ATUG's submission to the ACCC MOBILE SERVICES REVIEW 2003 Discussion Paper.

ATUG's input to this Discussion Paper is based on:

1. Feedback from ATUG members that fixed to mobile calls (both domestic and international) and international roaming rates are too expensive and do not seem to be subject to the same competitive pressure as users experience with other types of voice calls.

2. Users feedback that they do not agree with the view of the industry that mobiles is a "ferociously" competitive, customer focused industry. In the last week ATUG has received a message from one mobile operator (not the chosen service provider) about a new price offer. Another pre-paid user received an SMS about the introduction of a 25c flagfall on all calls.

3. Comments from INTUG and the OECD that these problems exist in other jurisdictions and have been dealt with recently, in a number of different ways

4. ATUG members concern that domestic roaming is not widely available to them to maximise the benefit of their purchase of a mobile phone service

In making its contribution to the Mobile Services Review discussion, ATUG relies on:

1) The broad objectives of the Telecommunications Act which are to promote the **long-term interests of end users** and the efficiency and **international competitiveness** of the Australian telecommunications industry.

2) The Trade Practices Act 1974 (the Act) part IV, Part XIB and Part XIC in particular which has as its objective of promoting the **long term interests of end-users** (LTIE) of telecommunication services,

3) Australia's commitments under the GATS 1994, the GATS Agreement on basic Communications and the associated Reference Paper, to market access and pro-competitive regulation including **cost-oriented inter-connect** prices.

THE NEED FOR REGULATION

In regard to long-term interests of end users, the key criteria are promoting competition, any-to-any connectivity and economic efficiency in regard to infrastructure investment.

The benefits of competition are well described by the Productivity Commission in their Telecommunications Competition Regulation Inquiry Report, September 2001, at pg153:

"Competition generally has some important virtues. First, it promotes economic efficiency in several ways: it places discipline o the costs of producing goods and services (that is, technical or productive efficiency); from a community perspective the most valued goods and services are likely to be produced (resource allocative efficiency); as well competition helps to ensure efficiency is maintained over time (dynamic efficiency). Second, competition constrains prices. Third, competition reduces the concentration of economic power in society.

Behaviour that adversely reduces competition often raises concern in the community. For example, a firm with some market power can engage in predatory pricing whereby it reduces its prices (even below costs) in the short term, hoping to drive out its competitors and thus enable it to increase prices and overall profits, in the longer term. A firm can refuse to supply its products or services to its competitors, or only offer to do so at 'unreasonable' prices. Firms can collude to agree on prices or otherwise reduce competition.

Generally, anti-competitive conduct results in long run prices that are higher than otherwise, with both efficiency and distributional effects:

- higher long term prices could affect market demand and a lack of competition could enable the supplying dominant firm to relax efforts to improve production efficiency - these are efficiency effects;
- when the price responsiveness of demand - its demand elasticity - is low, much of the effect of higher prices is a transfer from the consumers to the shareholders of that firm - a distributional effect."

ATUG has been focused on competition in telecommunications since 1980 for the reasons so clearly outlined above.

From ATUG's perspective the problems associated with lack of competition identified by the Productivity Commission analysis of competition theory are all in evidence in practice in the issues before the Commission.

For these reasons, **ATUG supports continued regulation** by declaration of GSM and CDMA mobile services.

For the moment ATUG has a **watching brief on 3G services**. ATUG's view is that regulation should only apply in

demonstrated cases of market power or market failure and that we are in the early days of 3G.

FORM OF REGULATION

In regard to the question of the form of regulation, ATUG suggests that the Commission should consider its full range of existing powers in dealing with what end users see as abuse of market power. Part IV, Part XIB and part XIC tools should all be considered in achieving the objective of promoting competition in the mobiles market, in the long-term interests of end users.

ATUG also supports the new emphasis on information gathering, monitoring and publication by the Commission as important regulatory tools. Monitoring of competition, bundling, accounting separation, price controls are all clearly part of the Commission's role in regulating the telecommunications industry. ATUG notes the concerns expressed in the Discussion Paper as to the accuracy and quality of information provided by carriers.

Recent work by the ACA in regard to consumer toolkits and consumer code compliance are also important to the task of ensuring the consumers in the telecommunications services market are well informed as they make their choices. The profile of the ACCC among users should be used where necessary to ensure consumers are properly informed about developments in the industry.

INTUG's comments on market definitions and price models are relevant in the Commission's assessment of these issues. User perspectives on these issues are provided later in this paper.

INTERNATIONAL EXPERIENCE

In regard to relevant international experience, reference is made to INTUG's (International Telecommunications Users Group) experience with these issues, and the lessons learned and now being applied by regulators around the world in regulating mobile markets.

Given the stated objective of promoting the **international competitiveness** of the Australian telecommunications industry it is important that local regulatory decisions be assessed in the context in international developments. In this particular case, it is worth noting that a number of regulators have recently found evidence of market failure in fixed to mobile and international roaming prices related to market power over call termination.

ATUG sees no difference between the arguments in those jurisdictions and the situation prevailing in Australia.

There are differences in the tools available to the ACCC to achieve a pro competitive outcome but ATUG is confident that the range of powers in part IV, part XIB and Part XIC are sufficient to secure the right outcome - competitive retail prices for fixed to mobile and in conjunction with other regulators, international roaming charges.

The OECD in its Communications Outlook 2003 at Table 2.9 summarises the current range of regulatory approaches to achieve competitive fixed to mobile termination rates and retail prices. While the solutions vary according to the principles underlying the regulatory framework, there is a shared view that operators with significant market power will not deliver competitive outcomes without regulatory supervision.

INTUG PERSPECTIVE

The following INTUG submissions are included as part of this submission:

INTUG submission to ITU SG 3 - Fixed to mobile call termination, December 2002

INTUG submission to UK Competition commission - Mobile Phone inquiry, August 2002

INTUG position paper on National Roaming, May 2003

INTUG submission to ITU SG 3 - Termination of international calls to mobile networks, July 2002

INTUG submission to the European Regulators Group - the wholesale national market for international roaming; possible remedies, May 2003

INTUG has done considerable work over many years to remove abuses from the mobile telecommunications markets in all parts of the world. ATUG is a member of INTUG and our shared objective is to ensure open access to mobile networks and cost oriented call termination rates.

OECD PERSPECTIVE

The OECD in Communications Outlook 2003 at page 12 makes the point:

"..the underlying long-term trends of the industry remain propitious. Telecommunications traffic and revenues have grown in most areas, and available 2002 data, at the time of writing, tend to confirm continued underlying growth in key

areas of the industry. The crisis that has affected a number of firms in the industry does not provide any evidence for a reversal of government telecommunications policies or telecommunications regulatory frameworks which emphasize competition. Recent financial set backs in the telecommunications sector should not be interpreted as arising from attempts by regulators to enhance competition in the sector and should not be used as a pretext to give more power back to incumbent telecommunication operators, or to lift asymmetric regulations as argued in some quarters…

The return to a healthier industry will depend on continued market growth and investment. In turn, this demands that continued efforts be made by regulators to enhance conditions of access. This has been one of the main preoccupations of the OECD regulators in 2000 and 2001. Improving conditions of competition will continue to help the trend in decreasing prices, which has been occurring since the early days of market liberalisation. Policies aimed at facilitating interconnection, including reducing interconnection charges, easing market entry requirements, enhancing access through unbundling and reducing market power of dominant carriers remain important and should be continued to be reviewed."

At page 29 the OECD makes particular reference to the issue of fixed to mobile interconnection:

"Interconnection remains an important issue preoccupying regulators. The last several years have seen increased concern with regard to fixed to mobile termination where mobile operators terminating calls are viewed as having a bottleneck position. In a number of OECD countries rates for terminating calls on mobile networks have been steadily decreased in the last several years.

However, a number of initiatives have been taken by regulators to put further pressure on mobile termination charges, Within the European Union, the designation of mobile operators as having significant market power in the interconnection market has led to the imposition of cost-oriented termination charges which are applied on a non-discriminatory basis in a number of countries. Operators in some countries are required to publish their termination rates and some countries have intervened directly to set maximum termination prices, impose price caps or impose reductions on these charges."

USER PERSPECTIVE

Many of the points INTUG makes in regard to the impacts on business users of high call termination prices (whether domestic or international) in its submission to the UK Commission are reflected in ATUG's own research amongst

users in Australia. ATUG has previously briefed the Commission on the Top 100 survey views on the lack of competition in the mobile sector and in particular concern with fixed to mobile and international roaming rates (both of which reflect above cost call termination pricing). ATUG's current SME survey is also finding that users regard mobile charges as too high.

ATUG BOARD PERSPECTIVE

ATUG's Board has recently confirmed in discussions on ATUG Focus Policies for 2003/2004 that fixed to mobile, international roaming charges and the availability of national roaming remain policy focus areas for ATUG:

ATUG Mobiles focus policy
ATUG will work for significant reductions in international roaming and fixed-to-mobile charges.

Users should have access to the most extensive network coverage possible. ATUG will work to achieve national roaming between carriers on fair and reasonable terms and conditions.

The reason for this continued emphasis is that users are now reporting fixed to mobile as the most significant single element of telecommunications spend and growing the fastest - hence their sharp focus on non-competitive pricing. This growth is also reflected in financial reports from carriers.

ATUG PRICE RESEARCH

ATUG's price research (using ATUG benchmark data based on what is paid rather than what is advertised) indicates the following % reductions in prices from 1998 to 2002, (offset in part by increases in access charges during the same period):

International spend per minute - down 64%
National spend per minute - down 57%
Local spend per minute - down 44%
Mobile spend per minute - down 36%
Fixed to mobile per minute - down 28%

It is worth noting that even for these high volume buyers who do not avail themselves of handset "subsidies" the fixed to mobile charges are orders of magnitude higher than local or long distance charges.

During this time the volume of spend on fixed to mobile has grown in line with the increased number of mobiles in the market but the fall in prices has not matched the falls experienced in other telecommunications services at the same

stage of market maturity. The same is true for mobile prices generally.

It is also worth noting Australia's position in the following OECD Outlook 2003 figures:

Fig 6.4 OECD Residential tariff basket (domestic only) - Australia is ranked at 13 ie 17 countries have a cheaper residential basket than Australia.

Fig 6.5 - OECD composite residential tariff basket (includes international and fixed to mobile) - Australia is ranked at 13 ie 17 countries have a cheaper residential basket than Australia

Fig 6.6 OECD business tariff basket (domestic only) - Australia is ranked at 10 ie 20 countries have a cheaper basket than Australia

Fig 6.7 OECD business tariff basket (includes international and fixed to mobile) - Australia is ranked 11 ie 19 countries have a cheaper basket than Australia

Fig 6.10 OECD basket of low user mobile charges, August 2002 - Australia is ranked 24 ie 6 countries have a cheaper basket than Australia

Fig 6.11 OECD basket of average mobile user charges, August 2002 - Australia is ranked at 17 ie 13 countries have a cheaper basket than Australia

Fig 6.12 OECD basket of high user mobile charges, August 2002 - Australia is ranked at 13 ie 17 countries have a cheaper basket than Australia.

This information suggests that however much progress may have been achieved through competition over the last decade in Australia, we still have progress to make to achieve our objective of international competitiveness in the Australian telecommunications industry. And contrary to local anecdotal evidence the position is worse not better for business users.

USER ISSUES

The issues for users are:

1. termination rates are not cost related
2. termination rates are not subject to competitive forces
3. retail fixed to mobile prices are too high as a result
4. retail benchmark reductions are too slow.

ATUG's recent analysis (using Telstra published data for 2000, **9 months ONLY for 2003 and by way of example only)

indicates average prices paid for mobile and fixed to mobile minutes are very significantly higher than fixed minutes and reducing much more slowly - despite reductions in termination charges over the same period:

	2003**		2000		% reduced
LOCAL	$m	Calls mil	$m	Calls mil	
	1180	7417	2646	11346	
Avg	16c		23c		30%
NLD	$m	Mins mil	$m	Mins mil	
	870	6934	1406	9396	
Avg	13c		15c		13%
Mobile	$m	Mins mil	$m	Mins mil	
	2407	4645	2667	4464	
Avg	52c		60c		13%
F2M	$m	Mins mil	$m	Mins mil	
	1128	2945	1220	3022	
Avg	38c		40c		5%

These figures draw attention to the problem of relying on the market to drive retail mobile prices down and hence call termination rates.

ATUG has been working over the last 12 months to form a view on what a cost oriented termination charge would be. ATUG's conclusion is around 8c per minute which, with a local call component of 8c and a retail mark-up of a 30% margin on the mobile termination rate, would give a fixed to mobile retails rate of less than 20c per minute - compared to the current average of 38c per minute. This would bring fixed to mobile prices much more in line with other voice minutes and allow the choice that users had expected would be the case already.

INTUG submission to ITU-T Study Group 3, December 2002
Fixed-to-mobile call termination

Our concerns in presenting this document arise from the enormous cost to users of international fixed-to-mobile call termination. Costs we find to be unjustifiable and which are an abuse of market power.

