact of decisions relating to roaming.

The statistics used below are modelled on framework data published by the ARCEP.

Mobile traffic and revenue linked to roaming and international for the French market (Total World)

¹ One latent argument is to consider that this market is a wholesale market and that, therefore, it does not give rise to an investigation on roaming out. Roaming out corresponds to a retail market outside of the perimeter of the national regulator.

² The situation is even more alarming since, in certain large European markets, the regulators do not publish any statistics on outgoing volumes on mobile networks and, *a fortiori*, on roaming in.

	2000	2001	2002	2003	2004	2005
Total roaming in Millions Minutes	802 500	855 000	1 192 500	1 290 000	1 350 000	1 410 000
minutes RI outgoing total	535 000	570 000	795 000	860 000	900 000	940 000
minutes RI incoming RI	267 500	285 000	397 500	430 000	450 000	470 000
total revenue RI million €	497 550	524 400	727 823	783 654	816 447	810 097
total roaming out Millions Minutes	318 000	385 000	509 000	655 000	985 000	1 115 000
minutes RO Outg.	213 060	257 950	341 030	438 850	659 950	747 050
minutes RO incmg.	104 940	127 050	167 970	216 150	325 050	367 950
total revenue RO Million €	297 648	348 849	433 923	558 388	839 713	950 538
international volumes outg. Millions Minutes	498 000	687 572	815 404	832 888	958 840	998 000
international volumes incmg. Millions Minutes	1 062 000	1 592 000	1 207 000	985 000	1 020 000	1 224 000
international revenue outg. Million €	273 900	323 159	424 010	433 102	536 950	548 900
international revenue incmg. Million €	180 540	302 480	235 365	211 775	163 200	159 120
total international revenue	454 440	625 639	659 375	644 877	700 150	708 020

Source : ARCEP

2.2. HOW AND AT WHAT LEVEL SHOULD WHOLESALE PRICES BE SET?

2.2.1. The cost of a mobile minute

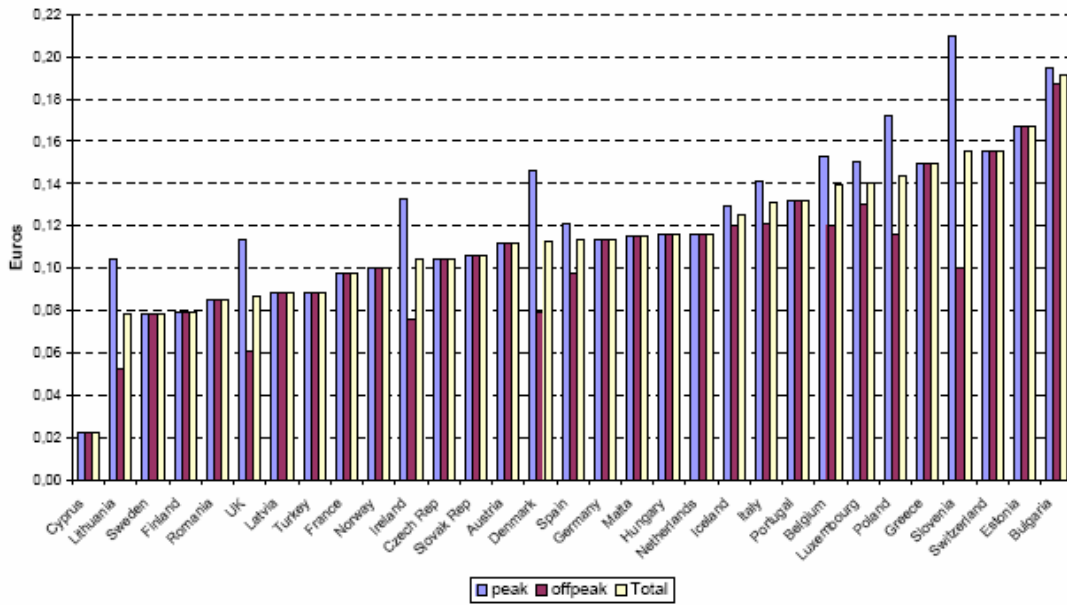
The IOT is the unit of measure used by operators to count their reciprocal traffic. It is not representative of any cost whatsoever. The intrinsic value of an IOT has no connection with the economics of the industry. The proof of this is that this value is specified as 0 in the 'bill and keep' system, for operators exchange the traffic on the assumption that globally the traffic each way will balance out. On the other hand, when French operators abandoned 'bill and keep' in order to upgrade the counting of balances, this did not result in a doubling of the price of a mobile minute in France!!!

Nor is the MTR ((Mobile Termination Rate, termination of a call on the mobile network) necessarily representative of a cost. It is essentially a price regulated by the national authorities and is intended to be regularly reduced. If it were nevertheless necessary to take a cost reference based on MTRs, it would be necessary to take the least expensive in Europe, not the average as is the case today, since the lowest value is representative of a movement towards the costs³.

[Heading to chart below: "Comparison of average levels of Mobile Termination Rate in Europe on 1 January 2006"]

³ Subject to the reservation that the respective characteristics of the national markets (coverage, density, clients etc.) would have to be taken into account.

Comparaison des niveaux moyens de TA mobile en Europe au 1er janvier 2006

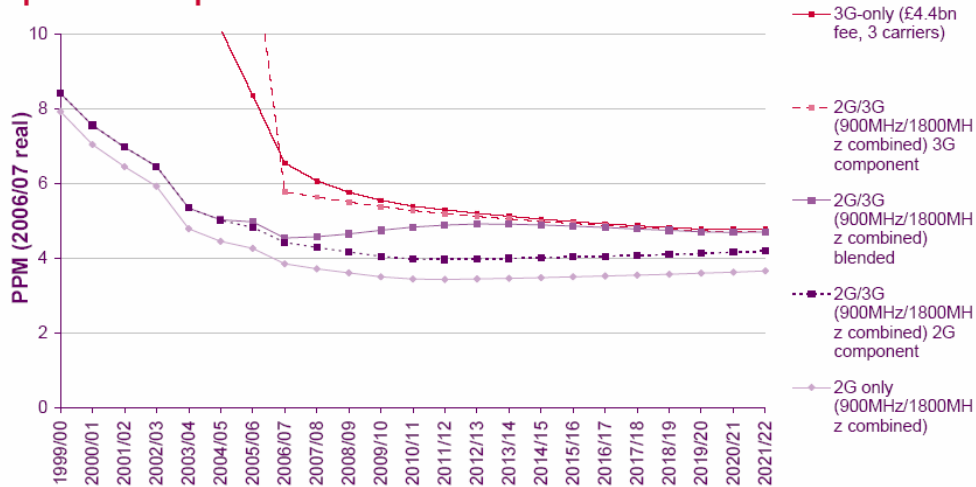


Source: European Commission

To take a cost reference, it would be necessary to analyse the costs of minutes on the mobile networks, as do certain regulators. In the United Kingdom, **for example, the average cost in 2006 is approximately 4 pence per minute according to the type of operator, or approximately 6 eurocents.**

Example of studies of mobile minute termination costs
The case of the RU, OFCOM study

Comparison of operator benchmarks



Source: Mobile Call Termination OFCOM September 2006

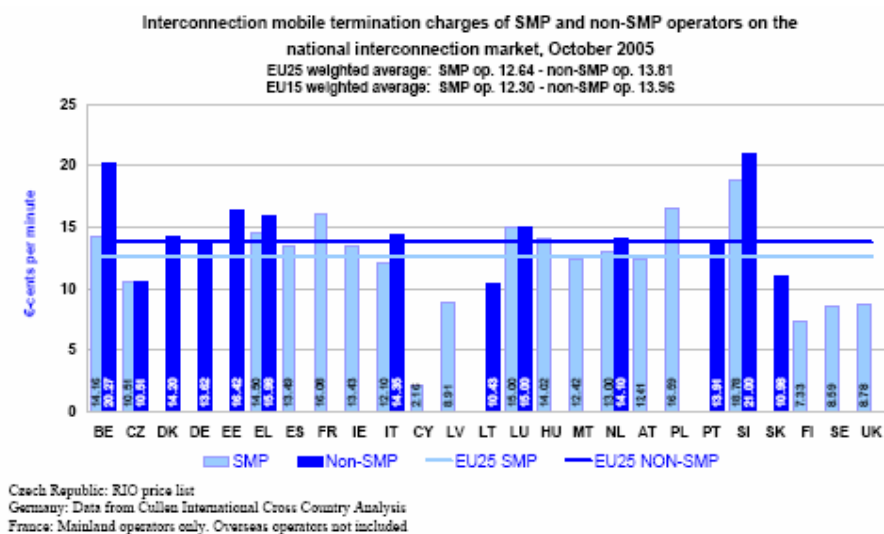
Such an indication of the cost of a minute ties up with the work carried out by ALTEX for the UFC-Que Choisir in the dossier of the agreement of the mobile operators before the *Conseil de la Concurrence* [Competition Council] in France. The cost of a minute on French

networks was established at between 7 and 11 eurocents during the period 2000-2002, which certainly suggests a lower cost in 2007.

2.2.2. Debates on the method for calculating the MTR

First, taking account of the MTR in terms of peak and off-peak hours does not appear to change the calculation fundamentally. In France, for example, the MTR is identical for peak and off-peak hours.

In addition, certain proposals tend to calculate the MTR based on incoming revenue. This may contribute to increasing the MTR, because those operators who can escape the tariff framework proposed by their NRA will bill the MTR at a higher level. These are the “Non-SMP” operators, shown in dark blue below.



Source: Appendix 11 to the report *Réglementation et Marchés des Communications Electroniques en Europe en 2005* [Regulation and Markets for Electronic Communications in Europe in 2005], European Commission, February 2006

The various methods used would thus tend to increase the reference MTR and thus automatically end up with a higher indicator for calculating the wholesale price of the outgoing and incoming RO.

These efforts however appear disproportionate with respect to the objective being pursued. The MTR⁴ has been chosen as the reference, but it does not represent any technical or

⁴ The MTR calculations published by the Commission at present are based on prices smoothed to 3 minutes (and not on revenues), in peak hours and weighted by the number of clients. According to some, the MTR should be weighted by the volumes of incoming minutes and not active subscribers. The effect on the level of the MTR (its rise or fall) appears particularly difficult to predict. In the case of the French market, it can be noted that the clients of Bouygues have a very much higher level of consumption than the other two operators (269 outgoing minutes for Bouygues as against 177 for Orange at the end of 2004). Insofar as this heavier activity should also generate heavier incoming traffic for Bouygues, the MTR (revenues on volumes) is higher than an MTR weighted by the number of clients. According to ARCEP, the call termination of Bouygues is 15 to 45% higher than those of Orange and SFR these last years. A wider formulation that would lead to an increase of the MTR would thus be as follows: as a

economic reality. In its 11th report on the state of regulation and markets, the European Commission states that call termination on a mobile network is on average 9 times higher than call termination on a fixed network in double transit. On the other hand, as mentioned above, an accounting MTR comes to a value close to 6 to 7 cents, or a call termination 4 to 5 times higher than a call termination on a fixed network in double transit.

There is thus no point in introducing subtleties in calculating the MTR that could possibly put some cents more on the wholesale price of roaming out.

The fall of the MTR, no matter what the method of calculation in static mode, is of the order of 10 to 15% per year. It is the effect over time on the wholesale price of roaming that should be researched, rather than an absolute starting value.

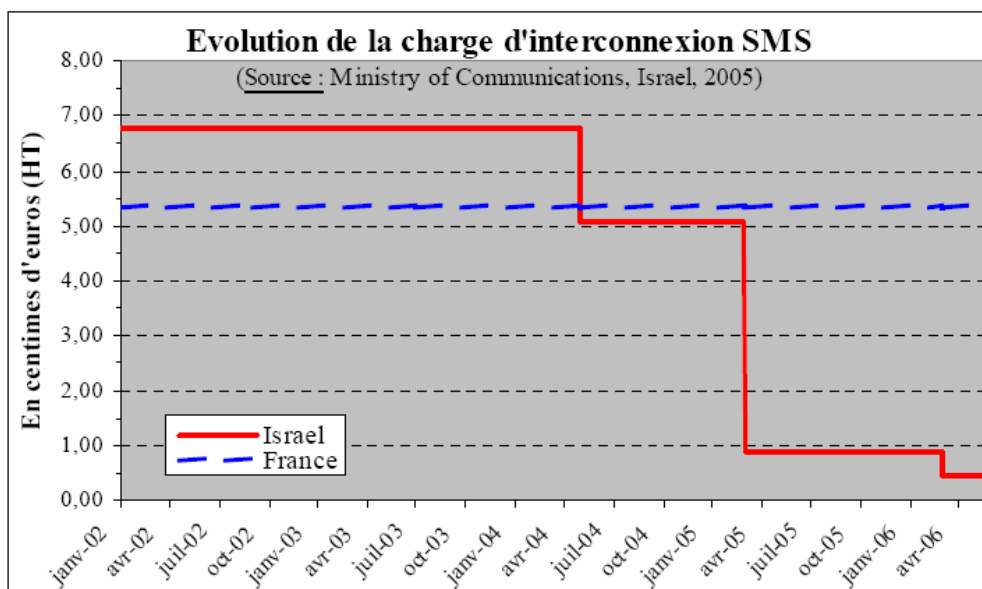
2.2.3. The case of SMSs

SMSs can be taken as a reference in this debate. The cost of an SMS transported on a network is of the order of 1 to 2 cents per SMS. The cost of termination of an SMS on the French networks was fixed at 5.3 cents by the operators. The French regulator noted, moreover, that the Israeli regulator had evaluated the cost of an SMS as 0.45 cents, which could correspond to a cost of 1.35 cents on the French market. Just like the call termination on a network, it is the lowest cost that should be taken into account in the case of the French SMS market.