As one example, we found that for a large European business user, something like 15% of calls by volume to other European countries were to mobile networks. However, it was

something like 45 to 65 per cent of the cost of calls to that country. This sort of ratio of cost is unsupportable. We can get trans-Atlantic traffic for a couple of cents, then have to pay seven to ten times that amount to terminate on a mobile network.

When we try to negotiate a reduction in such prices, we simply cannot. The prices are fixed.

A second concern is that some fixed network operators, those not subject to regulation on call termination prices, are copying the mobile network operators. They are under some financial pressure and see raising domestic and international call termination rates as an easy means to increase revenue. This sort of contamination from the mobile markets is deeply troubling and something that must be contained and contained quickly.

We recognise the financial problems of the sector. It is described in different ways, such as "fragile". France Telecom said that the "house was on fire", though the state *pompiers* seem to be on hand.

These financial problems are aggravated by the abject failure of the operators to find new revenues from mobile data, the operators are holding on like grim death to old revenue, not least to fixed-to-mobile call termination. It is understandable, but that does not make it acceptable.

The mobile network operators need to accept that they have lost this argument and to abandon their campaign of delaying and obstruction.

The origin of the problem lies in the decisions to exercise forbearance in the regulation of mobile network operators. It was an understandable approach made in the hope of competition; a false hope. Gradually competition authorities and regulators have been forced to recognise that mobile telecommunications was not a single indivisible market nor was it competitive. Mobile termination is separate and distinct, a market in its own right. Moreover, it was recognised being a different market for each operator.

We welcome the consumer alert issued by the FCC earlier in the autumn. The subsequent Notice of Proposed Rule Making (NPRM) allows the FCC to undertake a thorough analysis of the problem of charging for termination on foreign mobile networks. On behalf of US users we support this action. We also believe it will help users in other countries.

A significant number of European regulators have examined or have already made determinations to regulate prices for domestic prices. These will be reinforced by the new regulatory package taking effect in July 2003. We would like

to see action on domestic prices extended to international calls. In particular, to use European terminology, within the internal market. It is going in the right direction, but too slowly.

The operators exploited the asymmetry of regulation of termination charges. They took advantage of low regulated prices for fixed termination and offered their customers competitive prices for call origination while ramping up inbound calls from fixed networks.

Faced with high domestic termination rates to mobile networks, some fixed operators resorted to refiling traffic with foreign operators, sometimes within the same commercial group. This practice of "tromboning" did not last long.

We quickly saw the development of separate international termination rates for fixed and mobile termination.

We need to be clear that are talking about voice termination. It is neutral in terms of technology, encompassing 1G, 2G, 3G and GSM, CDMA, PDC and so on. They are all the same.

If video telephony takes off, it will be a different sort of termination. But otherwise, the introduction of new technogologies does not affect the voice telephony termination.

The competition law analysis of fixed-to-mobile call termination is the leveraging of market power from a call termination market into a foreign call origination market. It is clearly an abuse of a dominant position.

As users we can negotiate international rates for fixed telephony. However, we cannot do anything with the "surcharge" for mobile. Therefore we have had to go down the regulatory route. It is slow, but ultimately effective. We believe that we are winning our case and that it is increasingly obvious that all the mobile network operators are doing is delaying, for the understandable purchase of making all the money they can.

There are also some national abuses, by the addition of further surcharges. INTUG is based in Belgium, where the incumbent operator charges an additional EUR 0.30 per minute to call a mobile phone in many countries. This is perhaps double the wholesale surcharge. Nonetheless, it is a domestic matter for my colleagues in BELTUG, the Belgian telecommunications users group.

The prices in the document are indicative. We can get more precise data once the price differences are cut and cut

dramatically from 1000% and 1400%. We do not need absolute precision for such blatant abuses.

These are not competitive markets and they will not be in the future. Therefore we must have cost-orientation.

Additionally, many member states also have WTO Commitments. These include the obligation to ensure interconnection to major suppliers at cost oriented prices. This includes all mobile operators, that follows both from the definition in the GATS.

While we wish to see the end to these abuses, we do not wish to aggravate the problems of the least developing countries in deploying mobile technologies.

INTUG submission to UK Competition Commission Mobile phone inquiry, August 2002

Introduction

In late 2001, the mobile network operators in the United Kingdom lodged appeals against determinations by the Office of Telecommunications (OFTEL) on call termination prices. That appeal is the subject of the present referral to the Competition Commission.

In the normal course of events, INTUG would leave these proceedings to the two national associations who are its members:

* Communications Management Association (CMA)
* Telecommunications Users Association (TUA)

Both associations support the present submission by INTUG.

It is appropriate and important that INTUG makes this intervention to the Competition Commission because:

1. the mobile network operators are using the appeal to the Competition Commission as an examplar of how other countries should handle the issue:

* in the debates in ITU-T Study Group 3
* in market analyses by other national regulators in the European Union

3. international calls to mobile operators in the United Kingdom are subject to excessive charges from many countries

INTUG has been working to remove abuses from the mobile telecommunications markets in all parts of the world. In particular, we have been working closely with the Competition Directorate-General of the European Commission on the sector inquiry into international mobile roaming charges. National associations have been working with National Regulatory Authorities (NRAs) and National Competition Authorities (NCAs) on call termination prices and on mobile number portability. Our aim has been to ensure open access to mobile networks.

On behalf of global users of telecommunications, INTUG has made representations on the issue of national and international calls to mobile networks to:

* International Telecommunication Union (ITU)
* Comisión Interamericana de Telecomunicaciones (CITEL)
* Asia Pacific Economic Cooperation Telecommunications Working Party (APECTEL)
* European Commission (EC)

* letter to Erkki Liikanen, Commissioner responsible for Enterprise and Information Society
* response to the consultation on market definitions
* Federal Communications Commission (FCC)

Given that the mobile network operators wish to use the findings of the Competition Commission as an exemplar of such studies, it is the duty of all parties to ensure that every argument and all data are thoroughly examined.

International calls to UK mobile network operators.
Originally international calls to mobile network operators were passed through the incumbent operator. However, as the volumes of this traffic grew, the cost of terminating onto the mobile networks became unsupportable and separate termination rates were introduced. This was hastened by the use of "tromboning", with some domestic operators refiling traffic overseas in order to avoid the higher domestic termination rate.

Callers from abroad pay a higher rate, sometimes described as a "surcharge", to complete a call to a UK mobile telephone. For example, when calling to the UK from the incumbent fixed network operators, a foreign subscriber must pay an excess charge per minute of:

* EUR 0.30 from Belgium
* US$ 0.22 from the USA
* NZ$ 0.40 from New Zealand

Foreigners are even less likely than UK residents to recognise a phone number as belonging to one of the mobile network operators: +44-77, 78 and 79. Consequently, they will not expect a higher charge and thus search out that price. Without knowledge of the price differential, they cannot take an informed economic decision, without which they cannot influence the prices set by the foreign operators.

Callers in countries using Receiving Party Pays (RPP), such as the USA and Canada, may not even know to expect higher prices. Consequently, they are much more vulnerable to excessive pricing.

Foreign operators do not make very great efforts to inform their customers of the higher charges. Understandably, they wish to give the appearance of offering competitive international tariff plans. They publish a headline price for a call to the United Kingdom fixed network operators which often looks very attractive. They then place the higher price for calls to the mobile network operators in an annex or a footnote. Thus, they give a very misleading impression of the costs of international telecommunications.

They also conceal the excessive pricing of foreign mobile network operators, including those in the United Kingdom.

In many cases, the foreign operators are also mobile network operators and thus benefit from their own high incoming international mobile termination rates and also from the lack of transparency. Such groups have little incentive to highlight the expense of international calls to mobiles, since they are also the recipients of this traffic and the resulting revenues.

Some fixed network operators in foreign countries appear to add a substantial margin to the "surcharge" of the UK mobile network operators. Thus the retail price differential to their customers is much greater than the wholesale price differential.

It would also appear that some British operators have adopted this practice. The effect being to add a substantial domestic UK profit to a foreign excessive price.

Foreign operators appear to have little power of negotiation. The prices they pay are high and have remained so for a significant period of time. The spot market prices show only limited discounting and little variation for a given country, though there is considerable variations between countries.

Foreign callers have no perceptible influence over the wholesale prices charged by the UK mobile network operators.

Foreign regulators are unable to act directly on their behalf, to address problem of excessive pricing. They can address the issue on a bilateral basis or through a body such as the Independent Regulators Group (IRG) or the International Telecommunication Union (ITU). There is discussion at the ITU-T in Study Group 3, though the progress is slow, even for that organisation. The outcome of the Competition Commission procedure is awaited there.

One option for foreign callers to the UK would be to make a complaint to the Competition Directorate-General of the European Commission concurring excessive pricing. They could do this based on the evidence and analysis of the Competition Commission.

INTUG encourages the Competition Commission and the Office of Telecommunications to ensure that the remedies imposed apply equally to foreign calls terminating in the United Kingdom. It is necessary to ensure that the abuses are checked overseas as well as at home. It would be helpful if they would communicate the price reductions to foreign

regulators in order that they might check that the savings are being passed on in a timely manner.

The cost to consumers

The declining costs of long-distance and international calls on and to fixed networks are well documented, for example, in *Communications Outlook 2001.* By comparison, there are fewer studies of the mobile termination issues, though it has been discussed in the *Seventh Report on Regulatory Implementation* and will be the subject of comment in the *Eighth Report*.

Mobile network operators benefit from the low interconnection regime established by regulators for fixed networks. They then advertise the cheapness of calls to the fixed networks. In the reverse direction they have maintained the highest possible prices, in the knowledge that the low elasticity of demand and the absence of competitive pressures will ensure substantial revenue flows.

It is a sad reflection on human weakness that we consider the cost of the calls we make to a far greater extent than the calls we receive. We pass onto our family, friends and colleagues (or more accurately their companies) the high cost of calling us on our mobile telephones. A cost which callers are generally only vaguely and inaccurately aware of, but on which they do not act.

In the United Kingdom, the cost of calling a mobile telephone on an undiscounted BT residential tariff is around 19 to 23 pence per minute at peak times.

To call a foreign mobile telephone handset, BT adds a premium:

IDD calls to some mobile telephones will be charged at 17.02p (ex VAT)/20p (inc Vat) per minute more than the equivalent IDD calls to fixed telephones. Full details of the destinations and number ranges to which this applies are shown at Section 2. Part 10. [Operative Date:01.05.2002]
http://www.serviceview.bt.com/list/current/docs/Call_Charges/00171.htm
The effect is to move a call on the residential tariff to, say, the Netherlands, from 17 pence to 45 pence per minute. That is the equivalent of a call to a fixed telephone in the Balkans or the cost of a fixed call to the Netherlands in the mid-1990s.

It will be necessary to ensure that when cost reductions are made in wholesale prices that these are passed on to consumers. We have experience in several European markets of

price reductions made by NRAs being ignored by some fixed network operators, endeavouring to retain the savings for themselves.

INTUG believes that the prices of calls to mobile networks need to be made both simpler and clearer for users.

The burden on business

Telecommunications managers strive to ensure that their companies have access to high quality, cost-effective services tailored to their needs, in order to deliver productivity gains and increased competitiveness.

Within corporate offices and from other fixed locations, they do this by providing access to very cost effective voice and data services on Virtual Private Networks (VPNs).

Despite forecasts of Fixed-Mobile Convergence (FMC), there has been very limited progress. This appears largely to be the result of the unwillingness of the mobile network operators to participate.

Telecommunication managers are working to provide a well supported, mobile environment that is rich in functions:

* providing high quality, location independent access to applications, services, people
* enabling an often highly mobile workforce to be more productive, more responsive to the needs of clients and customers
* supporting a single corporate numbering plan

A number of businesses elect to provide a seamless service, by forwarding calls directly from a fixed number to the mobile telephone of the person who is away from their real or virtual desk. The cost for this can be considerable, not least when compounded by international mobile roaming charges.

There has been a struggle to stabilise and to contain spending on mobile telecommunications within budgets.

There have been considerable challenges in analysing telephone spending across organisations and in matching these with on-net, off-net, mobile-to-mobile, fixed-to-mobile and other tariffs. The enormous complexity and the frequency of changes of tariffs which the Competition Commission has noted makes this very difficult. Given widely divergent numbering practices, it is hard to manage the profusion of international "area" codes for mobile networks. Yet these tasks are essential in order:

* to authenticate bills
* to manage spending

* to identify trends

Many mobile telephone charges are reclaimed from expenses, requiring identification and then careful analysis.

For some years, business has faced a growing burden from the cost of calls to mobile telephones, both domestic and international.

Savings on long-distance and international calls accumulated over many years have been swallowed up by increased costs of calls to domestic and foreign mobile networks. The volume of such calls has risen while the unit costs have been very hard to drive down, compounding the effects on budgets.