“The SMS TA [call termination] of mobile operator A constitutes a variable cost for mobile operator B wishing to route an SMS off net addressed to a line of operator A. On the other hand, when operator B routes an SMS on net, he bears only his own costs, in particular his network costs for providing the termination of the SMS. When SMS call termination is significantly higher than the corresponding costs, mobile operators are thus bearing significantly different variable costs as between an SMS on net and an SMS off net. Going by the information in its possession, the Authority finds that the SMS call termination (5.336 eurocents per SMS) currently applied by the three mainland French operators is decidedly heavier than the corresponding costs (less than approximately 2.50 eurocents per SMS).”⁵

challenger on the market, a non-dominant (non-SMP) operator proposes offers that stimulate usage rates. But, at the same time, not being subject to regulation, the operator bills the incoming minutes more dearly. In total, the weighting of this operator in the national MTR is heavier in minutes than in clients. Taking account of the total MTR (SMP and non-SMP) leads to increasing the MTR by more than one cent, or an advantage of 3 cents for the calculation of the outgoing RO wholesale price, 2 cents for the calculation of the incoming RO wholesale price.

⁵ *Public consultation relating to an analysis of the wholesale market for the SMS call termination on mobile networks, ARCEP, October 2005.*



Source: ARCEP

To take account of the traffic imbalances that are produced for the operator Bouygues, ARCEP has decided that the SMS call termination on the Bouygues network is fixed at 3.5 cents, while the call termination on the Orange and SFR networks is fixed at 3 cents. This difference is supposed to represent the automatic loss of wholesale revenue due to a smaller market share, which introduces a greater 'off net' effect and thus an imbalance in revenues between wholesale costs and revenues. Small operators are handicapped by the 'club effects' when the exchange value is much higher than the real cost.

These effects of size and capture of network traffic by groups of operators could have been taken into account in the debate on the regulation of roaming. Unfortunately, the absence of statistics on this activity does not permit the successful conclusion of such an analysis.

2.2.4. The MTR multiplying coefficient in the case of roaming

The absence of a difference in the MTR multiplying coefficient between an outgoing call to the country of origin of the client and an outgoing call to the country being visited is not logical. Since it is demonstrated that the additional cost of the call is confined to the transit, a slight difference should be applied for the benefit of the (local) call in the foreign country.

A common outgoing international and outgoing local rate - of the order of 2.8 for example - has in addition a strong structuring effect. It maintains a high cost for use on the visited network and tends to continue to brake the development of national usage. The imbalance between international and local outgoing calls is thus legitimated and reinforced.

The cost of transit is effectively low, estimated as 2 to 5 cents, which represents 5 to 13% of a triple MTR of 39 cents. Under these conditions, the rate of 2.8 for national calls is particularly high. The weighted average destroys the approach at the origin of the control of prices for outgoing calls on the national network called "European home market approach" of the European Commission

Taking as a basis the existing studies of costs and studies of impact, it would be appropriate to fix the coefficient at 2 for outgoing international calls (or 0.252 euros excluding tax on the wholesale tariff and 0.327 euros excluding tax on the retail tariff (0.252 + 30%)) for a MTR set at 12.6 cents. The proposal of consumer associations, to lower this coefficient to 1.5 for local outgoing calls is legitimate in the absence of total costs associated with a roaming call on an extranational network. Hence a wholesale tariff of 0.189 euros excluding tax and a retail tariff of 0.245 euros excluding tax for local outgoing calls for a MTR set at 12.6 cents.

2.3. ANALYSIS OF CRITICISMS BY THE OPERATORS

GSMA Europe commissioned a report from AT KEARNEY and CRA international⁶ aiming at putting into question the conclusions of the impact assessment by the Commission published in July 2006. The criticism is concerned with the volumes of roaming in Europe and with the methodology applied. In the course of the report, certain points will be developed in detail. An overall view of the methodological criticisms is given in Appendix B.

The criticism concerning the account taken by the Commission of retail revenues and wholesale revenues in order to calculate total roaming traffic in Europe is admissible. It introduces an important difference in the impact of the proposed measures, since the volume of minutes concerned is much smaller. The calculations in question have been reflected in the following part of the ALTEX study.

A remark may be made on this point. The Commission, like ATKEARNEY and CRA, models and gives financial results without publishing the volumes of minutes concerned. In the present report, the calculations will be presented in volumes of minutes for which the estimations of prices and costs are applied. This approach appears more transparent for at least three reasons:

A comparison of roaming volumes with national volumes of outgoing minutes is more significant than revenues. The dimension "revenues" is moreover estimated in comparison with the consolidated revenues of the operators.

The effects of elasticity can be more easily comprehended. A consumption of 1 to 2 minutes per overnight stay manifestly reflects a strong constraint on usage, even though these overnight stays concern professional persons and tourists.

The volume approach moreover permits two types of flow to be distinguished whose volumes are not published in the various works referred to, namely the outgoing RO and the incoming RO. These two types of flow are explained in the present study.

⁶ Review of the Commission's impact assessment, AT KEARNEY CRA International, September 2006.

3. ANALYSIS OF THE ALLEGATIONS OF THE GSMA RELATING TO PRICES

The operators consider that the work of the Commission has not taken account of the announcements made by some of them in terms of a lowering of wholesale and retail prices.

Starting from the examples given by the GSM Association and certain operators, a check has thus been made on the tariffs of the operators referred to on the basis of the implementation of a policy of price reductions for roaming in Europe.

3.1. Real development of retail prices

3.1.1. Retail prices: the example of Orange France

Orange claims that a roaming call in Italy can be made for 0.50 euros per minute. In fact this offer is possible only for a single subscription in the year between July and October to an offer of 10 minutes for 5 euros, or effectively 0.50 euros per minute. *Appendix C*

On the site of the Commission comparing tariffs, the following data have been collected.

Roaming on the basis of 4 minutes

Operator	Roaming In Italy					
	3	H3G	TIM	Vodafone	Omnitel	Wind
Bouygues	--	--	4.00 €	4.00 €		4.00 €
Orange	--	--	4.00 €	4.00 €		4.00 €
SFR	--	--	4.00 €	4.00 €		4.00 €

Source:

http://europa.eu.int/information_society/activities/roaming/tariffs/fr/voicepost/index_en.htm, September 2006

In reality the tariff is indeed fixed at 1 euro per minute, the first minute being indivisible, apart from the exceptional offer mentioned above. An extract from the Orange tariff for February 2007 confirms this fact.

Extract from the ORANGE FRANCE tariff

> avec un forfait Classique, Intense ou Pro (décomptés à la seconde au-delà de la 1^{re} minute indivisible)

émission d'appels (prix/min)	depuis la zone Europe	depuis la zone Maghreb/ USA/Canada/Turquie	depuis la zone reste du monde
émission d'un appel vers la France métropolitaine	1€	1,18€	2,90€
émission d'un appel vers zone Europe	1€	1,18€	2,90€
émission d'un appel vers la zone Maghreb/USA/Canada/Turquie	1,18€	1,18€	2,90€
émission d'un appel vers la zone reste du monde	2,90€	2,90€	2,90€
888 messagerie vocale	1€	1,18€	2,90€
700 ou +33 6 07 62 64 64 service clients	tarif d'un appel au service clients depuis la France métropolitaine ¹⁰		
renvoi d'appels conditionnels vers la France métropolitaine (hors messagerie vocale) ¹¹	1,30€	1,73€	4,30€
rappel du déposant ¹²	1€	1,18€	2,90€
	+ coût d'un appel en France métropolitaine		

3.1.2. Real development of prices for Orange over recent months

The only tariff development that has occurred since September 2005 on the general public market concerning the post paid subscribers of Orange France concerns the change of the tariff zone of Poland, which has moved from zone 2 to zone 1, the effect of which is to change the price per minute from 1.18 euros to 1 euro. Retail prices have not changed for 17 months, that is, since the supervision of the market by the Commission.

This confirms that the threat of regulation is not causing any significant change in commercial practices, contrary to the claims of the operators.

The most astonishing feature of this business is the willingness of the operators to enter into a confrontation, since they could at least have played the game during the period of examination of the regulation, in order that the development of the roaming tariff would confirm their arguments. In the present case, there is a total contradiction between a theoretical discourse on the beneficial effects of competition and the detrimental effects of regulatory interventionism, and completely frozen tariffs.

MOVEMENTS IN ROAMING PRICES FOR AN ORANGE CLIENT (09/05-02/07)

tariff for a 4-minute call	Sep-05	Mar-06	Sep-06	Jan-07	Feb-07
<i>ROAMING IN Italy</i>					
ORANGE ON TIM	4	4	4	4	4
ORANGE ON Vodafone	4	4	4	4	4
ORANGE ON WIND	4	4	4	4	4
<i>ROAMING IN POLAND</i>					
ORANGE ON ERA	4,72	4,72	4,72	4,72	4
ORANGE ON IDEA	4,72	4,72	4,72	4,72	4
ORANGE ON PLUS	4,72	4,72	4,72	4,72	4
<i>ROAMING IN Germany</i>					
ROAMING ON EPLUS	4	4	4	4	4
ROAMING ON O2	4	4	4	4	4
ROAMING ON Vodafone	4	4	4	4	4
ROAMING ON TMOBILE	4	4	4	4	4

tariff per minute	Sep-05	Mar-06	Sep-06	Jan-07	Feb-07
ROAMING IN Italy					
ORANGE ON TIM	1	1	1	1	1
ORANGE ON Vodafone	1	1	1	1	1
ORANGE ON WIND	1	1	1	1	1
ROAMING IN POLAND					
ORANGE ON ERA	1,18	1,18	1,18	1,18	1
ORANGE ON IDEA	1,18	1,18	1,18	1,18	1
ORANGE ON PLUS	1,18	1,18	1,18	1,18	
ROAMING IN Germany					
ROAMING ON EPLUS					
ROAMING ON O2					
ROAMING ON Vodafone	1	1	1	1	1
ROAMING ON TMOBILE	1	1	1	1	1

Source: ALTEX

3.1.3. The Relax Holiday offer of T-MOBILE

T-Mobile claims, as an example of tariff changes, that a minute of roaming in Poland, coming from Germany, works out at 34 cents per minute. The offer is advertised on the site of the GSM Association.

In reality, the conditions governing the Relax Holiday offer by TMOBILE are particularly restrictive and cannot be likened to a tariff as such. The package has to be consumed within four weeks of its first use and the offer is valid only once per subscriber. The offer at 34 cents is thus valid for only 30 minutes of outgoing and incoming roaming over 12 months. Other than in this package, an outgoing and incoming minute is billed at 59 cents. *Appendix D*

3.2. BUNDLE OFFERS

3.2.1. The Orange Europe offer

The Orange Option Europe offer is presented as a promotion on intensive-use fixed price plans and allows calls to be made for a tax-inclusive bundle price of 30 € or 60 €.

Option Europe sans frontière 30€ (€30 Europe without borders option)

40 min (2)

to make your calls from Europe (or 80 min of calls from metropolitan France to Europe)

40 min offered

to receive your calls in Europe!

Option Europe sans frontière 60€ (€60 Europe without borders option)

90 min (2)

to make your calls from Europe (or 180 min of calls from

metropolitan France to Europe)

90 min offered

to receive your calls in Europe!

To sign up, contact customer services by dialling 700 from your Orange mobile or [click here](#)

> Things to know before your leave

(1) Options valid for voice communications from metropolitan France to countries in the European Union (excluding metropolitan France), or from these countries to the rest of the world (for details of the countries concerned, refer to the current price list). The *Europe sans frontière 30€* and *Europe sans frontière 60€* options give an entitlement respectively to: a 25% and 33% reduction on current standard prices, up to the amount of the chosen option; and to 40 and 90 minutes for communications received in the European Union (excluding metropolitan France). Communications are billed in seconds after the first indivisible minute. Communications over and above the options are billed at current standard rates (see “voice/video calls from abroad in international mode”). Options are not cumulative and are not compatible with one another or with any other promotional offer on calls to and from foreign countries, with the *Orange sans frontière* options and with the *préférence Europe* and *préférence Maghreb* options. Unused minutes cannot be carried forward from one month to the next. In the event of a termination or change of the *Europe sans frontière* option, the remaining credit is forfeited.

(2) Maximum number of minutes for calls from the European Union (excluding metropolitan France) to the European Union.

The term “countries of the European Union” refers to the following countries: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, French Guyana, Germany, Greece, Guadeloupe, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Martinique, Netherlands, Poland, Portugal, Réunion, Slovakia, Slovenia, Spain, Sweden, United Kingdom.

Source: <http://mobile.orange.fr/0/visiteur/PV>

In actual fact it is a monthly fixed price offer. If you apply the averages recorded for a French tourist visiting Italy, i.e. one journey a year for a period of 6 nights, application of the fixed rate to the month during which the journey takes place already shows that the fixed price solution is not relevant for just one fixed month; all the more so if the fixed price applies by definition to several months – unless one believes that the fall in the price of roaming might encourage people to travel.

A theoretical calculation, which assumes that the tourist might use up his fixed-price allocation within a given month, shows the inadequacy of the fixed-price offer in satisfying the needs of consumers. These calculations are entirely theoretical because they are based on an average annual journey. In reality, if you assume that 40 minutes of roaming take place

per journey lasting 6 nights, and that a tourist may make two journeys of this kind per year, you have an offer of 480 minutes (12 months X 40 minutes) for a 80 (2 X 40 minutes) minutes of use, which works out at a tax-inclusive rate of 4.5 € per minute.