For most businesses, the cost of calls to mobile networks now exceeds the cost of calls to fixed networks, though the volume of calls is smaller. One multinational corporation gives the example of calls from the UK to foreign mobiles being 10 per cent by volume of international calls but some 35 per cent by cost. Another shows higher ratios of calls, from 15 to 25 by volume, from its UK fixed VPN to international mobiles, and more from 45 to 60 per cent by cost. The cost of a call to a mobile phone in another European country is, on average, five times cost of a call to a fixed line in the same country.

An obvious response would be for the business to discourage calls to mobile telephones. At a time when mobile phones are ubiquitous and when the age of first acquisition has almost dropped to single figures, it would seem anachronistic if not antediluvian to issue instructions to call fixed lines only or even first. Such instructions would be ignored and possibly scorned.

One solution has been offered to larger businesses by the mobile network operators under the banner "Mobile Virtual Private Network" (MVPN). In addition to heavily discounted prices for on-net calls, this service generally includes significant additional features, such as call forwarding and short code dialling, generally mapped onto the fixed VPN numbering plan. However, the unique selling point is the very much cheaper price for a call from the fixed network to the mobile network.

The service provided varies, but can include:

* calls to corporate mobile phone numbers
* calls to all mobile phone numbers on one mobile network
* calls to other mobile networks (transit and termination)

Calls to specific numbers or number ranges are trapped on the fixed VPN or PBX and sent directly to the mobile network

operator over a leased line. In some cases the mobile network operator identifies return traffic to be terminated on the domestic part of the fixed VPN.

It is not immediately clear that using the leased line achieves any substantial savings for the operator (only 1 or 2 pence per minute), as against passing the calls over the PSTN. The user must pay for the installation and rental costs of the leased line and also the maintenance of the database of numbers to be sent to the M-VPN.

Mobile VPN services are presently offered by the operators only on a country-by-country basis, whereas fixed VPNs are available on a trans-national basis. Only a very few users have networks taking international traffic for mobile telephones over the fixed VPN to break out directly onto the foreign mobile network.

The retail market segment for large users appears to show some counter-vailing market power, since the price is cheaper and sometimes very much cheaper than the retail price offered by a fixed network operator. Discounts appear to be in the range 25 to 75 per cent. Often the price to the user is significantly less than the wholesale market prices. It would appear that the mobile network operators are responding to the complaints of very large customers concerning the high cost of calls to their networks and the repeated requests to negotiate lower prices.

We are not aware of any M-VPN prices that are below the levels calculated by NRAs using LRIC, though some may be close to it.

The mobile network operators have recognised that the vast and sometimes overwhelming majority of calls to the mobile networks from a large business are to employees of that company, certainly over 50% and sometimes over 90 or 95 per cent of such calls. Therefore an MVPN service can address the demands of business users without, in their view, challenging the revenues earned from wholesale call termination prices.

Mobile network operators claim that there is little elasticity of demand for call termination given changes in price. While this appears to be true on the public network it may not be true for traffic originating from large corporate users. Here a markedly lower price does generate more traffic, by taking it away from rivals, though how much traffic is uncertain. User companies make efforts to to ensure they maximise the savings obtained on such schemes, in part by explaining to employees the special deals made with mobile network operators.

The mobile operators are reducing the profit margin on inbound calls to their own networks in order to obtain substantially higher call volumes. In addition to generating more calls to terminate on their networks, they are also capturing calls that would previously have been originated on fixed networks. This shows some contestability between fixed and mobile networks.

They are giving telecommunications managers a lever to consolidate their mobile purchases to a single operator in each country. Since the arrangements are only cost effective with one or, at most, two operators, the company will make significant savings if they can convert all their mobile telephones away from rival network operators. Branch offices and individual employees with private subscriptions come under increasing pressure to adopt the corporate offering. Thus one operator can push out competitors and generate more traffic.

At the wholesale level, from both a technical and an economic perspective, the input remains call termination. That is, the leased line connection to the mobile network operator is identical to the connection of another operator.

The problem this seems to create is that the mobile network operators are discriminating against the fixed network operators. They are offering a technically identical wholesale interconnection service as an element of the Mobile VPN, but at a retail price one half or one third of the price charged to the fixed network operators.

It seems clear why the mobile network operators adopt this strategy. However, it also appears to be a straightforward breach of competition law, both Articles 81 and 82 of the Treaty and the UK Competition Act. It is also in breach of the non-discrimination obligation imposed on SMP operators under the existing European Union ONP directives.

The internal unit of the mobile network operator providing the M-VPN service to large users gets a price one third or one half of the price available to competing operators. The internal unit would seem to unlikely to be generating volumes of traffic massively greater than competing operators, especially the fixed incumbent operator. Thus the discount it receives would appear to be unjustifiable. Moreover, since the retail price it offers is below the wholesale price offered to competitors, it creates a price squeeze.

By blocking their rivals from having a cheaper call termination price, mobile network operators stop suppliers of fixed VPN services from providing integrated fixed-mobile services.

In certain Scandinavian markets there are "wireless office" or "office GSM" services. These place mobile telephone numbers and handsets behind the PBX and charge incoming calls at the fixed termination rate. The handset has both a fixed and a mobile network telephone number, plus a corporate network short code. Additional services include conference calls, camp on and hunting. Callers do not pay a higher termination rate for this service, which is described by the operators as having a price model adjusted to substitute for the fixed telephone. There are also substantial discounts on call origination charges with such deals. Some mobile operators expect to convert significant parts of their corporate markets to such services.

For the present, this service is not available in the United Kingdom. However, we understand it is about to introduced by at least one operator.

The call termination price for this service appears to be substantially below the LRIC prices computed by OFTEL and other regulators. On the assumption that the operators are not intentionally losing money on these services, it seems reasonable to conclude that they are using a substantially different costing methodology, one with a much lower result. This could be because large parts of the networks are now quite old and much of the original investment has already have been written off. The recent upgrading of the network relates to data services and would not be added to the cost of voice calls. On this basis a reduced cost of termination would seem plausible.

Again, the mobile operators do not appear to be offering this very low termination price as a wholesale service. This would appear to be a breach of the non-discrimination principle and competition law.

The desire of business telecommunications managers is to see the cost of calls to mobile networks decline to the level of fixed networks. This is an expectation based on declining costs in other services and in the knowledge of the declining cost of the technologies being used. There is also a hope, no longer an expectation, that, eventually, the mobile operators will deliver pan-European services to meet the oft-stated demands of business and the claims made by mobile network operators to financial markets.

Competition in wholesale termination prices could seem likely to lead to faster Fixed Mobile Convergence (FMC).

The overall effect of the high costs of mobile telecommunications and the problems of managing these costs has been to limit productivity gains for companies. The consequences for the British economy are reduced economic

growth in terms of the objectives set out by HMG and the equivalent European goals in the ***e***Europe 2005 Action Plan.

Releasing the money from excessive payment for call termination will lead to the adoption of newer technologies and thus to potential productivity gains for the UK and the European economy.

Market definition

There appears now to be a consensus and harmonisation on the market definition to be applied to wholesale mobile call termination. The Working Party of the Independent Regulators Group (IRG) proposed that the definition should be a single operator. The European Commission, in its draft Recommendation on market definitions, found the market to be a single network operator. The Nederlandse Mededingingsautoriteit (NMa) recently made a similar finding, as has the Competition Directorate-General of the European Commission.

The UK Competition Commission has defined the market as a single network operator, as did the Office of Telecommunications.

So that -- with the exception of the mobile network operators -- we now have agreement both on the market definition and the consequence that each mobile network operator is, necessarily, dominant on that market.

INTUG fully supports both this definition and the consequences that flow from it.

The Competition Commission has asked about the status of 3G calls and whether they should be included in the same market definition.

2.5G refers only to data services and not to voice telephony.

INTUG believes that calls terminating on a mobile network are not specific to a given technology, the market is for wholesale voice telephony on a particular mobile network operator. It does not matter whether it is on 2G or 3G, nor whether the technology used is GSM, CDMA or NMT, nor whether these are on 900 MHz or 1800 MHz. In many cases 3G customers will be receiving calls while roaming on 2G networks, often without being aware of it. Moreover, many 3G users are very likely to have numbers ported from 2G networks.

The differences in 3G come only with the addition of advanced data and value-added services. Video-calls will probably be a different market, whereas audio-streaming is more problematic since it seems to be substitutable with

voice telephony. At some point in the future, the introduction of Voice over IP on 3G might create a further market segment.

Another exception is that of TErrestrial Trunked RAdio (TETRA) which would appear to be a separate market because of the very different technical and economic characteristics.

The Competition Commission indicates that it has not yet reached a view on whether fixed and mobile call origination form part of the same retail market. There remain very different characteristics in the fixed and mobile call markets, many deriving from the long history of regulation of the former, for example, carrier pre-selection and call termination prices. The functionality of the two types of the two networks are also quite different.

The European Commission in its draft Recommendation has indicated that fixed and mobile call origination are to be assessed as separate markets, this follows from Annex II of the Framework Directive. Thus for *ex ante* regulation, the issue can be delayed until the next review of the Recommendation on market definitions in a year or so.

INTUG does not anticipate true convergence of the fixed and mobile call origination markets for some years to come. It will require closer alignment of the regulation and of the prices.

The interim findings

INTUG supports the following interim findings of the Competition Commission:

* that a separate market exists for termination of calls on the network of each of the four mobile network operators
* that call termination is not part of a wider market for telecommunications services
* that the definition of the market is not likely to change in the foreseeable future
* that call termination charges on mobile networks are not subject to effective competitive constraint and are not likely to become so within the foreseeable future
* that the incentives on operators are to increase and not to reduce prices
* that a measure of rivalry can be seen between operators at the retail level
* that the wide range of tariffs means customers cannot drive down prices
* that prices for call termination are in excess of the relevant costs and the monies collected from this are used to distort the price structure by cross-subsidising subscription charges, on-net calls and the like

* that the customers of fixed network operators are indirectly subsidising customers of mobile operators
* that the operators use the excessive charges not to supplement their profits, but rather to increase their marketing expenditure
* that in the absence of regulation, termination charges will continue to be set well above costs
* that LRIC is the most appropriate measure of costs
* that if regulation is to include both fixed and mobile then the approaches used must be consistent
* that the differences between on-net and off-net charges do not reflect the cost differences between them
* that competition between the fixed and mobile network operators would be further distorted by the continuance of high mobile termination rates and would operate to the detriment of fixed and mobile users alike
* that fixed line customers (without a mobile phone) are subsidising users of mobile phones with few corresponding benefits
* that there is no justification for employing different price controls mechanisms on different operators

INTUG suggests that the rivalry in the marketplace is much more limited than the Commission describes, while the complexity of the tariff offerings is even greater than suggested.

Financial viability and the third generation

Financial analysts indicate that about one quarter of the revenues of mobile operators accrue from inbound calls. Thus even a phased or glidepath reduction could result in substantial decline in revenues for the mobile operators, especially if similar remedies were to be applied across their full geographic footprints.

As the Commission makes clear, the operators have considerable scope to make economies, without endangering their profitability or viability. They might begin by eliminating subsidies on handsets and their retail operations in order to reduce the range of expensive measures they have in place to achieve subscriber growth. If they could reduce their churn rates, then the savings would be very substantial.

They could cut back on the salaries and the sometimes controversial bonuses paid to their directors. They could also discontinue frivolous activities such as sponsorship of Formula One racing and interruptions to rugby football games.

INTUG has no reason to believe that the reduction of call termination prices to cost would affect the medium-term financial viability of the mobile operators.

There is evidence from financial analysts that the share prices have already been reduced to take account of regulatory action on termination prices and also on international mobile roaming.

A much more serious problem for the mobile operators is the lack of confidence in the financial markets concerning telecommunications and especially 3G. Their share prices have fallen dramatically and their debts have grown. They will have to write off assets nominally worth many millions from their balance sheets. When Telefonica and Sonera announced they had given up plans to provide 3G in Germany, the stock market responded by increasing their prices.

It could be argued that the success of 3G or IMT-2000 is in the public interest and therefore it should be a legitimate concern for OFTEL and for the Competition Commission.

Yet, the eventual outcome of 3G is increasingly uncertain. The unquestioned confidence of the operators in the spring of 2000, has been reduced to ill founded speculation. 3G might go on to become a towering success or it might be a failure on a titanic scale. At worst HM Treasury is better off by almost £21.5 billions. Had accepted the payment in the form of shares we estimate the value would have fallen to around £6 billions.

As far as users can see, the signs for 3G are ominous. There is increasing talk of delay, with only experimental and trial services during the period which is being considered. The operators dramatically overpaid in the auctions, especially in the United Kingdom. They have achieved no success and certainly no measurable revenues with data services on 2G or 2.5G (as against premium rate SMS in the signalling channel). There is no evidence of the services on 3G which are to be the "killer applications". Indeed, the only potential fatalities spoken of are the operators themselves.

The introduction of 3G services will contain many temptations for the operators to repeat and to extend the abuses the Competition Commission has correctly identified, namely the cross-subsidising of:

* handsets
* retail activities
* call origination prices

Were this to be allowed, the abuses would then be set even more deeply in the practices of the operators and would be that much harder to uproot.