Fixed price plans cannot therefore be used to demonstrate a fall in prices charged to consumers. They are not suitable for tourist use but only for certain specific niche situations and professional requirements (self-employed people).

Furthermore, these offers do not constitute the announced "pass-through" to the benefit of consumers because operators are talking about an IOT which is at 0.45 €. This point will be confirmed below. (see 3.3 below),

The logic of operators is therefore to multiply the availability of package offers with low face value prices in the bundles, which turn out to be fairly unattractive or aimed at small niche markets, in order to demonstrate that an imposed retail price would lead to the disappearance of the current advantageous offers for consumers.

3.2.2. Vodafone's PASSPORT offer

- **General presentation of the Passport offer**

The PASSPORT offer is often cited as an example of an offer that is favourable to consumers. Furthermore, operators argue that retail price regulation tends to prevent offers of this kind being made, because they might turn out to be inadequate compared to a retail price ceiling.

It is important to note first of all that the offer is not very widespread (7 million customers in Vodafone's latest annual report, 10 million at the beginning of 2007 according to the operator out of a total of 170 million Vodafone customers).

However, two features drastically reduce the use of this solution:

- The networks covered
- The threshold effects

The networks covered by the offer tend to show that the offer is not an alternative to roaming in the strict sense of the word but remains an offer limited to Vodafone or assimilated networks (SFR in France), a kind of international "on net" offer.

Outbound roaming calls must be dialled from a Vodafone network. In the case of SFR, inbound calls must also come from Vodafone subscribers in the country of origin.

The threshold effects, for both outbound and inbound calls, are not favourable to short calls, yet these calls constitute the majority of calls made by roaming. Of course one might consider that the offer of this rate could encourage the use of additional minutes. But in this case, the operator would be applying a very high elasticity logic (a 4 factor), while in actual fact operators have constantly rejected the suggestion of an increase in elasticity in the context of roaming.⁷

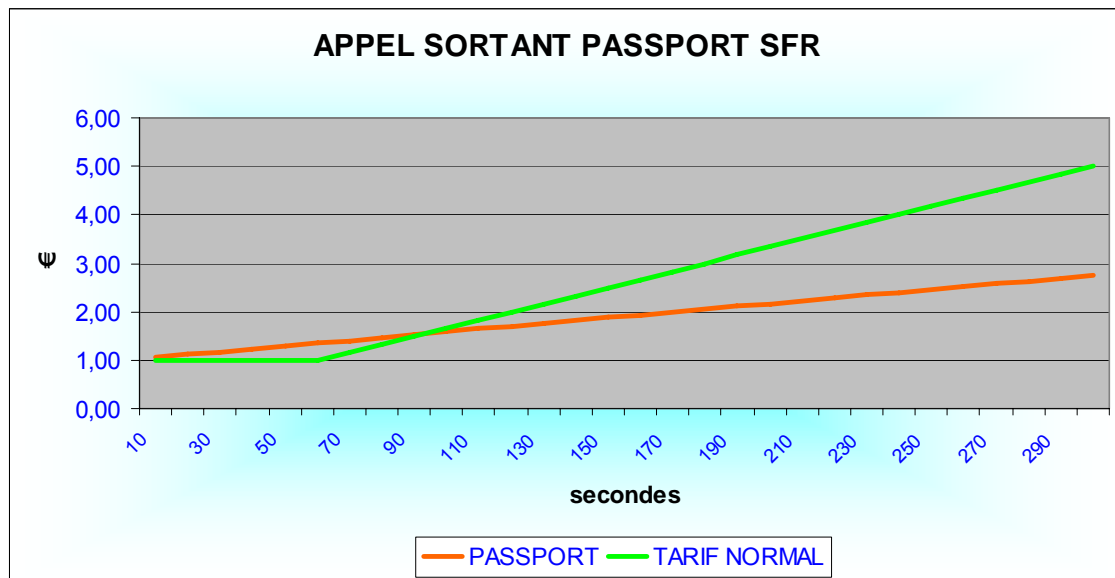
⁷ The GSM Association's advisors disputed the Commission's impact study where it envisages passing from a "low" scenario with elasticity of 0.55 to more dynamic scenarios with elasticities of 1 and 1.2.

The Passport offer is however different depending on the country. It has been studied in three national environments:

- The Passport offer distributed by SFR in France
- The “pure” Passport offer as offered by Vodafone to its British clients
- The equivalent Passport offer distributed by Vodafone Germany, which does not use the same commercial name.

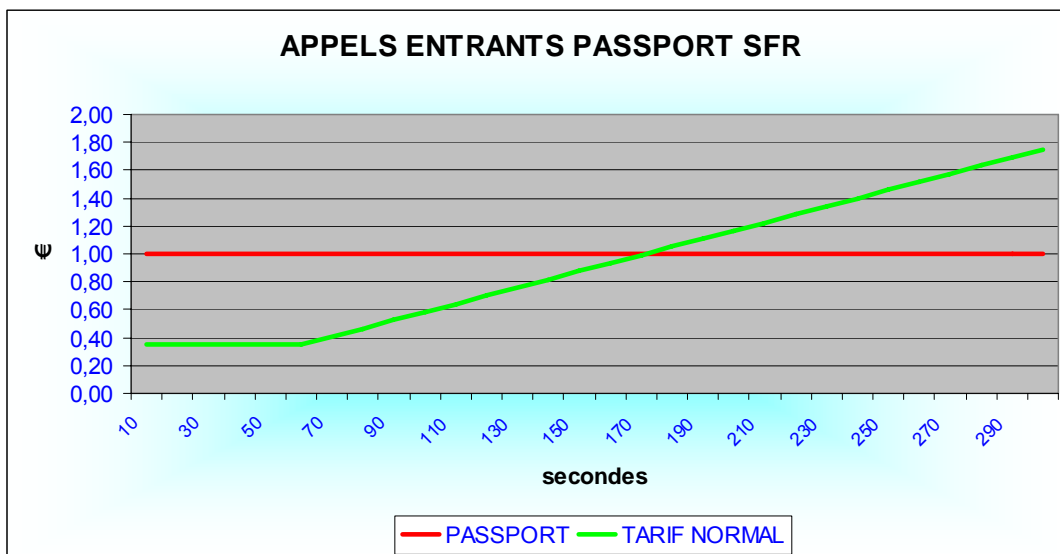
❖ **SFR's PASSPORT offer**

Outbound SFR calls with the PASSPORT offer are only advantageous for consumers compared to the basic roaming offer if the outbound call is longer than 92 s.



Source : ALTEX

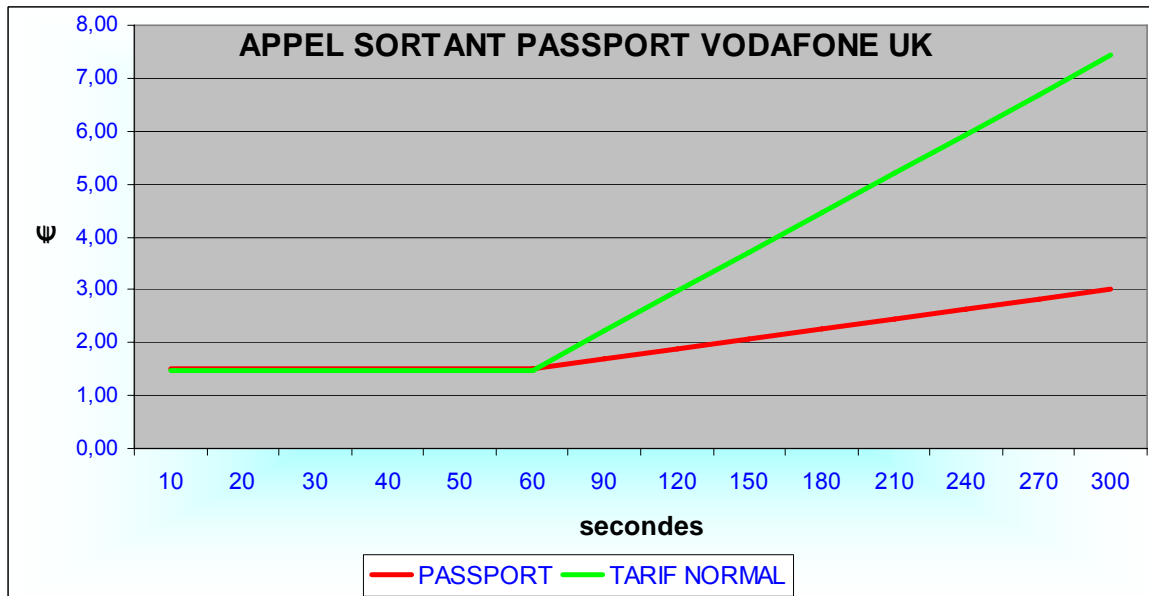
The PASSPORT offer is only favourable for inbound calls if each inbound call is longer than 171 seconds. We must stress again that the offer can only be activated if the inbound call is dialled by an SFR subscriber (SFR network), a circumstance over which the consumer has no direct control.



Source : ALTEX

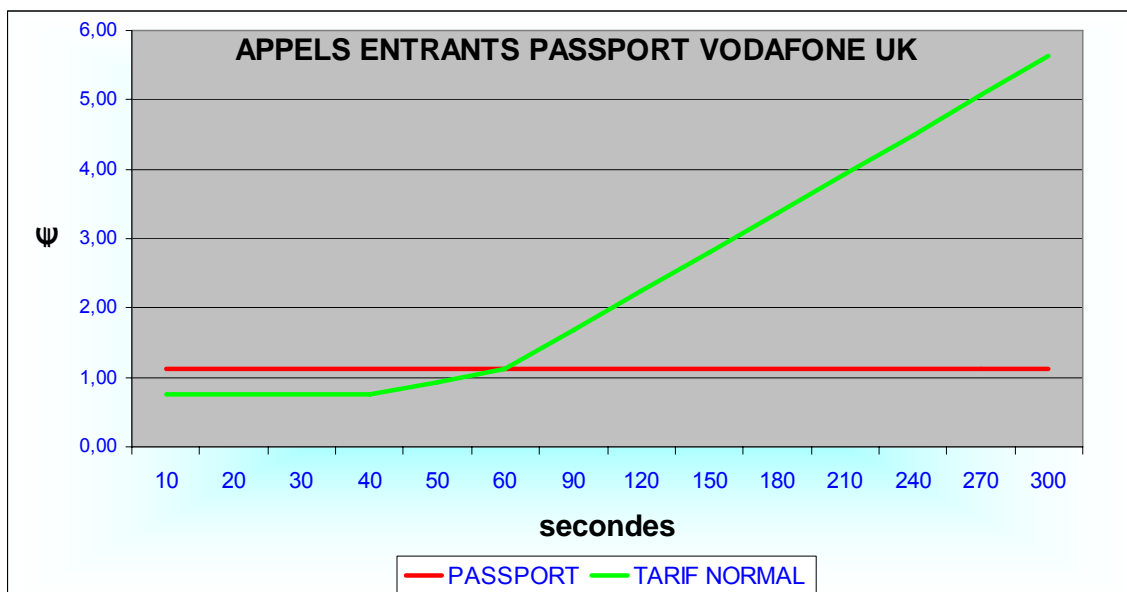
- **The Vodafone UKPASSPORT offer**

For calls lasting less than 1 minute, the cost per outbound call using the PASSPORT offer is almost identical to the standard cost of roaming.



Source: ALTEX

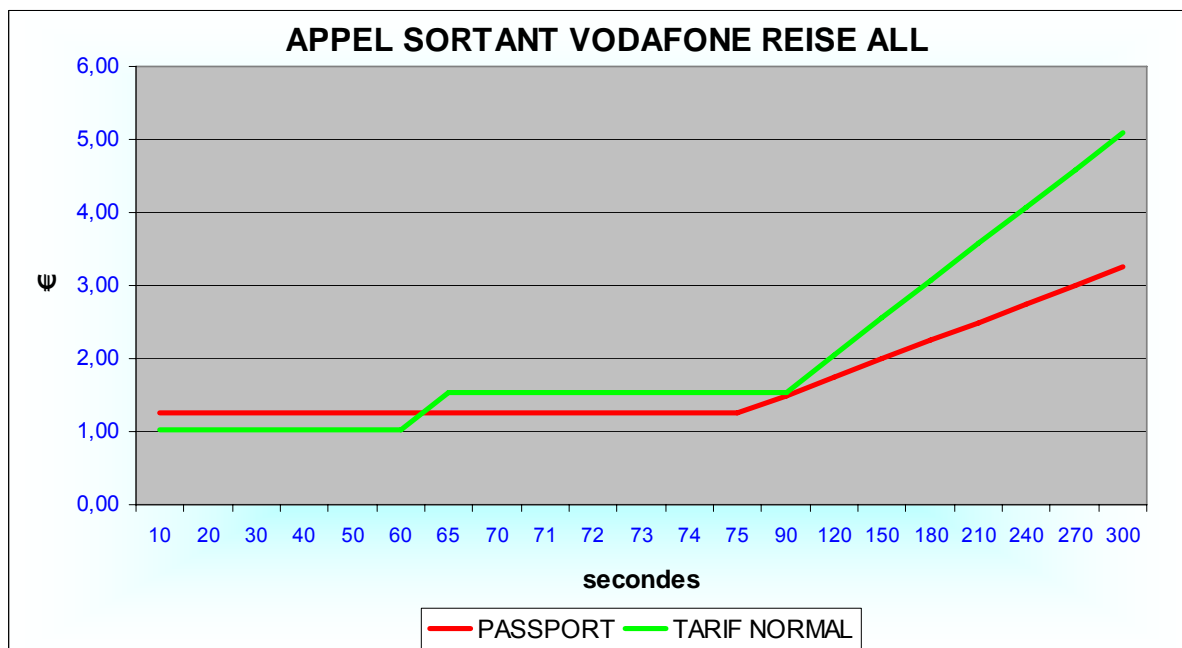
As regards inbound calls, under 1 minute in length, the PASSPORT offer is of no advantage compared to the basic offer. There is no condition regarding the caller (Vodafone network or not).



Source: ALTEX

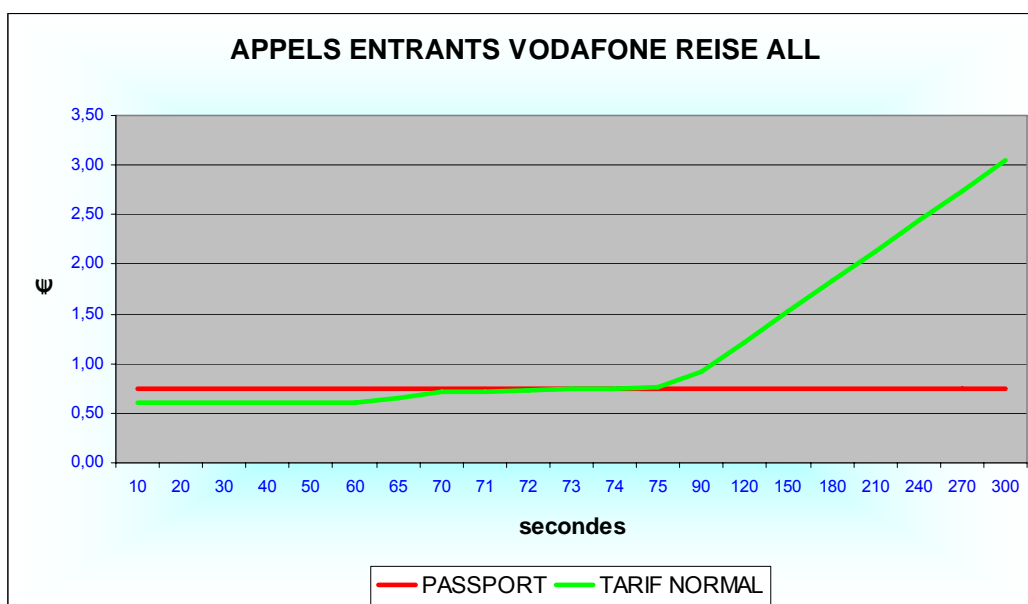
- **Vodafone's equivalent offer in Germany**

On outbound calls, under 1 minute, the equivalent offer (Vodafone Reise) is less advantageous to consumers than the basic rate offer. A Vodafone network must be used to make the outbound call.



Source ALTEX

Under 73 sec., the offer is not advantageous to consumers on inbound calls. There is no condition placed on the origin of the call (Vodafone network or not).



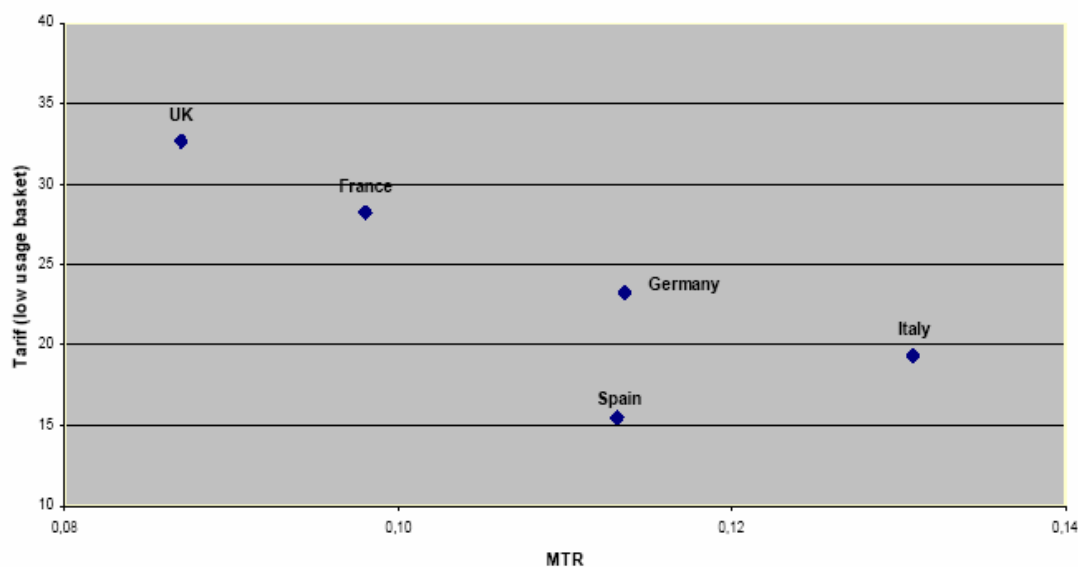
Source ALTEX

3.3. THE PASS-THROUGH DEBATE

Operators argue that the pass-through (passing-on of the decrease in wholesale prices to retail prices) or the “waterbed effect” is something that has already happened as a result of the evolution of MTR prices.

However, studies show that this is not the case in the mobile phone sector. In fact almost the opposite situation might be true – the higher the MTR, the lower the price at which each minute is resold. This situation is not surprising in the context described earlier regarding the wholesale market and the value to be attributed to the MTR.

The waterbed effect



Source: *MOBILE LRIC german PERSPECTIVE*, Dr Jan Krancke , T MOBILE INTERNATIONAL, Biel September 2006

The operators use economic studies relating to sectors that are very different to assert that in a competitive environment any fall in the price of intermediate products is passed on in full to the retail price.

Roaming in a network services industry cannot however be compared to other sectors of the economy. The IOT is not a wholesale price in the traditional sense of the word. It is an invoicing reference like the one that existed in international telephone communications. The reference is used to calculate the balances between the inbound and outbound traffic of the various operators. The costs borne by an operator do not grow as the IOT grows, nor do they fall as the IOT falls. What counts economically is the balance of inbound and outbound IOTs.

Only the balance of IOTs between operators is economically meaningful and can show a commercial surplus or deficit, because the unit of account is always much higher than the technical cost of the operation.

In network economics, the operator receives inbound calls. If it receives one inbound call for every outbound call its margin is unaffected. If the operator is in an unbalanced situation (it terminates fewer calls than the number of calls made by its customers), it has to repay a prorata of the IOT to the operator in surplus, which reduces its total margin accordingly. Conversely, if the operator is in surplus, it receives income from its partners, which increases its total margin accordingly.

The ATKEARNEY calculation of the reduction in the margin is therefore incorrect⁸. The margin of an operator in roaming is not linked to the calculation of a call with an IOT to which a margin is applied.⁹

Furthermore, as at 17 January 2007, there has been no price change associated with new wholesale price agreements (reduction from the 0.72 € estimated by the Commission to the 0.45 € claimed by operators T Mobile, Orange, TIM and Wind in October 2006). This stagnation contradicts the operators' models according to which the pass-through of the reduction in wholesale prices to retail prices takes place naturally and there is therefore no need to regulate the retail price.

The models presented by the operators assume that the pass-through amounts to 80%, whereas the analysis of rates shows a 0% pass-through. The Commission for its part has always considered that the pass-through to consumers was definitely not a reality, which justified its intervention on the retail price.

⁸ ATKEARNEY study, op cit page 17.

⁹ A methodological remark: In absolute terms, the margin in fact falls from 16 to 8 cents according to the assumptions presented, which can be interpreted as a halving of the margin. In fact, the actual margin falls from 18% of the selling price to 15% of the selling price.

4. ANALYSIS OF ISSUES RELATING TO CALCULATIONS OF ELASTICITY AND TRAFFIC STEERING

4.1. LEVELS OF ELASTICITY AND THE BEHAVIOUR OF EUROPEAN CONSUMERS

The lowest level of volume/price elasticity applied by the Commission is -0.55 with options of around -1 and -1.2 . The operators believe that an elasticity of -0.55 is the maximum acceptable level of elasticity.

The debate about elasticities in mobile telecommunication is very confused because the absence of public monitoring of prices and volumes in the field of mobiles over several years has prevented reliable econometric data being built up. In work carried out by ALTEX regarding the mobile cartel in France, there appeared to be an elasticity of -0.7 on the French market based on a series of prices and reconstituted volumes over the years 2000-2002.

In the context of roaming, the position of the operators is to argue that since the market is for the most part professional, elasticity is naturally low. Professionals will not make more calls just because the price is lower. This is of course a short-term view which assumes that the structure of demand will not evolve as a result of lower prices, ignoring the fact that residential customers might make more use of their mobile phones. According to the operators, there is no relationship between the low demand and the price level:

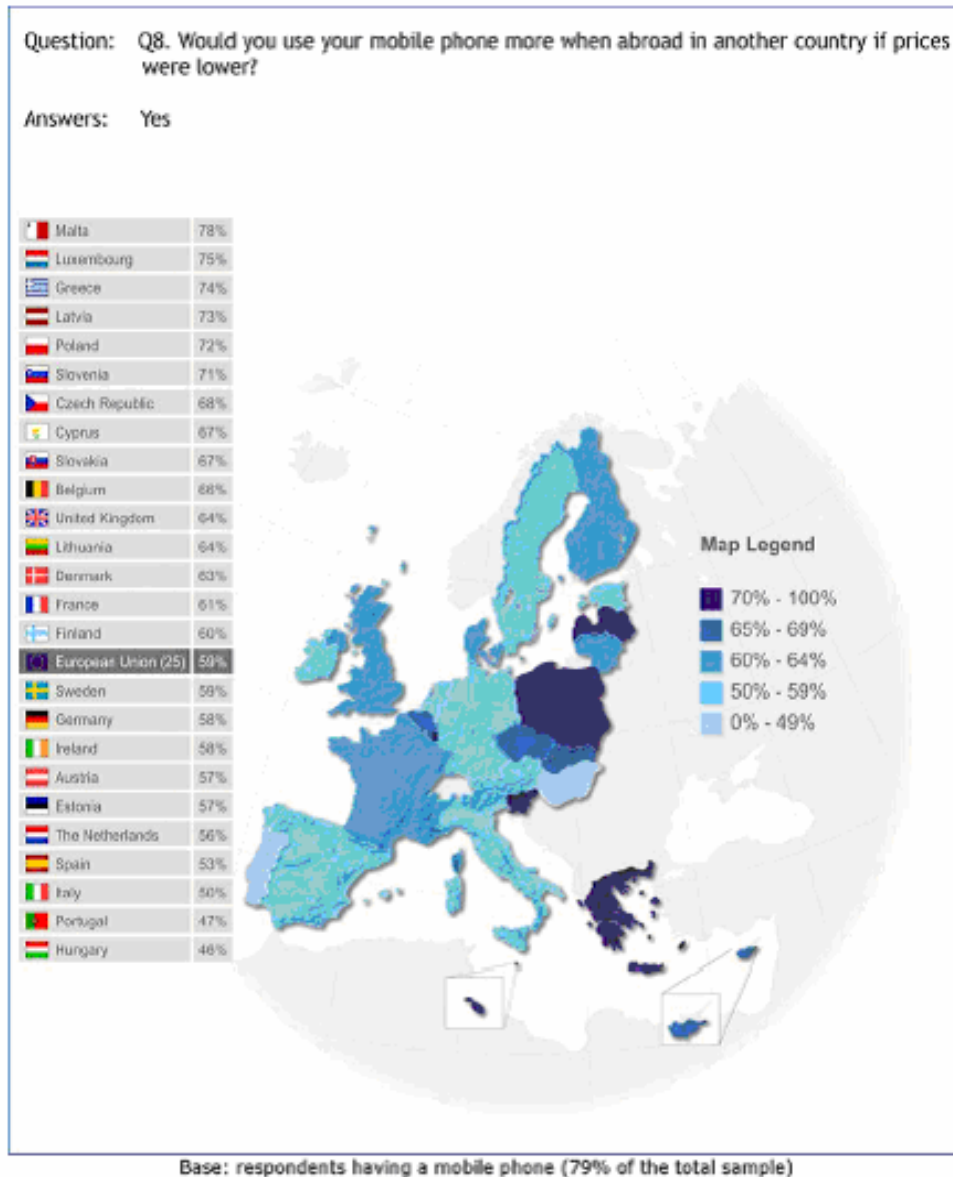
“As a general point, roaming services are used by only business customers and a small share of residential customers to any significant extent. A survey for COMREG found that only around 6% of mobile residential customers make or receive any significant number of roaming calls. A survey for the Finnish regulator found that around half of Finnish mobile subscribers did not make more than 2 roaming calls on trips abroad (and many did not use their phones abroad at all or had not been abroad). The average usage of the [business secret] of Mobilkom’s residential subscribers who make the least use of roaming is only [business secret] minutes of roaming calls a year. While many customers like to have their mobile phones while they are abroad so that they are contactable, they should not be expected to make significant volumes of calls while they are on vacation. Often their communications needs will be less time critical and, in this regard, the COMREG survey found that 44% of the residential customers who used their phone abroad were using their phones mainly for text messaging.”¹⁰

This price dimension is however a clear factor in the barometer published by the Commission regarding mobile services¹¹ in November 2006.

¹⁰ AT KEARNEY CRA Study op.cit.

¹¹ Eurobarometer, Roaming, Nov.2006.