It would be very much against the public interest to see a successful 3G built on the perpetuation of proven market abuses.

To presume that 3G will be a success is, thankfully, not the duty of the Commission, therefore it must put to one side speculations concerning the possible effects of the regulation of call termination on 3G.

Possible remedies
In the selection of one or more remedies the Commission faces very difficult choices. The overall aim is the effective and expeditious elimination of the problems identified, in order to drive prices down to cost-orientation. The remedies fall into two categories:

* increase competition on the market
* direct price regulation

In an ideal world the introduction of further competition to the market would be the best solution. At present, the evidence is that there is very little money available in financial markets for potential market entrants - real or virtual. Nor is it clear that the UK and other European mobile telecommunications markets, at levels so close to saturation, would support any additional operators.

While MVNOs have shown themselves able to expand the market, they have yet to break the mould on international mobile roaming or call termination.

The Competition Commission has set out a number of potential remedies that might be imposed on the mobile network operators:

* setting of charge caps
* technological solutions
* tying call termination charges to competitive services
* increasing competitive constraints on call termination
* receiving party pays
* bilateral agreements
* non-discrimination
* price squeeze test

While the price squeeze test is a very interesting approach it is also complicated. As the problems faced by regulators in the broadband Internet access market show, determining that a price squeeze is or is not being applied can be very difficult. It is made more so by the complexity of the tariffs and the frequency with which they are changed. It

could be recalculated on almost a daily basis. Consequently, such an approach is likely to be a disproportionate burden on all parties.

Technological solutions, while often ingenious, do not appear at all likely to work. We are not aware of any product or service that can solve the problems of market abuse identified by the Commission. Moreover, they might be expected to take several years to disseminate amongst customers. For example, the introduction of dual-SIM card handsets would be a medium-term plan and could add yet more confusion to the market, especially if only adopted in the UK. Moreover, it is not at all clear that such handsets would remedy the problems.

The provision of better pricing information would certainly help, but it would be only a modest contribution to the solution. Indeed the profusion of pricing information is part of the problem. The GSM Association has already tried this approach with its Code of Conduct for international mobile roaming prices. Our impression is that this has had no effect whatsoever and is nothing more than window dressing.

One possibly useful technical remedy concerns outbound calls to foreign mobile networks. Where a domestic (fixed or mobile) network operator places a "surcharge" on calls to a foreign mobile network then an announcement should be made to the caller. This is similar to the system employed when calling a foreign freephone number (e.g., 00-1-800-THE-CARD). This would serve to warn the caller that the call was not merely a call to a foreign fixed network:

This call is to a foreign mobile network and an additional charge is being made of twenty pence per minute.
It may be necessary to make bi-lingual announcements for subscribers in certain parts of the UK. This solution is preferable to inbound notification for foreign calls, because of the problems of ensuring the message was in a language the caller might understand.

Receiving Party Pays (RPP) is a system which works well in some other countries, including several Commonwealth countries: Canada, Hong Kong SAR and Singapore. The concern to which it gives rise is the switch over from CPP which could be extremely disruptive, confusing and expensive. Thus the public interest might well be poorly served by such a change. Nor is it clear how such a remedy could be achieved either under the present or the future legislation.

There appears to be no present obstacle in the United Kingdom to mobile operators offering RPP as an alternative to CPP should they wish to do so. It is an offer that might be attractive in the business market, perhaps for 3G, and

which is available in some foreign markets and may be an element in wireless office and office GSM.

The proposal to tie the termination price to other prices in retail markets appears to run a very considerable risk of distorting those markets. A solution which avoids this is much to be preferred.

The proposal for bilateral agreements appears to be highly speculative and could very easily fail, without any apparent fallback position. We are unaware of any successful applications of this approach in other countries. Consequently, we consider it to have an unacceptably risky outcome. Moreover, it does not appear to comply with the telecommunications legislation to take effect from 25 July 2003. Thus it would be necessary that it achieve its effect almost instantaneously and that the abuses not recur.

The application of the principle of non-discrimination would be a remedy which fits well with competition law and with the new regulatory framework adopted by the European Union. If the market evidence is correct then it might well result in prices substantially below the LRIC prices calculated by OFTEL.

However, there appears to be a growing body of evidence that the mobile operators have ignored non-discrimination in a number countries and over a number of years. Thus, if it is to be effective, a more rigorous enforcement of non-discrimination would be essential.

The imposition of a cost-oriented price can be attacked for being retrograde and likely to have to be sustained for some years. Nonetheless, it is a proven and effective method. It would also bring mobile operators under regulatory constraints which are much closer to those of fixed networks.

A regulated price could be imposed immediately or by means of a glidepath or a sequence of steps down to cost orientation over a period of time. Given the long-standing nature of the problem, the scale of the market abuses and the delays there is a strong argument for at least a substantial initial cut in the termination prices.

OFTEL had proposed a reduction by mean of RPI-X for four years, with X set to 12%. This was based on the pre-existing price cap of 10.2p per minute and aiming for a LRIC price of around 6p per minute.

The only apparent argument for a glidepath or staged price reductions is that the operators need the money, by implication more than the customers. That their business practices are so dependent on this income that they need

time to change. This does not seem a very strong or a convincing argument. The public interest is best served by quick and effective action.

INTUG therefore favours a one-off price reduction to a cost oriented price, determined by the use of LRIC. However, if the mobile network operators are offering termination prices below LRIC prices and able to obtain a reasonable rate of return on capital, then the firm application of non-discrimination would appear to be the more effective solution.

The real costs

Given that the target is cost-orientation, it is necessary to have a firm view of what that cost level is, even if the intention is not to use administrative means to achieve that price.

While there is considerable experience of cost orientation in fixed networks there is rather less in mobile networks, though calculations have been made for some networks. In part, the lack of experience arises from a period, now past, during which NRAs were reluctant to regulate mobile network operators.

It is necessary to consider how the established methodologies can best be applied to mobile networks in a manner consistent with fixed networks.

Clearly there are differences between the costs of fixed and mobile networks, though the principles to be applied to the cost methodologies must remain constant. As far as possible, the applications of the costing methodology should be consistent between different member states of the European Union.

INTUG believes that the correct costing methodology is Long Run Incremental Costs (LRIC). We consider the proposal to use Ramsey pricing to be wholly inappropriate for all of the reasons listed by the Commission.

OFTEL has indicated LRIC prices of £0.058 to £0.063 per minute for 900 MHz and £0.062 to £0.068 for 1800MHz operators.

UK mobile network operators appear to be offering retail services at just above the LRIC price level, though as retail and not wholesale offerings.

However, as indicated above, there seem to prices on the market, if not yet in the UK, at levels below those of OFTEL LRIC or the even higher levels of LRIC claimed by the mobile network operators. There also appear to be quite cheap transit prices across their networks. It would seem

necessary to re-examine the costs included in the LRIC model.

The Commission raises a number of issues concerning which costs should be included, notably network externalities and common costs.

The argument concerning network externalities is that it is beneficial for existing network users to pay a small cross-subsidy in order to attract more users onto the network. This argument was originally developed for a monopoly fixed network. The benefit to a mobile network customer in having more customers on that network are in terms of cheaper on-net calls and somewhat greater certainty of reaching the individual as against calling to a fixed network. In the UK, as with other European Union member states, the individual is highly likely to be accessible through the fixed network or one of the other mobile networks. Therefore the net benefit is very small and may be negligible. Ironically, for a consumer with both fixed and mobile telephones there be an economic advantage if others do not join a mobile network, at least while call termination prices remain so high.

The danger is that the costs attributed to network externalities might include high customer acquisition costs and even handset subsidies. This would be counter productive.

The LRIC costs for voice telephony should not include upgrades for data services. So that recent expenditure on hardware, software, billing systems, training and the like for HSCSD, GPRS, EDGE and MMS must not result in additional costs for voice telephony. Moreover, as these use bandwidth previously assigned to voice traffic, appropriate cost elements should be re-assigned to those services, resulting in a reduction of the costs attributable to voice termination.

Likewise, the costs of 3G networks, including the amazing fees paid voluntarily at auction, should not be included in voice telephony termination charges. The revenues from 3G have been forecast to come from data and value-added services and the costs must lie there. Given that all bar one one of the 3G operators has a 2G network, they were perfectly able to provide voice telephony services using existing spectrum and existing networks.

The mobile operators give the impression of moving as many costs as they can away from their own customers and passing them to the customers of other networks by pushing up termination prices. This should be resisted as far as possible.

The new European legislation

The United Kingdom is due to complete the transposition of the new European Union legislation on telecommunications in order that it be in force on 25 July 2003. On that date the old legislation will cease to apply. The Department of Trade and Industry and OFTEL are already well advanced with this work

The only unfinished work at the European Union is that of defining the markets. A final definition will be available in October. There appears to be no reason to expect any change in the definition for wholesale mobile call termination for a single operator.

The procedure followed by OFTEL and the Competition Commission appears to meet all the requirements of market analysis required in Article 16 of the Framework Directive. Similarly, the designation of operators with SMP on the market, as required by Article 14 of the Framework Directive, has been complied with.

The next stage in the process arises from Article 8 (4) of the Access and Interconnection Directive requires:

Obligations imposed in accordance with this Article shall be based on the nature of the problem identified, proportionate and justified in the light of the objectives laid down.
The classes of obligations which can be applied are the following Articles of the Access and Interconnection Directive:

9 Obligation of transparency
10 Obligation of non-discrimination
11 Obligation of accounting separation
12 Obligations of access to, and use of, specific network facilities
13 Price control and cost accounting obligations
A price reduction to cost-orientation in one or in several steps would be proportionate and justified under Article 13.

Similarly, non-discrimination in the provision of wholesale call termination would be proportionate and justified under Article 10.

The application of both measures would also be possible would also be proportionate and justified.

Thus the remedies fit both present and imminent regulation.

Nonetheless, OFTEL or OFCOM would be obliged to undertake a market analysis in the coming months, notifying SMP operators to the European Commission and to other NRAs, then imposing measures under the new legislation. However, it would be enormously simplified given the work carried out by

the Competition Commission. There is no reason why this process need or should reach a different conclusion from the present work of the Competition Commission.

Conclusion

INTUG strongly agrees with the original analysis of the problems provided by OFTEL. We are very pleased by the work of the Competition Commission which confirms our view that the mobile termination markets are distorted and act against the public interest. We look forward to this work being taken up by regulators and competition authorities in other countries, not least under the new European Union legislation.

The efforts of the mobile operators to drag out the regulatory process are transparent. They gain many millions of pounds for each day the outcome is delayed. Those millions are a burden imposed upon British business and upon individual consumers. The money also comes from those foreigners calling the United Kingdom, who must purchase one of the most bizarre of British exports, the abuse of a dominant market position.

When the Commission finds in favour of OFTEL and against the mobile operators, it must take into account the additional revenues made during the delay. It must recover those revenues for users by enforcing a very rapid reduction in call termination prices.

The sooner the mobile telecommunications market is subjected to proper competitive disciplines, the sooner it will be able to respond to the demands of customers. Only then will it be in a position, if it is able, to make a success of 3G.

INTUG Position Paper on National Roaming, May 2003

Introduction

National roaming agreements between licensed Mobile Network Operators (MNOs) have been the subject of legal obligations and regulatory interventions in many countries. This paper sets out INTUG's position with respect to such policies and identifies global best practice.

There are important political, economic and social aspirations to extend mobile network coverage. However, these are not always fully compatible with competition policy. In each set of circumstances, it is necessary to consider whether to go beyond commercial negotiations freely entered into and, if so, how to do so. Any measures must be proportionate to the problems they are addressing.

Mobile telecommunications is neither one indivisible entity, nor are the various markets competitive, this is despite the claims made by the MNOs. Consequently, great care has to be taken to ensure that national roaming agreements do not further distort competition, through the reinforcement of oligopoly and collusion, or by creating yet higher barriers to market entry.

National roaming arrangements cannot easily be separated from the question of Mobile Virtual Network Operators (MVNOs). If one MNO is to allow the customers of another MNO to use its network then why not those of an MVNO, a service provider or customers of a fixed network operator? Such discrimination would require to pass a strong test of justification. Clearly discrimination amongst or between value-added network providers would be entirely unjustified.

There is broad agreement on the encouragement to share certain facilities, notably masts, in order to reduce effects on the visual environment. This can also reduce the competitive risks of a "land grab" by the first operator into an area. INTUG supports the non-discriminatory sharing of masts, poles and ducts by mobile network operators, where necessary by means of a legal obligation. However, beyond this there are serious risks of anti-competitive behaviour.

National roaming on 2.5G and 3G networks raises complex questions around the need to ensure compatibility, inter-operability, accurate billing, and so on. There are also problems of branding and Quality of Service (QoS) when use is made of a third party network. It is hard for an operator to differentiate its service from rivals if they are using the same networks to deliver significant parts of their business. Without service differentiation, competition will be limited and compromised.