Propensity to use a mobile abroad with lower prices

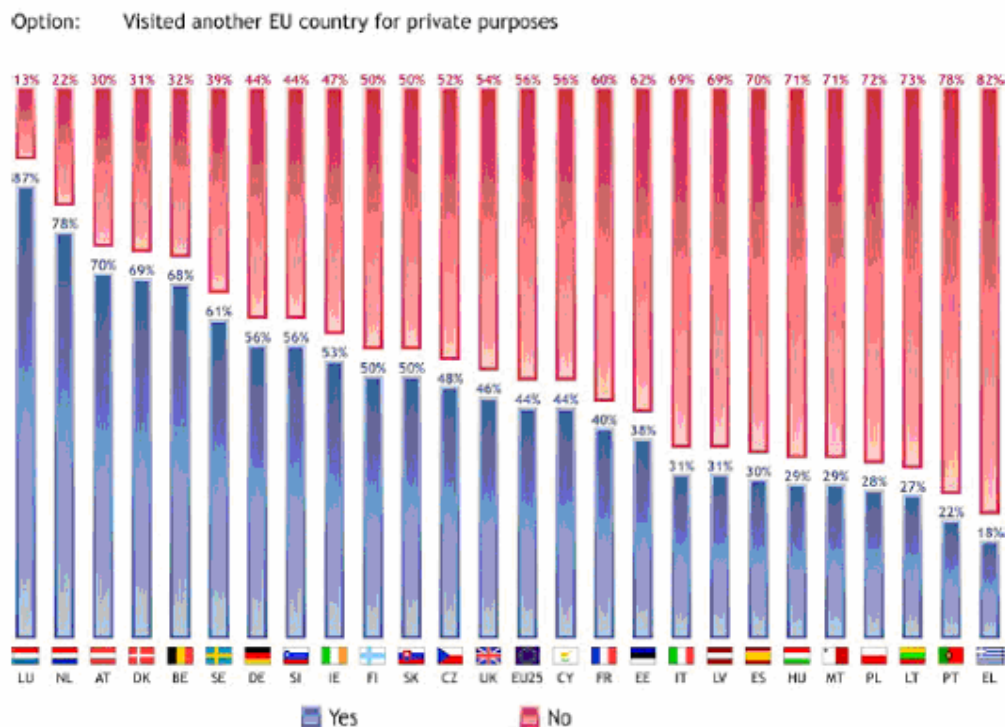


Source *EUROBAROMETER Roaming, nov. 2006*

The AT KEARNEY CRA study takes the analysis to its extreme. Current roaming users are professionals and well-to-do classes. Consequently, the price fall will benefit these two categories. At the same time, the study tries to demonstrate that the price fall will necessarily affect national prices (*see 6.3 below*) and that all users will pay for a roaming price reduction that will essentially benefit companies and the well-heeled classes. **The social concern shown by operators is a new development in the debate but it does not seem to be applied judiciously.**

The GSMA is clearly underestimating the size of mass communication. First of all, personal journeys are relatively numerous and almost equal to the number of journeys taken for other reasons, mainly work-related.

Propensity to travel in Europe for personal reasons

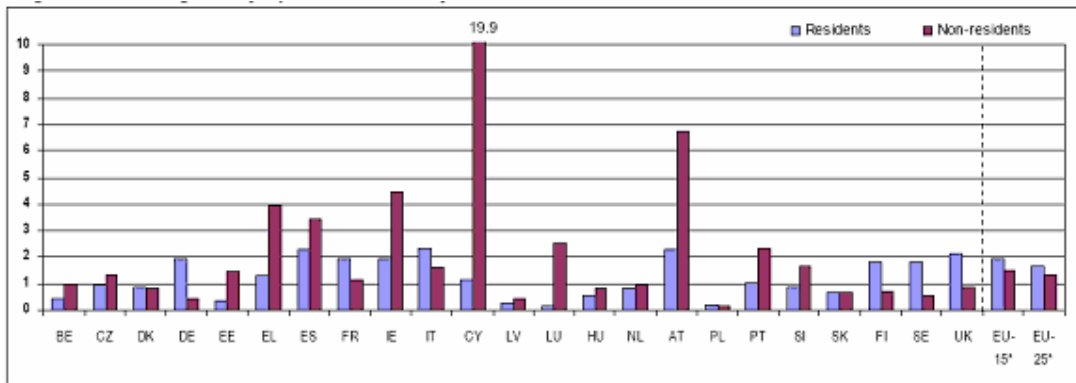


Source: EUROBAROMETER Roaming, nov. 2006

Furthermore, the north-south imbalance and the significance of roaming in the transit countries demonstrate the significance of private roaming flows. These elements are clearly linked to the flow of people making personal journeys rather than the work-related flows, which are by their nature more balanced across the various zones.

If you take the example of overnight stays abroad, country by country, you can see that overnight stays by non-residents per inhabitant are high in Cyprus, Austria, Spain, Greece and Portugal. The relative significance of non-resident overnight stays is an indicator of the flow of people making personal journeys, business stays being very short in foreign countries. Germany, despite being Europe's biggest economy, has very few non-resident overnight stays.

Number of overnight stays per inhabitant



Note: LT and MT: data not available; IE, CY, HU and NL: data for 2002; EL: data for 2000; *: aggregates calculated using available data

Source: EUROSTAT

Equally, if the development of tourist flows is taken into account, the north-south flows are clear and suggest the underlying imbalances that may exist in certain areas and for certain operators in the context of roaming.

Principal tourist flows in Europe

Share of the principal destination represented by the total flows coming from each country



Source: EUROSTAT, 05/2006

It is unreasonable therefore to limit the roaming elasticity to -0.55 if a whole series of indicators tend to demonstrate that there is a strong demand depending on the retail price level.

A remark does need to be made however with regard to the effects of elasticity. The development of volume traffic will necessarily have a bearing on the current roaming axes. The volume effect will therefore increase any imbalances that may exist in roaming flows.

4.2. THE QUESTION OF TRAFFIC STEERING

4.2.1. The general issue of traffic steering

Traffic steering, a solution whereby the client's operator can direct the network on which the call will be made or received, is considered to be something that will promote price competition.

"At the wholesale level, competition can be expected to grow rapidly with the recent development of traffic direction technology. Thus, even for national wholesale markets that are not already effective competition, the lack of competition may only be short-lived and this should be recognised in the design of any regulation to be applied to those markets."¹²

Traffic direction technology creates the opportunity for players with currently small shares to rapidly increase their market share through discounting their prices. The technology also means that individually negotiated roaming prices are likely to become much more common in place of standard IOT prices. This will act to greatly reduce the transparency of an operator's wholesale roaming prices to other operators in the market suggesting that operators will not be able to reach and sustain any coordinated position."¹³

This was the position expressed by the Finnish regulator in December 2005.

"In Finland, traffic direction has not yet led to price competition at whole-sale level and less expensive IOT prices. On the contrary, the average IOT prices of Finnish mobile network operators have risen over the period of 2004-2005, when traffic direction has been used efficiently. Operators who direct traffic to one another's network are able to mutually apply volume discounts. Insofar, hardly any discounts have been paid. This partly results from the fact that price-cut systems have only recently been introduced since traffic direction has become more common. On the other hand, the IOT prices collected by Finnish mobile network operators are still relatively low in comparison with the European level."¹⁴

However, a test carried out for a French user of the Bouygues network visiting Finland confirms that in January 2007 the customer will be invoiced at 1 € per minute, regardless of the Finnish network, even though IOTs are considered to be lower in the Finnish market (50% lower according to the Finnish regulator FICORA).¹⁵

In June 2006, the Norwegian regulator confirmed the importance of traffic steering.

¹² CF Regulation of roaming services- impact on particular markets, CRAI pour Mobilkom Austria, 12 May 2006.

¹³ Idem op.cit.

¹⁴ Decision on significant market power in wholesale market for international roaming in Finland, FICORA Dec 2005.

¹⁵ Cf Op cit, page 10/

“Implementation of increasingly more efficient methods for traffic direction makes the home network capable of, in response to an increase in the visited network’s charges, directing traffic away from the network that has undertaken the price change. Where such exchanging/directing can take place or actually takes place, the mobile networks belonging to the same country must be regarded as being substitutes for each other with regard to the demand side. Statistics obtained by NPT in connection with this analysis show that more and more roaming traffic is directed in accordance with alliance and group affinity and in relation to who gives and who receives discounts. Efficient traffic direction mechanisms have the possibility to direct up to 75 per cent of the traffic, according to information given to the NPT.”¹⁶

Price tests at retail level are also disappointing for roaming out by French consumers in Norway. There is nothing surprising about this because the rates remain fixed by zone and consequently Norway does not benefit from any particular zoning.

This is an example of the truncated debate about roaming, in which economic arguments are used even though there is an over-invoicing situation organised and maintained by the operators. The comments made by national regulators about the roaming market should not hide the reality of tariffs faced by consumers today. It will be up to regulators to fulfil their responsibilities based on their assessment of the development of the market, otherwise, in a debate of this kind, operators will naturally be able to rely on superseded comments by regulators to support their current argument about maintaining the status quo.¹⁷

4.2.2. The real effects of traffic steering: the Irish case

- ***The significance of traffic steering***

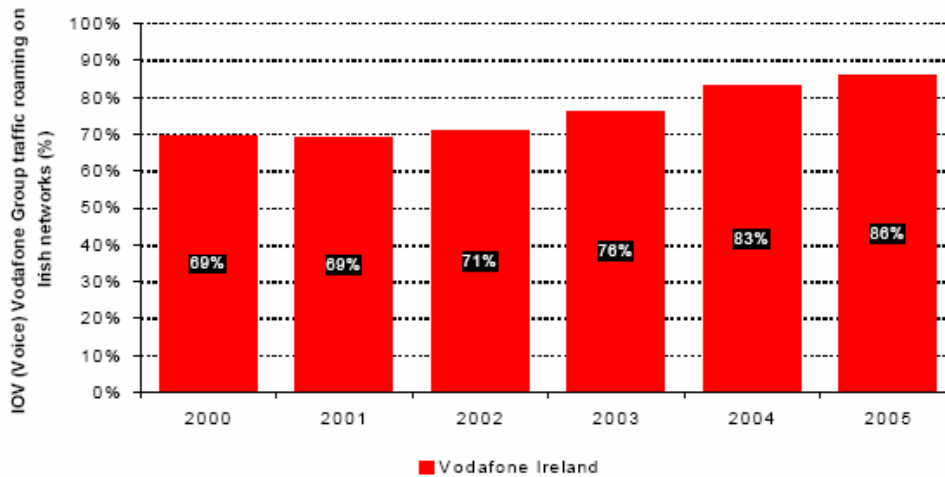
The case of RO in Ireland has been chosen because the regulator COMREG has obtained accurate data about this type of flow¹⁸. We can therefore see that over recent years, in the inbound RO market, operators Vodafone and O2 have been able to corner a majority of the inbound traffic coming from other partner operators, mainly in Europe (for the most part the United Kingdom).

¹⁶ Analysis of the wholesale national market for international roaming on public mobile networks NPT 15 June 2006.

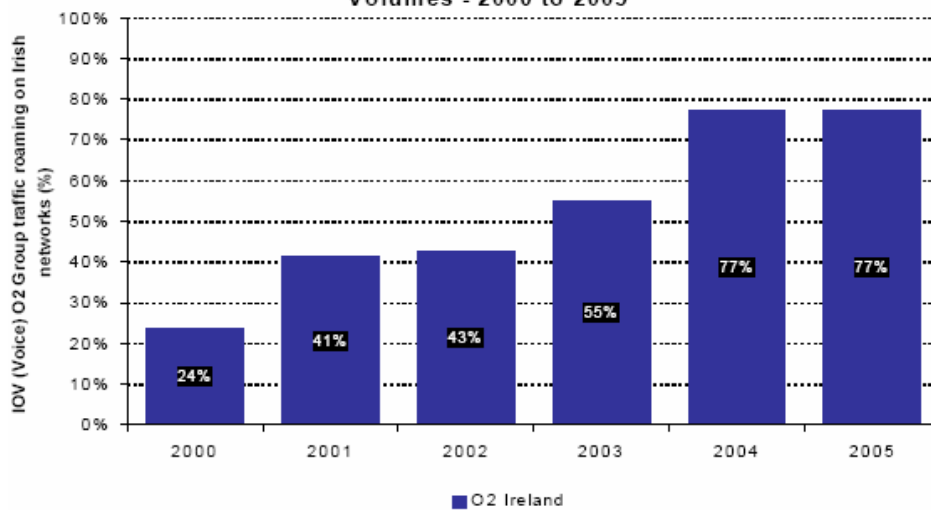
¹⁷ CF Regulation of roaming services- impact on particular markets, CRAI pour Mobilkom Austria, 12 May 2006.

¹⁸ Market analysis, wholesale international roaming, COMREG, April 2006, 6/20.

Vodafone Ireland's share of Vodafone Group Inbound Originating Voice Volumes - 2000 to 2005



O2 Ireland's share of O2 Group Inbound Originating Voice Volumes - 2000 to 2005



- **The absence of visible effects on the retail price**

As regards outbound RO, the tariffs fall between the tariffs found in the French market and those found in the German market. For inbound RO, the Vodafone tariff is higher than the inbound tariffs of French and German operators. As for the O2 tariff, it is a great deal higher than all the tariffs studied here.¹⁹

¹⁹ Note that the difference between the outbound and inbound RO is due to the attractive price of inbound RO in Ireland, for which a special price has been set in respect of 1. (0.72 €vs 1.23 €/per minute).