In several countries, the issue is further complicated by the potential need for inter-standard roaming. For example, it may be necessary to roam between CDMA and GSM or between TD-CDMA and W-CDMA in order to achieve a significant improvement in coverage. This can be limiting, given the small number and higher cost of multi-mode, multi-band handsets.

National roaming cannot be taken as an issue on its own. On one level it looks like certain forms of indirect access, notably Carrier Pre-Selection (CPS), while on another level, it is an alternative to network sharing. The distinction between national and international roaming appears to be largely and possibly entirely an artificial creation of the operators.

National coverage

Licence conditions, either imposed by governments or voluntarily undertaken by operators in beauty contests, have generally resulted in ambitious goals for coverage. For 2G networks there has often been a commercial justification to extend coverage beyond the regulatory minima. Nonetheless, in most countries this leaves some areas outside the coverage of MNOs, whether that is determined by regulation or by market dynamics.

Some countries have encouraged earlier and faster build-out of networks through the construction of shared infrastructure, that is then used by all operators. Such an approach needs to be subject to careful scrutiny under competition law, considering issues both between MNOs and between mobile, satellite and fixed services.

The aggregation of demand for mobile services by the public sector seems to carry a significant risk of distorting markets. For any given area contracts will be awarded to only one operator, which may preclude any competing MNOs from entering the market there. It may be possible to divide up the un-serviced areas of a country between the MNOs, provided there is careful analysis and monitoring of the effects. To ensure at least some competition it may be appropriate to combine this with an obligation to provide national roaming.

Eventually, the growth of network coverage slows down or may halt. It is then possible to assess the case for additional coverage by means of commercial or regulatory arrangements. Prior to that, there is a very great risk of market distortion. The extent of the un-serviced areas in a particular country will depend on: population distribution, disposable income, terrain, travel patterns, usage of mobile phones, affordability, calling plans and the like. There are considerable challenges to operators in areas where low population density is combined with low incomes.

In fixed networks the equivalent problem has generally been overcome by a universal service obligation. This is imposed on one or more operators requiring them to provide service in a given area with payment either in the form of cross-subsidy from other users or directly from a Universal Service Fund (USF). Neither approach is without its problems, requiring complex accounting arrangements and both presume a single operator for a given area.

The problem of coverage may be aggravated by the desire to close down older services with a view to saving money and making spectrum available for other users. First generation mobile telephony generally operated on lower frequencies, that provided wider coverage. Thus a move to new services in a rural area may result in a significant reduction of coverage and/or the quality of service and may result in some existing customers being unable to use the new service. Nonetheless, it may be hard to justify maintaining first generation services for small numbers of customers. The same problem may arise with 2G services, if and when, they are superseded by 3G or 4G.

In rural and especially in remote areas, satellite telecommunications is a reasonable market offering. However, it is seldom considered to be affordable, at least for personal use. Nonetheless, it is important to consider the interests of satellite operators and their service providers.

From the perspective of the customer, network sharing and national roaming may be indistinguishable for any given call. However, they may have significantly different effects on the market dynamics. Public policy must favour the competitive outcome.

Some countries, notably India, Russia and the United States of America, have not assigned spectrum at the national level. Instead they have issued licences for regions and, in the case of the USA, for cites and counties. This creates a very different requirement for national roaming, broadly comparable with international mobile roaming. The market demand has, in most cases, been met by commercial agreement. In the case of the USA, the launch of the first seamless national service prompted other operators quickly to respond.

Clearly some customers, notably large businesses, have a need for extensive coverage, whether national or international or both. Operators should be able to meet this demand by commercial negotiations among themselves. However, it may require some form of legal guarantee, such as obligatory arbitration.

Always provided that the effects on competition have been considered and that any anti-competitive effects have been eliminated or minimised, then national roaming agreements can make a useful contribution to improving coverage. Policies must not preclude future competition, nor create disincentives to it.

Next generation mobile services

New services, often using new assignments of spectrum, are being developed and rolled out. These include:

* mobile data services on 2G networks (2.5G, GPRS, cdma2000 1X, etc)
* IMT-2000 or 3G networks (W-CDMA, etc)
* Wireless Local Area Networks (WLAN)
* digital broadcasting and IP data-casting
* Ultra Wide Band (UWB)

Data and value-added services make the technical aspects of national roaming more complex than mere voice, especially in ensuring that particular handsets provide full functionality on all the relevant networks and guaranteeing hand-over of data and services between networks.

Building substantial or almost total national coverage prior to the launch of a new network may result in a business plan that is not viable. Yet competing with existing operators already able to offer national coverage may be very unattractive and may not be a viable business plan. This issue arose in those countries where 1800 MHz spectrum was assigned to new operators, whose rivals already had extensive 900 MHz networks in place. Typically this was resolved by a period of mandated national roaming on the 900 MHz networks in order to allow new entrants to compete while completing their networks. In many countries where 3G MNOs have been licensed, an obligation has been imposed on existing 2G MNOs to facilitate roaming for those new entrants that do not have a 2G network. This is intended to support an increased number of network operators and to lead, in the medium term, to increased competition.

Some countries, for either 2G or 3G, have assigned spectrum but not specified the technology to be used, leaving this to operators. While it may be possible to mandate roaming in such circumstances, this may be less effective if the multi-mode, multi-band handsets are either not available or are very expensive.

Faced with the high costs of network build-out and doubts about the revenues that would flow from 3G services, the putative MNOs have put pressure on governments and regulators to allow increased network sharing. Although

national roaming will often be available, it would not reduce their costs by a sufficient amount.

Roaming agreements on pre-existing networks are a useful policy tool to facilitate the introduction of new services and additional operators.

Competition policy
Originally, the opening of mobile telecommunications to new operators was as a means to increase competition. However, the results have been disappointing.

The quantity of spectrum available for mobile telecommunications is severely limited. This is due to the demands of other well established users and the economic and political problems of thorough reform of spectrum use. The need to achieve international coordination of the use of spectrum is also a constraint. The shortage of spectrum has all but eliminated the threat of competitive entry, helping to create markets that tend towards collusion and oligopoly. This has been especially problematic in the cases of international mobile roaming and SMS. MNOs have been resisted fiercely the introduction of competition through forms of indirect access, such as carrier selection.

The policy options available to regulators to enforce national roaming include:

* obligation:
    - to negotiate
    - to respond to a reasonable request
    - to accept arbitration

* imposition of prices based on:
    - retail-minus
    - cost-plus

The choice among these will be based on proportionality and national policy objectives.

INTUG believes that the general principles and practice of competition law should be applied to any collaboration between market players. Interventions by government should aim at enhancing competition and should be tested for possible negative effects on competition. In doing so, it is important to consider how third parties such as content providers, ISPs and ASPs will be affected.

Conclusion
Policies to encourage or to enforce national roaming between Mobile Network Operators are a legitimate means to improve service in rural and remote areas. They may also play an

important role in ensuring effective market entry for operators, especially those using new technologies.

INTUG believes that it is better to be explicit in subsidising operators than to have a monopoly or oligopoly provide a cross-subsidy from other services. Moreover, the subsidy is better to come from general taxation than from the sector. However, the need for any subsidy must be clear and demonstrated.

The over-riding concern must be to increase competition and to avoid distortions of competition. Wherever possible, network construction should be based on MNOs responding to market demands. Governments can encourage early roll-out of networks, if this also increases competition. Government can support roll-out of networks beyond a commercially viable core if this serves a regional or development policy. In both cases this should be by applying regional development funds or their equivalent.

INTUG believes that national roaming obligations carry a significant risk of increased collusion, given that there is a limited number of market players and little if any prospect of market entry. Roaming obligations and policies require to be assessed by the appropriate national competition authority in order to ensure that they are not distorting or reducing competition. This is not merely competition with a given technology, but also between technologies and services.

Submission by INTUG to ITU-T SG3, July 2002 - Termination of international calls to mobile networks

Executive summary

*an increasing number of mobile cellular operators are creating a separate tariff for the completion of international calls to their networks
*these wholesale prices can be as much as 1500% more expensive than calls to a fixed network in the same country
*the mobile operators are leveraging their domestic power in the call termination market into foreign markets for call origination
*with the growing importance of mobile cellular networks, other operators have no alternative but to connect, even when they are unable to negotiate and must pay the price levied by the terminating network
*consequently retail prices to foreign mobile networks can be higher by 10 to 30 cents (Euro or US) per minute
*consumers are frequently unaware of these higher prices
*even if consumers do know that a call will be at a higher price, they frequently have no obvious alternative
*INTUG wishes to see the principle of cost orientation applied to the termination of calls on mobile cellular networks
*INTUG also wishes to see signatories to the WTO GATS Reference Paper enforce implementation of their commitments to the interconnection of international calls to mobile cellular networks

Introduction
INTUG has previously submitted to the Study Group a contribution on the termination of calls to mobile networks.

This further contribution concerns calls originating in one member state and terminating on a mobile cellular network in another member state. It argues for the application of cost-orientation to such calls. In those countries where it has been adopted, the GATS Reference Paper should also be applied.

INTUG believes that there is a growing problem of excessive charges for the termination of international calls to mobile cellular networks and that it has to be addressed by administrations sooner rather than later. Related issues are already emerging on the regulation of interconnection of data services for mobile telecommunications.

Background
Where the first mobile cellular network was operated by a subsidiary of the incumbent operator, then international calls were brought through the international gateway and terminated onto the mobile network without an additional charge to the originating network.

Where mobile networks are not owned by the incumbent, they have tended to charge much higher rates for domestic call termination than do fixed networks. However, incumbent subsidiaries have been quick to increase their prices.

Where there was domestic competition in fixed telephony some operators responded by "tromboning" traffic to reduce their costs. They took domestic traffic intended for mobile networks in the same country and refiled it in a foreign country and brought it back, apparently as international traffic, thus evading the high domestic determination rate. Where the incumbent operators could identify such traffic, they opposed this move, especially when they had to pay to terminate the traffic on the mobile network.

A study of tromboning for the OECD noted that:

Interviews with executives from telecommunications companies suggest that mobile tromboning has had a comparatively short half-life in some countries, even though it survives in others. Its heyday in Western Europe was between 1997 and 1999. More recently, as a result of countermeasures taken by the operators affected, the phenomenon has declined there. These countermeasures have been introduced particularly by countries where the ground for mobile tromboning is most fertile - countries characterised by relatively low settlement rates and high mobile termination rates ... counter-measures involving price, in the form of a differentiated settlement rate for calls to mobile networks, have been introduced in several countries ...
DSTI/ICCP/TISP(2000)11/FINAL

There seems to have been no commercial success in driving down termination prices to mobile networks. Regulatory action in this area has been limited. The biggest change has been that individual mobile networks have successfully built defensive walls of high termination prices, initially for domestic and later for international calls.

The differences in the wholesale prices, between international calls to fixed and to cellular networks, are often an order of magnitude.

The following tables were compiled from data obtained from Arbinet, one of the spot markets, in April 2002. They show the wholesale price for calls to selected African, Asian, European and Pacific countries from London, Los Angeles or New York. In some cases the prices will reflect discounting against published or official tariffs where operators "dump" surplus capacity or by-pass official channels. Nonetheless, we believe this data reflects general patterns in the market.

Table *Wholesale costs of call termination* (Source: www.arbinet.com)

Europe

US$/minute	*Mobile*	*Fixed*	*Difference*	%
Netherlands	0.1590	0.0104	0.1486	1428.8%
Sweden	0.1300	0.0090	0.1210	1344.4%
Belgium	0.1480	0.0120	0.1360	1133.3%
Norway	0.1292	0.0115	0.1177	1023.5%
Spain	0.1460	0.0135	0.1325	981.5%
Italy	0.1390	0.0132	0.1258	953.0%
Germany	0.1280	0.0125	0.1155	924.0%
France	0.1380	0.0140	0.1240	885.7%
Ireland	0.1338	0.0140	0.1198	855.7%
Switzerland	0.1635	0.0173	0.1462	845.1%
United Kingdom	0.1175	0.0125	0.1050	840.0%
Denmark	0.1240	0.0136	0.1104	811.8%
Austria	0.1230	0.0143	0.1087	760.1%
Portugal	0.1620	0.0207	0.1413	682.6%
Finland	0.1240	0.0200	0.1040	520.0%
Luxembourg	0.0953	0.0169	0.0784	463.9%
Poland	0.1470	0.0395	0.1075	272.2%
Czech Republic	0.1170	0.0339	0.0831	245.1%
Greece	0.1039	0.0314	0.0725	230.9%
Hungary	0.1350	0.0410	0.0940	229.3%
Iceland	0.0755	0.0350	0.0405	115.7%

Asia-Pacific

US$/minute	*Cellular*	*Fixed*	*Difference*	%
Australia	0.1520	0.0170	0.1350	794.1%
New Zealand	0.1230	0.0188	0.1042	554.3%
Japan	0.1300	0.0228	0.1072	470.2%
Korea (South)	0.0690	0.0215	0.0475	220.9%
Thailand	0.1010	0.0850	0.0160	18.8%
Malaysia	0.0295	0.0250	0.0045	18.0%
China	0.0250	0.0240	0.0010	4.2%
Singapore	0.0145	0.0140	0.0005	3.6%
Hong Kong SAR	0.0160	0.0160	0.0000	0.0%

Massive price differences seems to be a common practice in the OECD countries. However, it has not spread so extensively to operators in emerging and less developed countries. Where it has been adopted, it appears to be related to the presence as strategic partners of operators from the developed countries, they appear to have taken their domestic practice with them.