**EXAMPLES DE UK CLIENT TARIFF (roaming out in IRL)
Estimates in € for a 4 minute call (peak hours, contract)
Mid-2006 tariff**

VODAFONE Clients			
	VODAFONE	O2	METEOR
Outbound RO	3.48	4.35	4.35
Inbound RO	2.9	2.9	2.9
O2 CLIENTS			
	VODAFONE	O2	METEOR
Outbound RO	2.9	2.9	2.9
Inbound RO	5.45	5.45	5.45

Source: COMREG Site

Irish clients roaming in the United Kingdom do not seem to benefit from any particular advantage. One might have thought that the "beneficial" effects of traffic steering in the countries where their operators currently operate would have been passed on to their roaming communications. The inbound and outbound tariffs are at best comparable to the other tariffs applied in Europe.

**EXAMPLES OF IRISH CLIENT TARIFFS (roaming out in the UK)
Estimates in € for a 4 minute call (peak hours, contract)
Mid-2006 tariff**

	UK			
	O2	ORANGE	T MOBILE	VODAFONE
Outbound RO				
METEOR	4.84	4.52	4.52	2.88
O2	2.36	3.96	3.96	3.96
VODAFONE	4.36	4.36	4.36	2.36
Inbound RO	RU			
	O2	ORANGE	T MOBILE	VODAFONE
METEOR				
O2	2.36	3.96	3.96	3.96
VODAFONE	2.36	2.36	2.36	2.36

Source: COMREG Site

No general conclusion can be drawn from this but the test does not confirm that the directing of flows onto partner networks automatically leads to a fall in the retail price.

Other technical proposals aimed at ensuring competition are also ineffective.

"Looking forward, the use of alternatives can be expected to grow including emails and calls made over WiFi hotspots and the use of mobile VoIP calls."

In reality, the immense majority of mobile operators forbid the use of Voice over IP solutions in their data subscription. The suggested alternative does not therefore exist at the moment and cannot be considered to be a competitive pressure.²⁰

5. REGULATION AND WELFARE

5.1. The proxy adjustment method

The Commission's model is based on the income presented by the GSM Association as the total roaming income of operators as retail income.

"Second, the model takes as its point of departure aggregate EU retail revenues from mobile roaming services which according to the GSM Association can be estimated to have reached € 8.53 billion in 2005. It also uses an estimate of aggregate EU per minute wholesale and retail prices, which is based on data provided for the purposes of this impact assessment by various MNOs and NRAs.(Impact assessment, 12 Juillet 2006)"

This has contributed to generating a flow of outbound and inbound roaming of 10.240 billion minutes²¹ in the Commission's impact model.

An adjustment of the model based on the retail income and wholesale income shown in the estimates of the GSM Association and the Commission gives lower results for the volume of roaming minutes. Taking into consideration the difference between retail and wholesale incomes, according to ALTEX, the total revenue of 8.56 Billion represents around 6 billion roaming minutes. Nearly 5 billion would be outgoing roaming minutes and a little over 1 billion would be incoming roaming minutes.

Adjustment of the Commission's impact model

	percentage	volume	current price	current income
total roaming volume		6.01		
outbound minutes	77%	4.63	0.9	4.16
including outbound intl. mins.	80%	3.70	0.9	3.33
including outbound local mins.	20%	0.93	0.9	0.83
inbound minutes	23%	1.38	0.57	0.79
IOT		4.63	0.78	3.61
total income				8.56

Source: ALTEX

Neither the Commission nor the operators provide details of the outbound and inbound flows, which contributes to the lack of transparency of the calculations carried out in the different models.

²⁰ This situation is bound to develop and may represent an alternative, but the regulation of roaming, like other telecommunication services, has to take into account the situation as it is at the time when the market analysis is carried out, not any hypothetical technological and commercial developments which postpone any review of tariffs for the benefit of consumers.

²¹ Income of 8.5 billion for an average tariff of 0.83 € according to the GSM Association.

ALTEX makes estimates by quantifying the volumes involved.

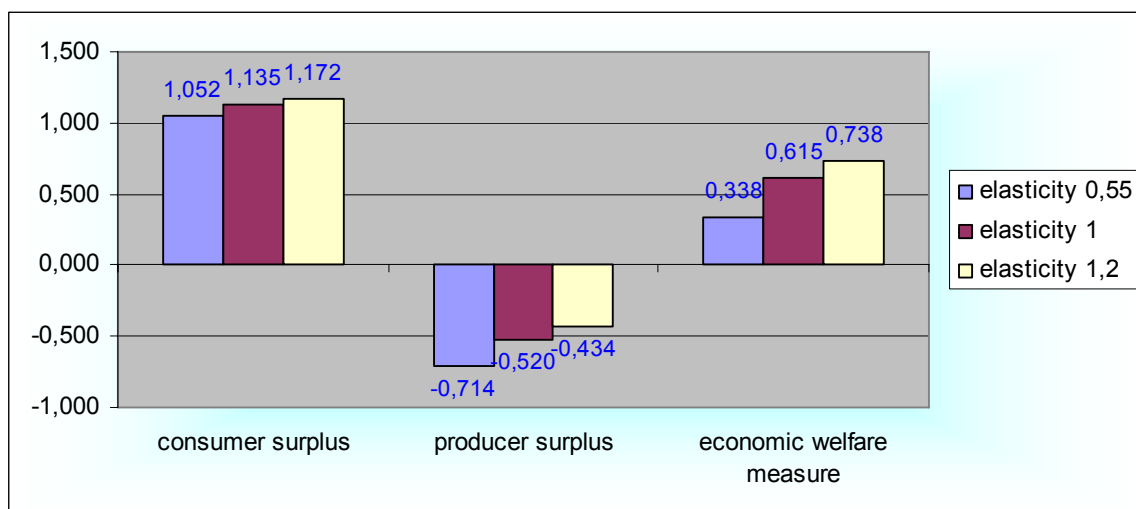
ALTEX does not strictly speaking use the models. The Commission model and that of ATKEARNEY/CRAI are not published and cannot therefore be disputed. ALTEX only uses the wholesale and retail price variations, the volume/price elasticities based on quantified volumes, the roaming costs as mentioned in the Commission's study.

An adjustment test based on the volumes of minutes used by the Commission shows that the results are relatively close, which seems to show the relevance of the adjustment. We will consider that the simplified calculations are "proxies" of the complex models, which bring other variables into play. *Appendix E*

5.2. THE COMMISSION'S MODEL IN SCENARIO 1²²

Scenario 1 corresponds to the tendential scenario without regulatory intervention. The outbound retail minute is 72 cents and the inbound retail minute is 48 cents.

Results of the Commission's scenario 1 -Re-adjusted by the proxy method, Bio Euros



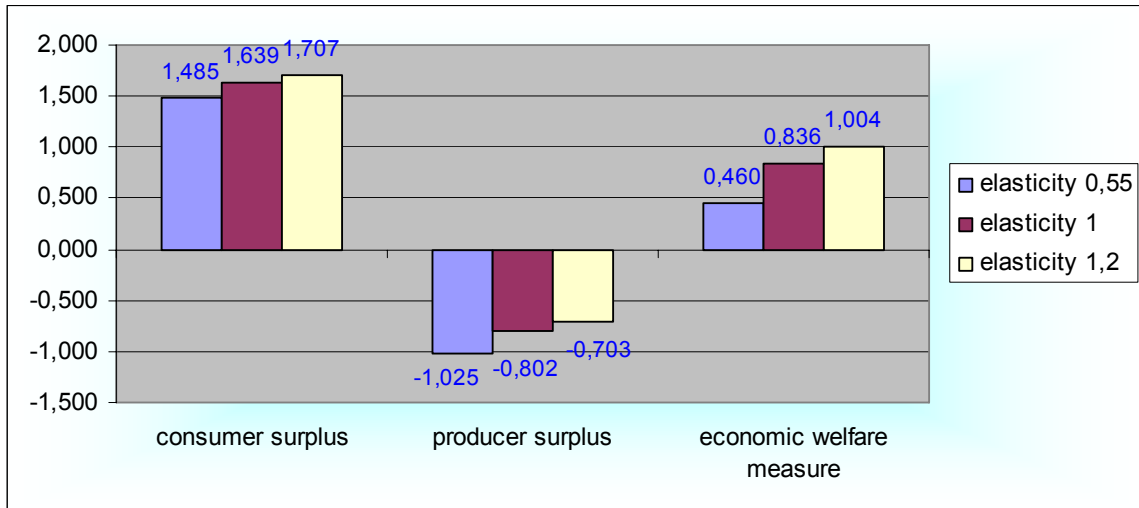
Source: ALTEX

²² All the Commission's scenarios are recalculated based on the actual volumes of minutes using the proxy model.

5.3. The Commission’s model in scenario 2

Scenario 2 corresponds to the wholesale price regulation only scenario. The retail prices are estimated to reach 66 cents for outbound traffic and 44 cents for inbound traffic.

Results of the Commission’s scenario 2 -Re-adjusted by the proxy method, Bio Euros

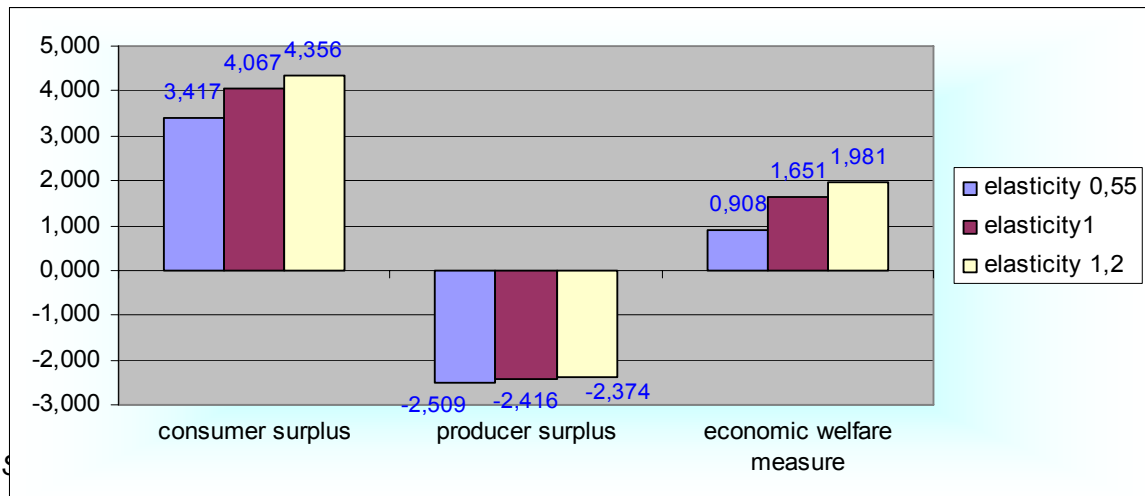


Source: ALTEX

5.4. THE COMMISSION’S MODEL IN SCENARIO 3

Scenario 3 corresponds to the simultaneous regulation of wholesale and retail prices. The national outbound RI wholesale price is twice the MTR, the international outbound RI wholesale price is three times the MTR; the retail price is the same as the wholesale price with a margin of 30%. The retail price of inbound calls is equal to 130% of the MTR.

Results of the Commission’s scenario 3 -Re-adjusted by the proxy method, Bio Euros



5.5. THE PROPOSAL MADE BY CONSUMER ASSOCIATIONS

In the context of the Commission's scenario 3, they propose having a wholesale price for national outbound calls that is equivalent to that of a local call, i.e. 1.5 MTR, with a margin of 30% for retail prices, and wholesale price for international outbound calls that is equivalent to twice the MTR, with a margin of 30% for retail prices.

This proposal naturally increases the overall benefit while reducing the prices paid by consumers and reducing the income of operators. With an elasticity of -0.55 , the "welfare" gap is 250 million € compared to the Commission's proposal.

Consumer associations	SCENARIO		
	elasticity 0.55	elasticity 1	elasticity 1.2
consumer surplus	4,523	5,518	5,960
producer surplus	-3,364	-3,410	-3,431
economic welfare measure	1,159	2,107	2,529

6. ANALYSIS OF ECONOMIC IMPACTS

6.1. Financial impact on the mobile telecommunication sector

Financial estimates (static analysis) of any loss of margin by operators stand at between 2.4 billion € and 2.5 billion € for the Commission's corrected model. The *medium case* of the operators' consultants is 1.6 billion €. The consumers' proposals stand at 3.5 billion €.

6.1.1. Assessment of the impact for the mobile subscriber in Europe

The impact of the regulation (Commission's scenario with retail price regulation) on the reduction in the margins would be between 0.31 € and 0.63 € per month and per client, i.e. an average loss of EBITDA of between 2.7% and 5.4% for an EBITDA equal to 35% of the ARPU (Average Revenue Per User) (based on a monthly ARPU of 33€).

Distribution of the loss of margin in the mobile sector in Europe according to the different scenarios

OPERATORS SCENARIO	customers (millions)	Impact (millions €)	Monthly loss of margin per client (€)	loss of margin per EBITDA (35% of ARPU)
mobile customers	426	1,600	0.31	2.7%
roamers	147	1,600	0.91	7.9%
COMMISSION SCENARIO	customers (millions)	Impact (millions €)	Monthly loss of margin per client (€)	loss of margin per EBITDA (35% of ARPU)
mobile customers	426	2,500	0.49	4.2%
roamers	147	2,500	1.42	12.3%
BEUC SCENARIO	customers (millions)	Impact (millions €)	Monthly loss of margin per client (€)	loss of margin per EBITDA (35% of ARPU)
mobile customers	426	3,500	0.68	5.9%
roamers	147	3,500	1.98	17.2%

Source: ALTEX

6.1.2. Impact on investments

The GSM Association predicts that investments in the networks will be reduced by 500 million € following decisions on roaming regulation.

This means that operators will reduce their investments by 100 million per year over an amortisation period of 5 years, unless it is considered to be a permanent reduction of investments over the next 5 years.

If only the network operators in the main 5 European markets are considered (France, UK, Germany, Italy, Spain), the number of operators is 17. According to the assumptions made above, and referring only to the largest networks, the extent of the reduction in investments concerned would therefore be between 5 and 30 million € per year. An operator like Orange invests over 2 billion € in Europe every year on mobile networks, the reduction associated with roaming would therefore represent between 0.25% and 1.5% of total investments. In the short-term evolution of investments, this variation is barely noticeable. Between the first half of 2005 and the first half of 2006, the fall in mobile investments in France was 9%.

The reduction of investments as it would be implemented by operators might have regulatory consequences in terms of the obligation to cover the territory and to cover no-coverage areas. If investments are reduced in dense areas, there should be a loss of service quality.

But why would all operators reduce their investments in a coordinated way?

Given that we supposedly have a competitive market, operators who maintained their investments would benefit from a flow of customers from operators who had decided to reduce their investments. Contrary to the suggestions made by the GSM association, the withdrawal scenario cannot be generalised, unless it is considered to be part of a concerted and therefore anti-competitive practice. The low financial stakes might also lead some operators to adopt differentiation strategies.²³

According to the GSMA, the reduction in investments would take place in areas where base stations would no longer be profitable. The small margin earned on tourist base stations would lead to their closure. This profitability per station approach is astonishing for a network business. An operator can in fact decide to withdraw from a local market, at which point, if there is no station present, a new operator will arrive and will tend to capture all of the potential local market. The station may therefore become profitable. This is the competitive effect of not taking the national network logic into consideration. If the customer strongly prioritises coverage in this area, he will tend to choose the operator that covers this area with the appropriate roaming agreements.

In fact, roaming would only be part of the threat. The Mobilkom study stresses that numerous non-urban sites in the country make a negative contribution to the operator's business, but does that lead to the operator deciding to dismantle base stations? What about the licences held by mobile operators that more often than not include coverage obligations requiring them to deploy across a major part of the territory?

In the specific case of no-coverage areas which may result from an adjustment of roaming tariffs, appropriate policies for coverage in the form of a sharing of infrastructure cannot be excluded, assuming that the network effects do not come into play and that the duties to ensure territorial coverage are not fulfilled. However, the implementation of these solutions seems to represent a much smaller collective cost than the surcharging of roaming calls.

6.1.3. A cartelised conception of the market

The arguments put forward by operators in this example regarding investments would only be valid in the context of a cartelised approach to the mobile market. All the demonstrations consist of proving that, faced with a change in the rules of the game, operators will all adopt the same strategy as if there was only one way of positioning themselves with regard to roaming and mobile services in general.

Dominant operators less sensitive to the loss of margin on roaming hide behind operators who are more dependent on roaming in order to justify maintaining the status quo. This situation also existed with regard to fixed international traffic, with the resulting payments of international income for local operators who do not benefit from a high ARPU. This situation is tending to disappear with the introduction of competition in the fixed telephony sector in numerous countries.

²³ These comments are only valid of course if the mobile markets are considered to be operating in a fully competitive environment.

6.2. MPACT: CASE STUDY

6.2.1. The case of Vodafone

An analysis of Vodafone's accounts for the financial year ending in 2006 tends to show that for an operator of this profile the impact of regulation is almost nil.

It is important to note that Vodafone is in considerable deficit with more roaming out for its own customers around the world than roaming in for visitors to its own networks.

The option applied corresponds to 32 cents for the IOT, 43 cents as the retail price with an elasticity of 0.55. The balance between losses and gains on the two roaming items (in and out) is negative by between 130 and 135 million €, i.e. a reduction of 0.5% on the EBITDA rate for the scope under examination.²⁴ Naturally, the total share of roaming in the income corrected by the impact of roaming falls from 7 to 4.4%, but the profitability of roaming tends to improve with a lessening of IOT costs.

A certain amount of re-stating has been carried out in order to arrive at the results presented below²⁵:

Vodafone's financial data are expressed in €, after converting £ into € at a rate of 1.5 € per 1 £.

The operator's total business in Europe has been recalculated based on a Europe coefficient of 66%.

For Europe roaming, a share of 80% has been taken as being intra-European roaming. The roaming in and out flows in Europe are equivalent to the shares recorded by the group at world level.

In the case of Vodafone, the group logic that authorises specific IOT agreements is not taken into account. In any case, the devices included in these agreements cannot contribute to reducing the impact of roaming regulation. The Passport offer contributes to keeping traffic on the group's networks by reducing the effects of traffic imbalance leading to a net payment to other operators. The price effect of Passport is taken into account automatically because the regulation tends to be more favourable than the Passport offer (see comments about the Passport offer above).

²⁴ This is an estimated calculation based on figures published by Vodafone. The scope studied corresponds globally to 66% of the Vodafone group.

²⁵ Depending on the actual figures that might be published by Vodafone, there might be a slight difference in terms of a different balance between roaming in and out in the European area, but it is fairly improbable that this would alter the order of magnitude of the impact of a reduction in the wholesale and retail price of roaming.

**Calculation of the impact of a roaming regulation in Europe
The case of operator Vodafone**

Vodafone	TOTAL Vodafone	Vodafone EECbefor regulation	Vodafone EECafter regulation
Total income	38,822	25,622	
Total operating costs + net other revenues	21,527	14,207	
Voice income	32,240	21,278	
Other income	3,830		
Roaming out	2,374	1,567	
Roaming in	1,034	682	
Total roaming	3,408	2,249	
Including roaming Europe	2,727	1,800	
Including roaming outside Europe	682	450	
Total voice excl roaming	28,831	19,029	
Roaming share	8.8%	8.8%	
Adjusted operating profit	14,730		
EBITDA	17,295	11,415	
Roaming share of EBITDA	20%		
Customer income Europe		1,254	799
Estimated value per customer minute		0.85	
Roaming minutes of customers in Europe		1,475	1,880
Visitor roaming Europe		80%	
Visitor income Europe		546	290
Estimated IOT minute value		0.8	
Roaming minutes of visitors in Europe		682	908
Customer IOT cost Europe		1,180	602
Total roaming		1,800	1,090
Reduction in income			0.39
Total voice income			20,568
Total income excl roaming		23,823	23,823
Total income incl roaming		25,622	24,912
Operating costs excl IOT Europe		13,264	
Visitor surcharge			68
Operating costs incl IOT Europe			13,933
Corrected EBITDA			10,979
EBITDA rate	44.55%	44.55%	44.07%
Roaming share of turnover		7.0%	4.4%
Contribution of roaming to EBITDA		401	197
Loss of contribution to EBITDA			204

Source: ALTEX

6.2.2. The case of TELENOR

Telenor is claimed to receive 8% of its income from roaming. The figure is relative because this operator has an excess of RO over RI, which means that it has a large RO income but incurs a large share of costs. The RI share should account for around 210 million KOR in 2004 out of a total income of 11,734 Million NOK, i.e. 1.8%. The balance of roaming income corresponds to roaming income from Telenor customers.

The TELENOR MOBILE roaming business

	2004	2005
Total income	11,734	12,293
EBITDA	4,283	4,471
Estimated RI minutes	32	35
Estimated RI income	210	215
RI share	1.8%	1.7%
Estimated RO minutes	128	140
PRICE - NOK	5,8	5.8
Estimated RO income	742.4	812
RO share	6.3%	6.6%
Roaming total	952.4	1027
Roaming share	8.1%	8.4%

Source: ALTEX

The impact of the regulation on an operator with this profile is limited. The IOT reduction lessens the cost of roaming by customers abroad while the operator only loses interconnection income on its own network on a small volume.

6.3. ANALYSIS OF THE REBALANCING RISK

A fundamental point made by the aforementioned consultants and operators is that the impact model should take into account the loss of advantage to customers resulting from a rise in retail prices for national mobile services. The threat is therefore patently clear: any loss of income associated with a regulation of roaming prices will lead to a retaliatory measure on the final retail price. The argument is financial; the profitability of operators is under threat and measures must be taken to recover the levels of profitability they had prior to the regulation.

In the framework of MTR regulation, this kind of measure is inconceivable because the loss associated with roaming is not associated with the operation of the national network. Either the network visited already supports the traffic, or this traffic increases as a result of the fall in retail prices due to the action of elasticity. One cannot therefore conceive of a mechanical effect of a modification of tariffs on current network operation costs, unless European operators were to implement an extra-economic concerted practice.

7. CONCLUSION

The evolution of roaming pricing in Europe can be divided into two stages.

On the one hand there is the questioning of the retail prices charged by operators, who burden customers with payments that ignore economic reality. These customers are required to finance an infrastructure not at a marginal cost but at the full cost, as if one had to specifically develop equipment for their personal roaming needs, which is clearly not the case.

Surplus operator infrastructure does need to be completed on the margins, but that is a network densification investment, less onerous than a coverage investment in the strict sense. If you take motorway tolls as an example, it wouldn't occur to anyone to charge foreigners more than residents; such an approach would in any case be reprehensible based on the principle of non-discrimination according to nationality.

On the other hand, there is the need to ensure coverage in the mobile infrastructure that considers the reality of travel by Europeans. Instead of making Europeans who travel pay, the principle could be to associate the regulation with a European infrastructure policy that would allow operators who invest proportionally more in taking care of foreign flows to receive a contribution ensuring the equalisation of financial investment charges, which is why supervision of these operators is desirable.

APPENDIX A

Roaming out (RO) activities are communication flows associated with journeys made by customers outside the national coverage of their operators. There are a few cases of national roaming but generally speaking, in Europe, the majority of national traffic is taken care of directly by each operator; the other cases are associated with MVNO activities.

At international level, the activities of operators depend on access to a national infrastructure, since no foreign operator can build its own infrastructure without having national operator status.

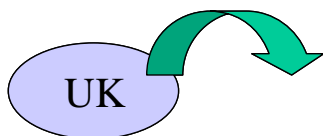
The first distinction to be made in RO concerns outbound flows (calls made by the customer) and inbound flows (calls received by the customer).

Calls made (outbound RO) can be subdivided into calls made internationally (often to the country of origin) and calls made to interconnected correspondents on the national network visited (with all the fixed and mobile interconnections available on this network).

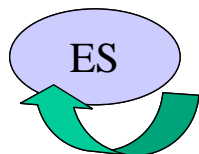
Calls received (inbound RO) correspond to two types of inbound calls. The great majority correspond to calls made from the country of origin of the customer, which are therefore dialled as national calls. The calls are routed to the visited network to become inbound RO calls. Another form of inbound call is calls dialled on the interconnected network visited, but in this case, given the call recipient's number, the call is routed by the visited network as an international call for the caller and then re-enters the visited network as an inbound RO call.²⁶

ROAMING OUT (RO): 4 DIFFERENT FLOWS

Outbound Roaming Out



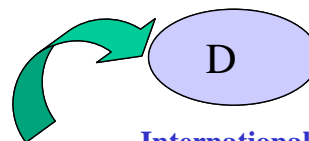
**International
outbound
roaming
out**



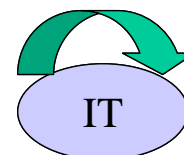
**National outbound
roaming out**

Source: ALTEX

Inbound Roaming In



**International
inbound
roaming out**



**National inbound
roaming out**

²⁶ Local inbound calls are therefore included among the inbound RO calls.

Roaming in

Roaming in (RI) activities are symmetrical with RO activities. They involve national operators taking care of the calls of visiting customers from other foreign networks. This is where the link between RO and RI is established. In the retail market, the visiting client is charged in the context of a RO call (pricing outside his national network); it is his operator that buys the RI service wholesale from the national operator.

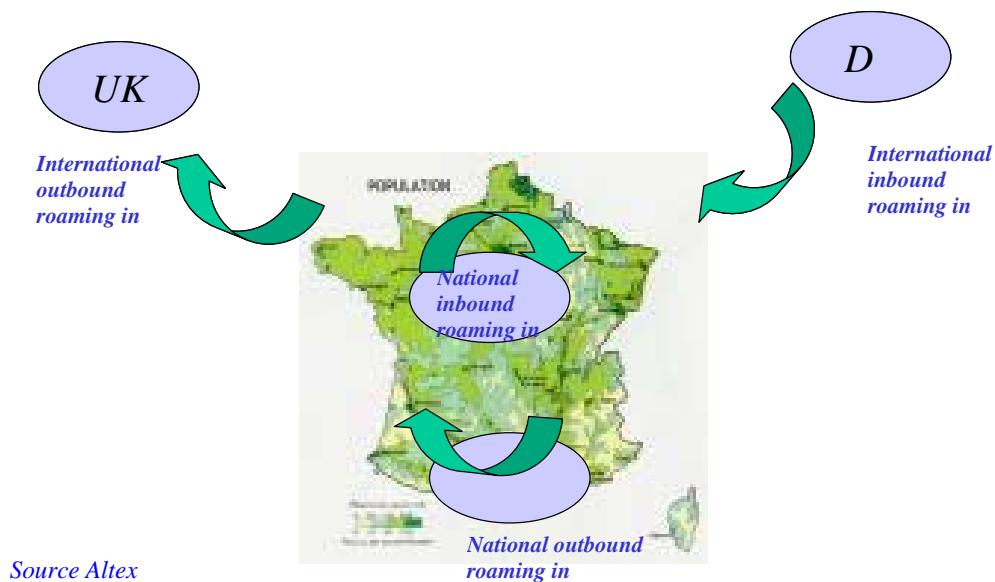
The two outbound and inbound activities can be found in RI:

- Outbound RI calls correspond to two types of calls: international outbound calls and outbound calls to the interconnected network visited²⁷.
- Inbound RI calls correspond to inbound calls dialled as national calls in the country of origin, routed as RO calls to reach the customer in the visited country. There may be calls dialled directly on the national visited network. The call has to be transformed into an international outbound call, fixed or mobile depending on its origin, to the customer's network and then re-routed to the national visited network as an inbound RO call for the final recipient. The complexity of the routing of inbound national calls is naturally a result of the national dialling, which automatically routes calls according to the number called. In order to avoid these complex flows, subscriber databases would have to be managed and consulted in order to identify customers who are already on a national interconnection.²⁸

ROAMING IN (RI): 4 DIFFERENT FLOWS

Outbound roaming in

Inbound roaming in



²⁷ The notion of interconnected network corresponds to the notion of a national network in which all the fixed and mobile networks are connected and receive calls as national calls.