In a few cases termination on the mobile network is at the same price as the fixed network or, more exceptionally, it

can be cheaper. There appear to be a few cases where RPP is used and a price differential is also applied.

There appears to be no obvious explanation from the network costs that would justify these substantially higher prices.

Despite a number of regulatory investigations into the cost of the termination of national calls onto mobile cellular networks it is not clear that there should be a price difference or which is the more expensive. Some fixed operators have argued that mobile networks ought to be less, rather than more, expensive than fixed networks.

In the absence of a justification of different network costs, the explanation of the observed price differences seems to come from market failures and possibly as the by-product of regulation.

The OECD study of tromboning identified:

"An important reason for above cost termination is that, where a calling party pays system exists, mobile operators have market power in the termination of a call. The customer placing a call has no choice if they want to complete the call but to terminate the call on the network chosen by the mobile subscriber that they are calling."
DSTI/ICCP/TISP(2000)11/FINAL

The costs of international calls have declined steadily and sometimes sharply over the last decade. The data shown above and studies by the ITU, OECD and Telegeography show the declining cost of fixed international calls.

At the same time the number of mobile telephones has grown explosively and now exceeds 1,000 or one person in six. Thus calls to mobile phones are of enormous importance.

The Telegeography 2002 Report makes clear the scale of the problem of mobile termination. The following is taken from the executive summary:

Mobile Telephony

Unfortunately, mobile telephony has also had a tremendous impact on carriers' costs. Mobile termination charges in many countries, particularly in Europe, are as much as sixteen times higher than the cost of termination to fixed-line phones. In Italy, for example, mobile phones account for approximately 35 percent of inbound international traffic but an astonishing 85 percent of call termination charges paid by carriers.

http://www.telegeography.com/pubs/books/tg/pdf/tg2002_exec_summ.pdf

Clearly this is not a small problem and, as leading countries reach very close to 100% mobile penetration, the problem can only get worse.

Competition

In a large number of member states retail mobile markets are held to be competitive, at least in the sense that two or more operators vie for the business of customers. However, this does not mean that the effects of competition reach the markets for call termination.

When customers select an operator in a member state that applies CPP, they do so on the basis of simple measures such as the price of on-net calls, calls to the fixed network and, less frequently, international calls. They do not tend to consider the costs incurred by those who call them. Indeed they are often unaware of these costs. When they are aware, they see themselves as passing those costs onto others.

Many companies have identified the high cost of calls to mobile networks as a significant factor in their total telecommunications costs. In some cases they have negotiated special rates, often by installing a private circuit and sending the traffic directly from their own PBX or VPN to the network of the mobile operator. However, this is usually only undertaken for domestic traffic and not for international calls. Thus they can address only the domestic problem.

Mobile operators have proved that higher domestic termination rates are sustainable and can be a substantial flow of revenue. They have shown that they can successfully extend their market power into overseas traffic, by creating special international rates for the termination of calls on their networks. Thus operators from another country are charged a different and much higher rate for calls terminating on a mobile network than those terminating on a fixed network (see the tables above). These higher costs are then passed directly to customers.

When making a call, callers from a CPP regime will usually know or will quickly learn the non-geographic codes for mobile operators in their own country. However, they are much less likely to know the codes for other countries. For example, few people will know that mobile networks are identified by +32-4 for Belgium and +33-6 for France.

In order that callers can make economic responses to higher prices, they must first know that the number to be called is subject to a higher tariff, though this seems very unlikely. Even if they do know, it will be difficult for them to find a more economic alternative. They could send a text message

or electronic mail, but they may not have access to such facilities or may not be aware of the relevant addresses. The foreign mobile operator takes advantage of this, knowing that the callers will resign themselves to paying. This practice appears to be grossly unfair on the many callers who are unaware of the higher tariffs.

While customers in member states with RPP are very familiar with the costs of incoming calls to mobile telephones, they are unlikely to expect a surcharge on calls made to foreign cellphones. They will naturally assume that the recipient is, as in their own country, paying for the "air time". Such customers are especially vulnerable to the leveraging of foreign market power which hits them directly.

Competition in the market for call termination is either entirely absent or extremely weak. The practical evidence is that the operators can charge substantially higher rates without any significant loss of business. They appear to be to able to set prices independently. Based on past experience, there is no reason to think that the market will remedy this failure.

Consequently, the solution appears to be of a regulatory nature. The following options are all possible:

* more mobile operators
* introduction of mobile virtual network operators
* price controls

In many member states it would be extremely difficult to increase the number of mobile operators. There are already constraints on the amount of spectrum available, making it difficult to licence the necessary frequencies for additional operators.

The introduction of mobile virtual network operators (MVNOs) is an alternative which avoids the need for more spectrum. However, experience from the unbundling of the local loop shows that it would require very detailed commercial and regulatory rules. This is difficult to achieve and very hard to enforce. Moreover, there is no reason to believe that mobile operators will reach better deals with MVNOs on call termination than they do with fixed operators, since they would lack the necessary bargaining power.

The absence of enthusiasm in the financial market for telecommunications seems almost to eliminate the possibility of introducing MNOs and MVNOs for the immediate future.

The absence of alternatives appears to leave member states with the application of traditional tool of price control on call termination. Even if this might appear to be a severe measure, it is both well-established and justified by the

scale and severity of the problem. The approaches could be the application of Long Run Incremental Costs (LRIC) or a price cap below the level of inflation. These are approaches which have been applied to domestic call termination with considerable success.

In the first instance the policy measure could be the extension to international call termination prices of domestic measures which have already been taken.

World Trade Organisation
Many member states are signatories to the General Agreement on Trade in Services (GATS), the Telecommunications Annex and the Reference Paper. They have made commitments under these agreements and are negotiating further commitments under the WTO Doha Round.

The definitions provided in the Reference Paper are:

Essential facilities mean facilities of a public telecommunications transport network or service that

(a) are exclusively or predominantly provided by a single or limited number of suppliers; and

(b) cannot feasibly be economically or technically substituted in order to provide a service.

A **major supplier** is a supplier which has the ability to materially affect the terms of participation (having regard to price and supply) in the relevant market for basic telecommunications services as a result of:

(a) control over essential facilities; or

(b) use of its position in the market.

http://www.wto.org/english/tratop_e/serv_e/telecom_e/tel23_e.htm

Mobile telecommunications are provided either by one or by a very small number of operators. The service cannot easily be substituted. Therefore, mobile cellular networks are essential facilities in terms of the Reference Paper.

This argument is re-inforced by the opinion of the Independent Regulators Group and the European Commission to define call termination as operator-based markets rather than as a national market.

The definition of major supplier includes most and, arguably all, mobile operators. It may exclude operators in the very early start-up phase, when they first open their networks.

The Reference Paper requires that:

2.2 Interconnection to be ensured

Interconnection with a major supplier will be ensured at any technically feasible point in the network. Such interconnection is provided.

(a) under non-discriminatory terms, conditions (including technical standards and specifications) and rates and of a quality no less favourable than that provided for its own like services or for like services of non-affiliated service suppliers or for its subsidiaries or other affiliates;

(b) in a timely fashion, on terms, conditions (including technical standards and specifications) and cost-oriented rates that are transparent, reasonable, having regard to economic feasibility, and sufficiently unbundled so that the supplier need not pay for network components or facilities that it does not require for the service to be provided; and

(c) upon request, at points in addition to the network termination points offered to the majority of users, subject to charges that reflect the cost of construction of necessary additional facilities.

http://www.wto.org/english/tratop_e/serv_e/telecom_e/tel23_e.htm

Thus, where member states are WTO signatories they are obliged to ensure that interconnection to mobile networks complies with their commitments.

INTUG believes that this is best done by the application of price controls in order to achieve cost-orientation.

United States of America
For many years the United States of America has pursued a vigorous policy seeking the reform of the system of international accounting rates. While it has had some success in reducing these, the appearance of new international termination rates for mobile cellular networks appears to have taken wholesale and retail prices back to the levels of about ten years ago. In many cases the players are the same, since many mobile networks belong to large fixed network operators.

In cellular telephony, the US administration has adopted a system of Receiving Party Pays (RPP). Consequently, the costs of termination (and origination) on its mobile networks are met by the subscriber, including those for all incoming international calls.

Consumers in the USA are unfamiliar with the CPP system and are thus especially vulnerable to higher charges for termination on cellular networks, since they do not know to look for the pricing information, they simply have to pay the surcharge. Typically a US carrier adds US$ 0.10 to 0.20 per minute over their usual international rates. It may not be obvious to a US consumer why a particular call is subject to a higher charge.

Although able to pass the charges of international call termination onto their customers, US operators have complained to the US Trade Representative (USTR). In February 2002, CompTel filed papers with the USTR stating:

Excessive fixed-to-mobile termination rates

Fixed-to-mobile termination refers to the rates charged by mobile operators to fixed network operators to terminate voice traffic. Due to poor policy and a lack of regulation, mobile operators have abused their dominant position to turn mobile termination into a “cash cow.” Specifically, regulators have failed to ensure that fixed-to-mobile termination rates are “costoriented,” transparent and reasonable, as required by Section 2.2(b) of the Reference Paper.

Mobile operators across Europe have used the abusive and excessive margins they earn on fixed-to-mobile termination to cross subsidize other activities and to discriminate against fixed network operators. These practices have resulted in significant harm to the business of competitive fixed line operators. Many of the fixed network operators most heavily penalized by this system are U.S. operators or European operators with substantial U.S. investment. ... High mobile termination rates also are a problem in Japan.

http://www.comptel.org/filings/ustr_sec1377_feb1_2002.pdf

CompTel cited LRIC prices from Sprint PCS and Analysys of around 5 Eurocents per minute which they contrast with prices paid by US operators of 10 to 25 Eurocents. The lower price appears to be similar to the prices available to larger users can obtain when they make a direct connection to a mobile network using a leased line. CompTel asserts that these prices are "abusive and excessive".

In its annual review, known as "Section 1377", the US Trade Representative stated that:

There is growing evidence that mobile wireless operators in the EU and Japan charge wireline telecommunications carriers wholesale rates to "interconnect" their calls that are significantly above cost. With the rapid growth in mobile

wireless services, the burden of these above-cost charges on U.S. operators and consumers may soon reach billions of dollars annually. The EU Member States and Japan have committed in the WTO to ensure that major suppliers of basic telecom services provide interconnection at "cost-oriented" and "reasonable" rates.
http://www.ustr.gov/sectors/industry/Telecom1377/2002review.PDF

It is not clear why this observation is confined to the fifteen member states of the European Union, since it appears to be the case for many European countries, with Switzerland having the highest prices and Norway one of the highest differentials. Nonetheless, taken with the TeleGeography data, the USTR appears to be correct in suggesting that very large sums of money are involved, when the call volumes are multiplied by the price differentials.

Looking at the major US operators, it is clear that they are passing the costs onto their customers in the form of a surcharge on the retail tariff for calls to specific countries. The table shows examples of Price differentials for calls to mobile networks

US$/minute	*AT&T*	*MCI*	*Sprint*
Australia	0.06	0.17	0.15
Austria	0.16	0.16	0.16
Belgium	0.20	0.20	0.20
France	0.28	0.28	0.28
Germany	0.17	0.17	0.17
Greece	0.12	0.13	0.12
Japan	0.19	0.19	0.19
Italy	0.18	0.18	0.18
Korea (South)	0.09	0.09	0.09
Malaysia	0.03	0.17	0.03
New Zealand	0.15	0.16	0.15
Spain	0.13	0.18	0.15
United Kingdom	0.22	0.22	0.22

Sources:
http://www.mci.com/home_family/products_services/international/english/icp_mobile_surcharge.shtml
http://serviceguide.att.com/ACS/ext/Documents.cfm?DID=1086
and http://www.sprint.com/mobilesurcharge

Neither CompTel nor the USTR provides a full analysis of the costs of call termination on mobile networks. However, several other administrations have investigated this problem and taken action to reduce domestic call termination prices.

These arguments would appear to apply to other RPP countries, notably to Canada.

European Union

Until recently, the European Commission and the administrations of the fifteen member states had held back from the regulation of mobile telecommunications operators. This seemed to be because they considered the mobile operators to require encouragement and room in which to grow. Many did so by the simple expedient of declining to designate mobile operators as having Significant Market Power (SMP).

However, in the light of complaints and increasing doubts about some of the claims of the operators, regulators have become much more questioning.