²⁸ Local inbound calls create a dual flow: an international outbound mobile or fixed call according to the network used by the caller to make the call and then an RO call to the recipient.

International traffic

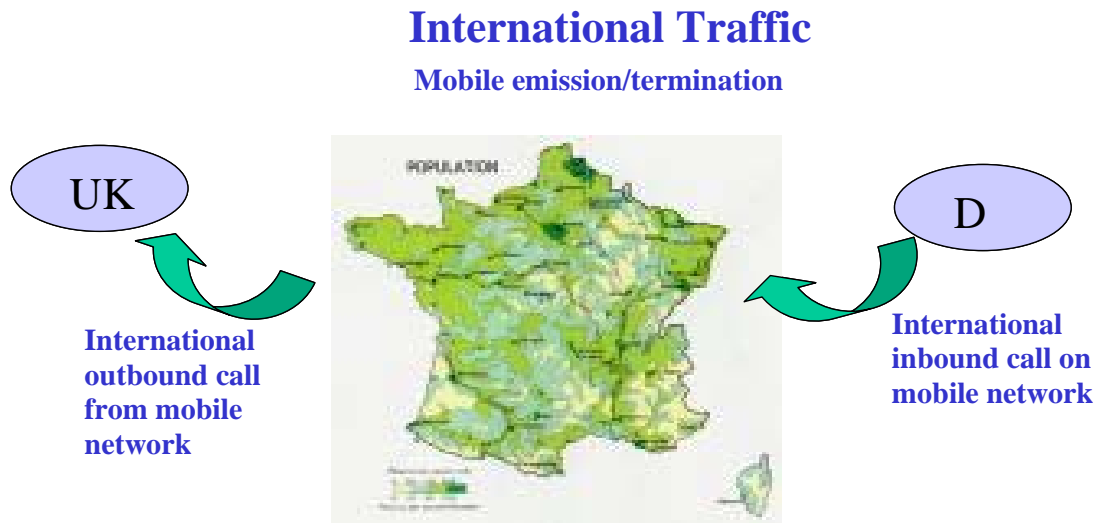
International traffic corresponds to international calls concerning mobile customers. International activity was discussed at the beginning of the debate about European roaming, particularly with regard to the tariff repository for outbound calls in the host country. This proposal was later abandoned and consequently international traffic is no longer the subject of regulation plans, although it would be appropriate to deal with this matter as well in the context of a European single market policy.

The most obvious part of this activity relates to international outbound calls from the mobile network. These are primarily calls dialled by customers who are residents of the countries in which the operator to which they are subscribed operates.

The other part of international activity corresponds to the receiving of calls (inbound calls) on the mobile network from calls dialled outside the national interconnected network.

If a mobile is in RO and it calls a correspondent located neither in the territory visited nor in the area covered in the country of origin, the call is an international call. It will be a RO operation that will be billed according to the location of the person called. If this same mobile is called, the call will be an international inbound call on the mobile network of the person called (charged as such) which is then routed to the country in which the customer is located in inbound RO mode.

INTERNATIONAL TRAFFIC: 2 DIFFERENT FLOWS



Source : ALTEX

APPENDIX B**The criticisms in the AT KEARNEY CRA international report of the Commission's impact model**

	ATKEARNEY CRA	Default parameters of the AT/CRA model
Reality of price reductions	Failure to take into account the price reductions already announced by operators	A reduction in IOTs has already been announced
Pass through Waterbed	Low rate of transfer of wholesale price reductions to the retail price	80%
Rebalancing	Failure to take into account the rebalancing of national prices	80%
Investments	Failure to take into account the impact on investments	Reduction of 500 million €
International roaming	Failure to take into account the resulting loss of income on international roaming	20%
Bundles	Abandonment of existing bundles because they do not conform to the first draft of the regulation	Passport offer for example
Discrimination by operator	Impact on certain operators who are more dependent on roaming (strongly positive balance)	Particularly Mobilkom Austria
Transfert of the surplus to the end customer	Wrong assessment of the benefit transferred from the business to the consumer.	80%
Elasticity	Unfounded elasticities of the scenario	- 0.55 maximum acceptable

Source: ALTEX

APPENDIX C**ORANGE France post-paid in Italy**

Here are the best international roaming prices for a two minute call from a mobile to a fixed line for the available mobile operators in ITALY. Wherever information on special conditions related to the prices was submitted by the operator (as indicated by [☐]), such information will appear if you place the mouse on the prices. However, as this site is a tool for comparison purposes only, please always verify with the operator for conditions and offers.

	Outgoing When you call home (FRANCE) Call*	SMS	When you call local (ITALY) Call*	SMS	Incoming When you receive Call*	SMS
3 Italia	1,00 EUR [☐] "subscription to pass vacances option necessary: from July to October. for 5 EUR. get 10 minutes for outgoing calls at 50% off standard roaming tariffs + 10 minutes for incoming calls offered; European Union coverage"	0,28 EUR	1,00 EUR [☐] "subscription to pass vacances option necessary: from July to October. for 5 EUR. get 10 minutes for outgoing calls at 50% off standard roaming tariffs + 10 minutes for incoming calls offered; European Union coverage"	0,28 EUR	free [☐] subscription to pass vacances option necessary : from July to October. for 5 EUR. get 10 minutes for free outgoing calls at 50% off standard roaming tariffs + 10 minutes for incoming calls offered	
TIM	1,00 EUR [☐] "subscription to pass vacances option necessary: from July to October. for 5 EUR. get 10 minutes for outgoing calls at 50% off standard roaming tariffs + 10 minutes for incoming calls offered; European Union coverage"	0,28 EUR	1,00 EUR [☐] "subscription to pass vacances option necessary: from July to October. for 5 EUR. get 10 minutes for outgoing calls at 50% off standard roaming tariffs + 10 minutes for incoming calls offered; European Union coverage"	0,28 EUR	free [☐] subscription to pass vacances option necessary : from July to October. for 5 EUR. get 10 minutes for free outgoing calls at 50% off standard roaming tariffs + 10 minutes for incoming calls offered	
Vodafone	1,00 EUR [☐] "subscription to pass vacances option necessary: from July to October. for 5 EUR. get 10 minutes for outgoing calls at 50% off standard roaming tariffs + 10 minutes for incoming calls offered; European Union coverage"	0,28 EUR	1,00 EUR [☐] "subscription to pass vacances option necessary: from July to October. for 5 EUR. get 10 minutes for outgoing calls at 50% off standard roaming tariffs + 10 minutes for incoming calls offered; European Union coverage"	0,28 EUR	free [☐] subscription to pass vacances option necessary : from July to October. for 5 EUR. get 10 minutes for free outgoing calls at 50% off standard roaming tariffs + 10 minutes for incoming calls offered	
Wind	1,00 EUR [☐] "subscription to pass vacances option necessary: from July to October. for 5 EUR. get 10 minutes for outgoing calls at 50% off standard roaming tariffs + 10 minutes for incoming calls offered; European Union coverage"	0,28 EUR	1,00 EUR [☐] "subscription to pass vacances option necessary: from July to October. for 5 EUR. get 10 minutes for outgoing calls at 50% off standard roaming tariffs + 10 minutes for incoming calls offered; European Union coverage"	0,28 EUR	free [☐] subscription to pass vacances option necessary : from July to October. for 5 EUR. get 10 minutes for free outgoing calls at 50% off standard roaming tariffs + 10 minutes for incoming calls offered	free

Outgoing		Incoming	
When you call home (FRANCE)	When you call local (ITALY)	When you receive	
Call*	SMS	Call*	SMS
to pass vacances option necessary: from July to October. for 5 EUR. get 10 minutes for outgoing calls at 50% off standard roaming tariffs + 10 minutes for incoming calls offered; European Union coverage"	EUR	"subscription to pass vacances option necessary: from July to October. for 5 EUR. get 10 minutes for outgoing calls at 50% off standard roaming tariffs + 10 minutes for incoming calls offered; European Union coverage"	EUR
		to pass vacances option necessary : from July to October. for 5 EUR. get 10 minutes for outgoing calls at 50% off standard roaming tariffs + 10 minutes for incoming calls offered	

*

Based on a 2 minutes call duration, to a fixed line, during peak hours.

Best roaming fare, if applicable.

Source: GSM Association

APPENDIX D**T MOBILE France post-paid in Poland**

Here are the best international roaming prices for a two minute call from a mobile to a fixed line for the available mobile operators in POLAND. Wherever information on special conditions related to the prices was submitted by the operator (as indicated by [☐]), such information will appear if you place the mouse on the prices. However, as this site is a tool for comparison purposes only, please always verify with the operator for conditions and offers.

	Outgoing		Incoming
	When you call home (GERMANY)	When you call local (POLAND)	When you receive
	Call* SMS	Call* SMS	Call* SMS
	0,67 EUR [☐] Relax	0,67 EUR [☐] Relax	0,67 EUR [☐] Relax
	Holiday (10 EUR 0,39 EUR [☐] bundle incl. 30 roaming minutes price plan outgoing and T-Mobile incoming Weltweit roaming calls)	Holiday (10 EUR 0,39 EUR [☐] bundle incl. 30 roaming minutes price plan outgoing and T-Mobile incoming Weltweit roaming calls)	Holiday (10 EUR 0,39 EUR [☐] bundle incl. 30 roaming minutes price plan outgoing and T-Mobile incoming Weltweit roaming calls)
Plus			free
	0,67 EUR [☐] Relax	0,67 EUR [☐] Relax	0,67 EUR [☐] Relax
	Holiday (10 EUR 0,39 EUR [☐] bundle incl. 30 roaming minutes price plan outgoing and T-Mobile incoming Weltweit roaming calls)	Holiday (10 EUR 0,39 EUR [☐] bundle incl. 30 roaming minutes price plan outgoing and T-Mobile incoming Weltweit roaming calls)	Holiday (10 EUR 0,39 EUR [☐] bundle incl. 30 roaming minutes price plan outgoing and T-Mobile incoming Weltweit roaming calls)
ERA			free
	0,67 EUR [☐] Relax	0,67 EUR [☐] Relax	0,67 EUR [☐] Relax
	Holiday (10 EUR 0,39 EUR [☐] bundle incl. 30 roaming minutes price plan outgoing and T-Mobile incoming Weltweit roaming calls)	Holiday (10 EUR 0,39 EUR [☐] bundle incl. 30 roaming minutes price plan outgoing and T-Mobile incoming Weltweit roaming calls)	Holiday (10 EUR 0,39 EUR [☐] bundle incl. 30 roaming minutes price plan outgoing and T-Mobile incoming Weltweit roaming calls)
Orange			free
	0,67 EUR [☐] Relax	0,67 EUR [☐] Relax	0,67 EUR [☐] Relax
	Holiday (10 EUR 0,39 EUR [☐] bundle incl. 30 roaming minutes price plan outgoing and T-Mobile incoming Weltweit roaming calls)	Holiday (10 EUR 0,39 EUR [☐] bundle incl. 30 roaming minutes price plan outgoing and T-Mobile incoming Weltweit roaming calls)	Holiday (10 EUR 0,39 EUR [☐] bundle incl. 30 roaming minutes price plan outgoing and T-Mobile incoming Weltweit roaming calls)

*

Based on a 2 minutes call duration, to a fixed line, during peak hours.

Best roaming fare, if applicable.

☐

Special access conditions.

All prices include VAT.

For more detailed roaming prices, check out your provider's website: www.t-mobile.de

APPENDIX E**Adjustment of the impact model based on the Commission's assumptions**

	percentage	volume	current price	current income
Total roaming volume		10.28		
Outbound minutes	66%	6.78	0.9	6.10
including intl outbound minutes	80%	5.43	0.9	4.88
including local outbound minutes	20%	1.36	0.9	1.22
Inbound minutes	33%	3.39	0.57	1.93
IOT		6.78	0.78	5.29
Total income				13.33

Source: ALTEX

Tests of differences between ALTEX calculations and the Commission's model with elasticity of 0.55

With commission minutes volume

EEC proxy model	SCENARIOS	scenario 1	scenario 2	scenario 3
consumer surplus		1,669	2,370	5,794
producer surplus		-1,143	-1,651	-4,316
economic welfare measure		0,526	0,719	1,478
EEC model SCENARIOS				
consumer surplus		1,503	2,167	5,283
producer surplus		-0,994	-1,491	-4,156
economic welfare measure		0,509	0,676	1,127

Source: ALTEX