The mobile operators have engaged in extensive lobbying, claiming that they do not need not be regulated:

"While GSM Europe supports the main objectives of the Commissions' Review, it strongly opposes a number of the proposals," according to Rutger Van Basten Batenburg, Chairman of GSM Europe. "Europe's mobile market is already highly competitive and, therefore, does not require detailed regulation. Market forces and fierce competition between rival operators are providing the quality and value for money that consumers want. From now on, regulation should focus instead on the abuse of market power, as it does in most other markets for consumer goods."

http://www.gsmworld.com/news/press_2000/press_releases_47.shtml

The Competition Directorate-General has been conducting an inquiry into complaints under competition law concerning high termination prices to domestic mobile networks since 1999. A recent statement of objection was issued against the Dutch incumbent, KPN:

The European Commission has sent to Dutch incumbent telecommunications operator Koninklijke KPN NV a statement of objections alleging that KPN, through its subsidiaries KPN Mobile (mobile traffic) and KPN Telecom (fixed traffic), has violated the competition rules of the EC Treaty. Specifically, the Commission suspects KPN of abusing its dominant position regarding the termination of telephone calls on the KPN mobile network through discriminatory or otherwise unfair behaviour.

http://europa.eu.int/rapid/start/cgi/guesten.ksh?p_action.getfile=gf&doc=IP/02/483|0|RAPIDamplg=ENamptype=PDF

A further investigation is underway into the costs of international mobile roaming and whether the operators are colluding in the setting excessive prices.

Competition law remains a slow instrument with which to control the mobile network operators. Delays of three or more years may be satisfactory in other sectors, but do not fit well with the pace of the telecommunications sector. It is much faster and in many respects easier to use *ex ante* regulation.

In its *Seventh Report on Regulatory Implementation*, the European Commission identified call termination charges in mobile networks to be a crucial issue. The European Commission observed as follows:

4.2.2. Interconnection – call termination in mobile networks

There is concern in a number of Member States as to whether the mobile call termination market is competitive. While the average peak time charge in Europe for mobile call termination decreased by around 10% over the last year, it is, at cent 18.16, about ten times as high as the average charge for fixed to fixed interconnection at double transit level. While it is clear that the cost drivers in mobile networks are different from those in fixed, this represents a difference of an order of magnitude that is difficult to explain.

As regards the range of prices between the Member States, the peak time charges in three Member States (Greece, Italy and Portugal) are around twice as high as in the Member State with the lowest tariffs (United Kingdom); in three others (Spain, France and Finland) they are close to the highest, while in three others (Luxembourg, Austria and Sweden) they are close to the lowest (see Annex 2.2). The tariffs for mobile call termination referred to here do not take account of the United Kingdom NRA's most recent price control review.

Regulators generally agree that the problem arises from the fact that it is the calling rather than the called party who in effect pays the termination charge. Fixed operators argue that an indication of the level of mobile termination charges in a competitive market can be gauged by halving the level of the cost of an on-net call in the mobile network concerned, and that this test reveals discriminatory levels of charging.

Mobile operators on the other hand argue that there are inherent cost-savings on on-net calls, that competition exists by virtue of the number of methods of making a call to the called party (fixed, mobile, VoIP etc), and that reductions in mobile termination charges will tend to lead to an increase in the retention charges, and therefore the margins, of fixed operators, in particular the incumbent.

Furthermore, competitive pressure is exerted by the fact that business users of mobile services will tend to gravitate to the operator with the lowest termination charges in cases where they, the business users, make a large number of calls from fixed to mobile networks in the form, for example, of calls from headquarters to a mobile sales force. However, it is argued in response that mobile operators address the price sensitivity of business users by offering targeted packages (i.e. by applying price discrimination); moreover, lack of mobile number portability and integration of fixed and mobile services impose high costs on business users wishing to switch mobile operator.

Regulators have at their disposal the ONP rules in the directives, including cost orientation principles for operators with significant market power (SMP) in the national market for interconnection, together with, in a number of cases, competition or other regulatory powers under national rules. The Commission is currently investigating a formal complaint
under Article 82 of the Treaty (abuse of a dominant position) concerning a number of mobile network operators.

The Commission considers that a range of peak time call termination charges in mobile of cent 12.44 to cent 23.69 as between Member States cannot be justified in terms of the actual costs of terminating calls, nor in terms of its level in relation to the average fixed to fixed tariff. Regulators therefore need to act to remedy excessive prices, either on the basis of the Interconnection Directive or by virtue of their competition powers. However, while the power of mobile operators in the national mobile markets and the national interconnection markets clearly varies from Member State to Member State, the range of regulatory solutions adopted, and the spread of peak call termination prices as set out in Chart 8 of Annex 2.2, illustrate the divergences possible under the current regulation.

http://europa.eu.int/information_society/topics/telecoms/implementation/annual_report/7report/documents/7report2001.pdf
While this analysis applies to the domestic termination of traffic the same comments can be made about cross-border termination. Indeed the European Commission seems not to have given the attention that would be expected to the creation of a single market in call origination.

European consumers are typically paying an additional 15 to 30 Eurocents per minute for calls to mobile telephones in other European Union member states.

Those receiving mobile calls sometimes receive money for the calls. For example, in the Netherlands one operator gives customers 3 Eurocents per minute for incoming calls. Similar schemes have been tried in Italy and Switzerland.

A number of NRAs and NCAs have made findings against mobile operators on domestic call termination rates, forcing the reduction of domestic prices. These have generally been in stages over a number of years. However, these have not been applied to international termination prices.

From 25 July 2003 a set of new directives will govern telecommunications in the European Union, the European Economic Area and, increasingly, a number of accession countries. The new directives move the emphasis towards a form of *ex ante* competition law. The crucial decision for both domestic and international mobile call termination is the definition of the market as being a single operator, rather than a national market.

The Independent Regulators Group (IRG) has published a paper from its Mobile Working Group: *One single termination market for each MNO or a national market for mobile termination?* Although not yet endorsed by the IRG it presents very powerful arguments for treating each mobile operator as a separate market for call termination and therefore necessarily dominant in that market. Such an argument justifies regulation:

Conclusion

On the basis of the arguments developed above, there is – at least currently - clear support for the statement that there are single termination markets for each mobile network and that there is no significant disciplining effect on an increase in mobile termination rates because of i) a lack of supply-side substitutability and ii) only rather limited evidence that demand-side substitutability would take place.

http://irgis.icp.pt/site/en/conteudos.asp?id_conteudo=21078&id_l=274ampln=enampid_area=277ampht=Documents

The EU will see considerable changes over the next two years as the new legal framework takes effect. This will require a number of investigations of markets under competition law to determine whether they are competitive. The result should be the exposure of a number of market failures and abuses which will be of interest to other member states.

Interconnection of messaging

The volumes of text messages have been increasing at very substantial rates. SMS has become a cultural phenomenon. For large parts of the market, especially those on fixed or

lower income, SMS has become a primary means of communication.

The international termination of text messages is of growing importance.

There is mounting evidence that mobile operators have been increasing charges for SMS in order to raise the Average Revenue per User (ARPU) of these lower spending customers. Indeed, there appears to be strong degree of concertation in the actions of the operators in how and when they raise their prices. One area where they have increased SMS charges is for interconnection. They seem inclined to blame the other operators for these increased charges. However, it also encourages customers to remain with them for cheaper on-net messaging.

SMS is transmitted in the signaling channel so that the costs to operators would appear to be minimal. Even at very large volumes they should be close to zero.

In the future there will be an evolution towards more sophisticated messaging services. This will require to be kept under review to ensure the application of the principle of cost orientation.

INTUG believes that the principle of cost-orientation should also apply to the exchange of SMS traffic.

Conclusion

Administrations and regulators have been more enthusiastic to support than to regulate the mobile sector. However, we believe that the time for forbearance is past and that necessary and delayed actions are beginning to be taken to correct demonstrable market failures.

There is evidence of substantial abuses in the markets for international call termination which require to be addressed. The additional charges being imposed on customers cannot be justified by underlying network costs.

It is an increasing problem as the number of customers using mobile phones grows. It is made worse as more operators adopt the practice of separate and higher international termination charges for their mobile networks.

The market for the termination of calls is that of the single operator on which the call is terminated. It is only through that operator that the call can be completed and thus only by paying the charges levied by that operator.

Given the absence of a workable means to introduce competition into termination markets it essential to regulate the cost of call termination.

INTUG calls on administrations to apply the principle of cost-orientation to the termination of international calls to mobile cellular networks. The costs included

Where the domestic price of mobile call termination is already being regulated, then the same principles should be applied to international call termination.

Those member states that are also signatories to the Reference Paper of the GATS are required to ensure that their commitments are met with regard to mobile cellular networks.

The market prospects for 2.5G and 3G/IMT-2000 services are presently disappointingly weak. Such services will require the interconnection of data networks if they are to be successful.

INTUG believes that these market abuses must be eliminated as quickly as possible in order to ensure that the industry is properly competitive.

INTUG's submission to the European Regulators Group - The wholesale national market for international roaming; possible remedies, May 2003

Introduction
In early 1999 INTUG first made public its concerns about the excessive prices for international mobile roaming and the absence of pan-European offerings. It is a subject to which we have returned time and again at conferences, in meetings with officials and in filings with regulatory bodies. As customers of the Mobile Network Operators (MNOs) we have continued to seek to persuade operators to abandon their oligopolistic practices and to make competitive and multi-country offerings. INTUG remains deeply concerned at the price levels of international mobile roaming and at the absence of trans-national service offerings.

INTUG has encouraged the European Commission in its sector inquiry investigating international mobile roaming. We also strongly supported the European Parliament in its efforts to ensure that the abuses in the international mobile roaming market would be addressed in the new telecommunications legislation. INTUG encouraged the European Commission to include roaming as a market in the Recommendation.

In our submission to the European Regulators Group (ERG) we encouraged it to make action on international mobile roaming a priority. INTUG was very pleased to see that in its work plan for 2003 the ERG had assigned a high priority to the issue of roaming.

Regulators outside Europe are aware of the problems of regulating international mobile roaming and are looking for a lead. Given a good start here, it will be addressed in other jurisdictions.

The barriers created by the operators around their agreements for international roaming have been a significant factor in the continuing segregation between fixed and mobile telecommunications.

Market definition
The European Commission in its Explanatory Memorandum to the Recommendation on Market Definitions, describes the market as:

"Wholesale international roaming services provide access and capacity (airtime minutes) to a foreign mobile network operator for the purposes of enabling its subscribers to make and receive calls while on another operator's network abroad. International wholesale roaming services are thus provided by a domestic mobile network operator (visited network) to a mobile network operator in another country (home network)."

INTUG considers this definition to apply in all member states and accession countries, without modification and without exception. All countries must assess this market.

Wholesale international roaming includes the provision to a foreign operator of a full and integrated range of services:

* access (including signalling)
* voice call origination
* voice call termination
* text messaging
* IP data communications

The addition of MMS, GPRS and EDGE appear to be taking longer than might have been expected. Operators are evidently struggling with technical and billing problems. Where prices are available, they are very high.

There are two closely related markets in which mobile network operators may provide services to other operators in the same country:

* national roaming for MNOs
* services to Mobile Virtual Network Operators (MVNOs)

These will be relevant, since remedies imposed on MNOs in the wholesale market for international mobile roaming may well have effects in those markets. The distinctions between the three markets are partly technical, but appear largely to be the result of the practices of the operators, often under the umbrella of the various agreements of the GSM Association.

Market analysis

The market players are all the licensed operators in a given country. MVNOs and service providers would not be included since they do not, at present, supply or purchase wholesale international mobile roaming services.

The market has been subject to detailed analysis by DG Competition in its Working Document on the sector inquiry.

This led to the view that national wholesale markets were characterised by:

* high concentration ratios
* homogeneous service
* similar cost structures
* high barriers to entry
* inelastic market demand
* a general lack of incentives to reduce prices
* greater variation from country to country than would be expected

* dislocation from retail markets, located in another country
* excessive and rising prices
* almost identical prices
* apparent coordination of pricing behaviour and/or tacit collusion
* agreements and activities of the GSM Association reinforcing the oligopoly

These continue to characterise the market for international mobile roaming.

The MNOs appear to take the non-discrimination clause in the GSM Association agreements so severely that they offer little if any discounting between operators. They also engage in a refusal to deal with foreign operators that do not have a mobile network operator licence. Together, these conditions severely limit and all but preclude competition in the market.

The abuses of excessive pricing have recently been extended to the General Packet Radio Service (GPRS) where we are seeing roaming prices in adjoining European countries that are up to ten times the price in the home country.

Significant market power

In order to regulate the wholesale market, NRAs will have to find at least one operator to be dominant. Since no operator is likely to be dominant in its own right, then the doctrine of joint dominance will be the correct approach to designating SMP operators in terms of Article 14 and Annex II of the Framework Directive (2002/21/EC) and the Guidelines on market analysis and the assessment of significant market power.

The use of joint dominance would be opposed by the MNOs, not least because of the opportunity it might afford for very lengthy appeals, including to the European Court of Justice (ECJ). The actions of the MNOs over mobile number portability and fixed-to-mobile call termination rates suggest that protracted rearguard actions are their normal practice. The MNOs may also oppose being designated as having SMP because it could open them to civil litigation under competition law.

Nonetheless, it is clear that this is precisely the sort of case to which the joint dominance doctrine, from Article 82 of the Treaty and the the jurisprudence of the Court of Justice, should be applied.

The Court of First Instance set out in Airtours *versus* European Commission (Case T-342/99) the criteria for joint dominance:

- first, each member of the dominant oligopoly must have the ability to know how the other members are behaving in order to monitor whether or not they are adopting the common policy. As the Commission specifically acknowledges, it is not enough for each member of the dominant oligopoly to be aware that interdependent market conduct is profitable for all of them but each member must also have a means of knowing whether the other operators are adopting the same strategy and whether they are maintaining it. There must, therefore, be sufficient market transparency for all members of the dominant oligopoly to be aware, sufficiently precisely and quickly, of the way in which the other members' market conduct is evolving;

- second, the situation of tacit coordination must be sustainable over time, that is to say, there must be an incentive not to depart from the common policy on the market. As the Commission observes, it is only if all the members of the dominant oligopoly maintain the parallel conduct that all can benefit. The notion of retaliation in respect of conduct deviating from the common policy is thus inherent in this condition. In this instance, the parties concur that, for a situation of collective dominance to be viable, there must be adequate deterrents to ensure that there is a long-term incentive in not departing from the common policy, which means that each member of the dominant oligopoly must be aware that highly competitive action on its part designed to increase its market share would provoke identical action by the others, so that it would derive no benefit from its initiative (see, to that effect, Gencor v Commission, paragraph 276);

- third, to prove the existence of a collective dominant position to the requisite legal standard, the Commission must also establish that the foreseeable reaction of current and future competitors, as well as of consumers, would not jeopardise the results expected from the common policy.

International mobile roaming fully meets all three criteria.

An important part of the feedback loop for the operators is the work of financial analysts on their performance. Any decline or hint of a decline in Average Revenue Per User (ARPU), which are reported with monthly data, will result in a reduction of the share price of the operator concerned.

INTUG believes that all licensed MNOs in each member state should be designated as having SMP, based on joint dominance.

Economic harm

The most direct effects of the dominant oligopoly are to increase prices for roaming and to allow operators to maintain those excessive prices over a period of many years, generating for them considerable additional revenues. This is directly detrimental to users in that it increases our costs and inhibits our ability and willingness to use mobile telecommunications within the Union and more widely. Consequently, it has a significant effect on cross-border trade.

The United Kingdom's Competition Commission recently investigated fixed-to-mobile call termination rates. One of the questions it had to address was where the "excessive profits" had gone. It concluded they had been squandered in acquisitions, handset subsidies, low call origination charges and the like.

The existing market abuses are being extended from well established 2G services, such as voice and SMS, to new services. This has the effect of significantly limiting the adoption of technical innovation. In particular, it is damaging the creation of a market for mobile data services.

The mobile network operators endeavour to obscure this by making financial reports that try to pass off SMS revenues as data revenues. Setting aside SMS revenues, there is very little revenue from data services.

The European Commission in the merger case of Vodafone and Mannesmann (Case No COMP/M.1795), noted:

37. Vodafone Airtouch submits that it does not believe that a single interconnected pan-European network is likely to develop imminently. However, this is contrary to Vodafone Airtouch’s own Offer Document of 23 December 1999, in which it is stated that the merged entity will be able to provide a global platform by mid-2000 that will provide messaging services, location based content and mobile e-commerce in a uniform manner on a global basis.

However, the promises of the Offer Document remain unfulfilled. Rather than break down the highly profitable rigidities of the roaming agreements, the operators, including Vodafone, have held back from service innovation. This is an area of considerable disappointment to users, in particular because of the absence of pan-European and global services.

The best the operators have are schemes of home country plus rest-of-Europe roaming which are demonstrably not pan-European offers. The Eurocall and Worldclass schemes, respectively from Vodafone and T-Mobile, offer some modest

savings to the largest users. While they have come down in price it has been painfully slow.

The purported benefits that were to flow from the cross-border consolidation of mobile operators over the last few years have not been delivered to users.

Despite many forecasts in the 1990s, we have seen almost no progress in Fixed Mobile Convergence (FMC). This is an area where Europe had been expected to take a lead, because of the strength of early GSM developments. The major obstacles to this have been the barriers created around international mobile roaming and also the very high levels of fixed-to-mobile call termination. Fixed operators have been unable to obtain the wholesale elements necessary to bundle fixed and mobile services. So that they have been unable to step in where MNOs have failed. Mobile operators have sought to distance themselves from fixed telecommunications which they saw as insufficiently profitable and unattractive to the financial markets.

There is growing evidence that MNOs are responding to the very real threat of mobile data services using Public Wireless Local Area Networks by seeking to take a share in such businesses and to drive up the prices. WLANs can offer prices that are significantly lower than either 2.5G or 3G and much higher bandwidth. The involvement of MNOs in PWLAN could well stifle competition and see the propagation of their oligopolistic practices.

The action of the dominant oligopoly has been to deprive users of the technical and economic benefits of pan-European and advanced services, including fixed-mobile convergence in order to further their own short term financial interests.

Cost orientation

The remedies to be imposed on operators with SMP are required to be proportionate. They must also eliminate or very substantially reduce the problems identified in the analysis of the market. If successful, the remedies should obviate the need for regulation in the retail market.

Cost-orientation is a well established remedy that would provide the regulatory means to achieve what competition should have but has not delivered.

Cost orientation could be achieved by benchmarking. However, experience shows that this can be and would be manipulated by the operators with a view to raising the level of the benchmark well above cost. The mobile operators raised their prices during the sector inquiry by DG Competition and appear to have arranged prices in anticipation of a benchmark.

A Long Run Incremental Cost (LRIC) model could be built for roaming. Although there has been some work in this area, such studies might be time consuming. Moreover, they would also be expected to be subject to protracted appeals by MNOs.

An intermediate solution would be to tie wholesale roaming to appropriate prices found in a competitive market. This could either be the wholesale market for MVNOs or the retail market.

The use of retail prices would require proof that the markets are truly competitive, a subject of considerable scepticism amongst users. Given the enormous complexity of retail tariffs, it would be essential to use a basket of prices. Moreover, it would be necessary to deduct marketing costs and the savings made from the absence of credit risks. Given that in all member states the termination rates are excessive these could not reasonably be included in such a model. A further complication is that many retail prices contain cross-subsidies, notably for handsets, which should also be discounted.

It seems highly probable that only LRIC meets the necessary obligations to be proportionate and transparent. The alternatives appear to distort or to replicate existing distortions in the market, with the possible exception of using wholesale prices for MVNOs, where such prices are available.

Alternative remedies
Doubtless, the MNOs will argue for "alternative" approaches that they consider to be less intrusive. They will protest, once again, that they love nothing more than to compete fiercely one with another. However, behavioural remedies run a very considerable risk of being wholly ineffective. Given the long history of the mobile sector it would be a brave decision to rely on the improved behaviour of the MNOs. Hard-core international cartels are notoriously difficult to eliminate.

Alternative remedies would have to achieve some quite significant level of competition in the market, either by forcing operators to compete with each other, or by introducing new market players who would be competitors or, better still, both.

Some of these approaches would benefit from close coordination between NRAs. If similar measures were taken in a number of member states, at about the same time, it would facilitate market entry, especially for pan-European services. Yet the delays and the variations in transposition strongly suggest that NRAs will not be in a position to offer a concerted decision on international mobile roaming.

Moreover, coordination may be thwarted by a range of decisions taken in domestic appeals.

Additional legal powers exist for NRAs regulating trans-national markets in Article 15 (4) of the Framework Directive. This appears to be the only plausible way for concerted regulatory action to succeed.

One simple measure would be to remove the apparent ban on MVNOs and service providers from offering roaming services to foreign operators. This would allow a small number of new players into the wholesale market, permitting them to obtain a share of the highly lucrative roaming business. However, MVNOs and service providers are very closely tied to MNOs and so are implausible as potential strong competitors. The hopes that were once held for MVNOs have, so far, proved unfounded. Consequently, the likely effect of this remedy might be a small step reduction in prices and a modest redistribution of market shares. Therefore, it is an implausible remedy.

GSM operators in one country will only sell roaming services to licensed operators from another country. This appears, prima facie, to be a restraint of cross-border trade. A plausible remedy, with minimal intervention in the market, would be to oblige operators to sell roaming services to any operator or market player whether licensed or not.

Separately, the MNOs sell international roaming to domestic MVNOs. It would be possible and not unreasonable to require them to re-sell international mobile roaming to any operator or service provider.

Given certain technical requirements an operator in another country, one that did not hold a mobile telephone licence, could take advantage of a wholesale offer of mobile services. It would require the ability to emulate a mobile network, a supply of SIM cards, access to numbering resources and billing software. Given access to mobile networks in several countries such an operator would appear to be able to create pan-European services, with a potentially wide footprint of service. Such players could be MVNOs, service providers or fixed network operators.

However, the problem with this remedy appears to that few companies exist that would be able and inclined to take advantage of the opportunity. There is almost no funding from financial markets, so that new entrants could not be expected in the foreseeable future. There are barely a handful of pan-European voice operators and they have been excluded for so long from mobile telephony that it is very doubtful they any longer see Fixed Mobile Convergence (FMC) as their future business model. Moreover, a couple of the leaders are affiliates of mobile network operators and thus

will not compete. To make matter worse, many such operators have been engaged in fierce battles with MNOs over fixed-to-mobile call termination rates. Consequently they view the MNOs as companies with whom they would be unable to do business. Thus, while it seems attractive to open the wholesale market to new players, it seems extraordinarily unlikely to generate competition or to facilitate new retail offers.

Another approach again would be to remove the disjuncture between wholesale and retail markets. At present a foreign MNO buys a package of roaming services on behalf of its customers. It would be possible to abandon the roaming model and to allow, or even to force, the foreign operator to buy only "air time", that is a connection back to a point of interconnection with its own network. This would be the equivalent of Carrier Selection and Carrier Pre-Selection for customers while roaming, they would then to connected directly back to their home operator. It would have the effect of obliging the foreign operator to take responsibility for its own customers, even when they roam. In such a case it would be sensible to exclude "local" calls, that is those made to the country in which roaming occurred.

The duration of any remedy would be likely to be two years. This is far too short for a new market player to establish a business and recover its costs. The brevity of this period undermines many and perhaps all alternative remedies.

INTUG recommends that the ERG examines carefully these alternatives to cost orientation in the hope that one or more would create a significant effect on competition in the market. However, on the evidence available to us it seems that the only effective and proportionate remedy is cost-orientation using the LRIC model.

The financial implications

International mobile roaming constitutes 15 to 25 per cent of the revenues of MNOs in Europe. Consequently, regulatory intervention could have a substantial effect on the operators. A reduction in wholesale prices would result in a reduction of revenues, both from visiting foreigners and in the mark-up on its own customers travelling abroad. The extent of any loss of revenues would depend on the scale and the rapidity of the price reductions. However, assuming that wholesale price reductions were passed on and that retail prices were to decline, then there should be an increase in the volume of calls made using international mobile roaming and a corresponding rise in income.

In the cases where fixed-to-mobile rates have been subjected to regulation or to the prospect of regulation, then operators have been forthright in claiming this would hit

them very hard financially. They have threatened to raise retail prices, to abandon handset subsidies and to reduce capital spending on 3G networks. Doubtless, they will make similar claims concerning the regulation of roaming charges. If the call origination market is competitive, as they claim, then their capacity to raise prices will be very limited.

The MNOs have gone to considerable lengths to delay both proceedings and the implementation of decisions. They have very strong financial incentives to delay reductions in international mobile roaming rates. Equally, they have sound reasons, to play up the risks of delays in the introduction of 3G services.

MNOs are very tightly monitored by financial analysts using the ARPU. This restricts their ability to make commercial decisions which would, in the short term, reduce ARPU. Consequently, bring forced to act by NRAs might help them make commercial decisions. In those circumstances, some operators might decide to compete, for example, by offering pan-European services.

The financial markets have already taken into account a range of possible regulatory outcomes.

Conclusions

International mobile roaming remains as much a concern to users today as it was in 1999. If anything it is a more frustrating problem, given the increasing costs and the continuing refusal of the operators either to compete with each other or to respond to requests for pan-European services.

Action by NRAs is now feasible and even obligatory under the new directives. It is also timely, since this abuse has been allowed to run for much too long. It has been clear to the operators for several years that their dominant oligopoly ran a very high risk of being either found unlawful or being subjected to regulation.

Coordinated action by the European Regulators Group (ERG) would be a valuable statement to operators who have in the past tried to badger and to pick off individual NRAs. It would also send an important signal beyond Europe. A resolution of the problem of international mobile roaming would be a very considerable achievement for the ERG and the NRAs.

Reduction of wholesale prices for international mobile roaming to LRIC prices appears to be the most effective means of regulation. NRAs will have to monitor markets to ensure that price savings are passed on to end consumers and not merely soaked up in ever higher mark-ups by operators.