



Office of the Director of
**Telecommunications
Regulation**

OfTel

Office of
Telecommunications

GENERAL

Benchmarking study and Consumer Advice on mobile roaming between Ireland and the UK

-

A report by the ODTR, part of a joint
ODTR/OfTel study on mobile roaming

Document No: 02/34

Date: 4th April 2002

Oifig an Stiúirthóra Rialála Teileachumarsáide

Office of the Director of Telecommunications Regulation

Abbey Court, Irish Life Centre

Lower Abbey Street, Dublin 1, Ireland

Tel. +353 1 804 9600 Fax. +353 1 804 9680 E-mail info@odtr.ie

CONTENTS

1	Introduction	3
1.1	CONSIDERATIONS WHEN READING THIS REPORT	3
2	General advice to Irish consumers	4
2.1	RANGE OF MOBILE ROAMING TARIFFS AVAILABLE.....	4
2.2	TYPES OF TARIFFS AVAILABLE.....	4
2.3	GENERAL OPTIONS FOR REDUCING THE COST OF MOBILE ROAMING	5
3	Costs for Irish consumers roaming in the UK.....	7
3.1	OVERVIEW OF PROFILES	7
3.2	SUMMARY OF PROFILE RESULTS	7
3.3	PROFILE 1: IRISH CUSTOMER TAKING A TWO WEEK HOLIDAY IN THE UK.....	9
3.3.1	<i>Summary of Advice for Profile 1.....</i>	<i>9</i>
3.4	PROFILE 2: UK CITIZEN RETURNING TO UK FOR ONE WEEKEND A MONTH.....	9
3.4.1	<i>Summary of Advice for Profile 2.....</i>	<i>9</i>
3.5	PROFILE 3: IRISH BUSINESS CONSUMER VISITING THE UK ONCE A MONTH.....	10
3.5.1	<i>Summary of Advice for Profile 3.....</i>	<i>10</i>
3.6	PROFILE 4: IRISH RESIDENT WORKING IN NORTHERN IRELAND AND COMMUTING..	11
3.6.1	<i>Summary of Advice for Profile 4.....</i>	<i>11</i>
4	Comparison of roaming costs for Irish consumers versus UK consumers	12
4.1.1	<i>Comparison of roaming costs using average of two best deals available.....</i>	<i>12</i>
4.1.2	<i>Comparison of roaming costs using two earliest entrant operators</i>	<i>13</i>
4.1.3	<i>Summary:</i>	<i>14</i>
	Annex A: Detailed analysis of the cost for Irish consumers roaming in the UK	15
	Annex B: Detailed analysis of the cost for UK mobile users roaming in Ireland	32
	Annex C: Details of Methodology.....	45
	Annex D: Irish and UK operator tariff data	49

LEGAL DISCLAIMER

The information and statistics contained within this document are derived from a variety of sources. While all reasonable care has been taken in preparing it, no responsibility whatsoever is accepted by the Director of Telecommunications, her lawful servants or agents for any loss or damage, howsoever caused, through any reliance whatsoever placed upon any statement or any calculation howsoever made in this document.

Foreword by the Director

Due to the increasing frequency with which consumers are using their mobile phone abroad and the growing importance of this service to consumers, the ODTR and Oftel undertook this joint project on international roaming with the aim of increasing consumer awareness of international roaming costs and options available to consumers to reduce these costs.

This report gives advice to consumers on options to reduce their international roaming costs, and in particular the potential international roaming savings available to Irish consumers roaming in the UK which may accrue depending on their choice of international roaming service provider. A second report presents consumer awareness, usage and satisfaction results with regards to their use of mobile phones abroad from consumer surveys carried out in February 2002 for Oftel and the ODTR.

The findings of this report are based upon a snapshot of operator tariffs collected in February 2002. While operator tariffs change from time to time and consumers are advised to contact their mobile provider in order to obtain the current operator tariffs when assessing their potential savings, this report gives generic advice that can be used by consumers to make savings on their international roaming costs.

The exact savings on international roaming costs depend on the individual's traffic usage pattern and operator's tariffs. However savings of up to 85% on international roaming costs can be made by changing from a pre-pay to a post pay contract and up to 51% by manually selecting the least expensive UK network as opposed to the most expensive UK network. Using an International Traveller Service only provides savings for heavy usage customers, e.g. business customers.

Comparing results between Irish and UK consumers, no clear picture emerges on the relative position of the UK versus Ireland prices. However it does appear that in general UK business consumers do relatively better than Irish consumers, while Irish consumers making the majority of their calls within the UK do better than their UK counterparts.

I am very pleased to be co-operating with Oftel on this project and hope that consumers will benefit from this work. Given the increasing harmonisation of the telecommunications sector across Europe, I expect that such co-operation between National Regulatory Authorities will play an increasing role in setting the future regulatory environment under the new European Regulatory Framework.

Etain Doyle,

Director of Telecommunications Regulation.

1 Introduction

A clear benefit of a mobile phone is the ability to remain in contact when travelling abroad. Mobile operators refer to this service as international roaming. Whilst most Irish¹ consumers are aware that they can use their mobile phone when travelling abroad, many consumers are not aware of the exact cost of mobile roaming and/or options available to them to reduce costs when using their phone abroad.

The objective of this joint report on mobile international roaming is to increase consumer awareness regarding the costs involved and to give advice to consumers with regards to the options available to reduce these costs. This report indicates the potential savings that Irish consumers can make by using these options while roaming in the UK and vice versa for UK consumers. Furthermore, this report compares the relative costs of international roaming for Irish and UK consumers.

It should be noted that this report has been prepared by the ODTR, and that a similar report for the UK can be found at www.oftel.gov.uk

1.1 Considerations when reading this report

In reading this report and in evaluating options when roaming in the UK consumers should be aware that:

- Operator prices fluctuate - this report is based on tariffs valid as at February 2002². Consumers should contact their Irish mobile operator for specific rates prior to travel.
- Individual mobile phone usage will vary and this should also be taken into account when assessing costs and cost reduction options.

In addition, this report gives indicative advice to consumers based upon mobile roaming tariffs. In practice, consumers should take other relevant factors into consideration:

- network coverage
- quality of customer service from chosen network.
- access to and cost of additional services – voicemail, data, SMS etc.
- duration of contractual agreement with chosen network.

¹ Irish consumers and operators in this report refer to consumers and operators in the Republic of Ireland.

² The standard rate of Irish VAT increased from 20% to 21% with effect from 1 March 2002, therefore some operator rates including VAT may have changed

2 General advice to Irish consumers

The purpose of this chapter is to provide specific advice to Irish consumers using their mobile phones while visiting the UK.

2.1 Range of mobile roaming tariffs available

Fundamentally the best advice that can be given to consumers is to be aware of all the charges they will pay on different networks while roaming in the UK. Table 2.1 below outlines the range of tariffs available to pre-pay and post-pay Irish mobile customers when roaming in the UK.

Table 2.1: Range of tariffs available to Irish customers roaming in the UK

Range of tariffs available to Irish consumers roaming in the UK (including VAT at 20%)				
	Receiving calls while roaming in the UK	Calls made to fixed numbers in the UK	Calls back to Ireland - per min	Cost of Sending SMS messages
Pre-pay	€0.44 - €1.27	€0.29 - €1.90	€1.22 - €1.90	€0.09 - €0.44
Post pay – standard	€0.44 - €0.68	€0.17 - €0.66	€0.44 - €1.42	€0.09 - €0.41
Post-pay – standard & ITS	€0.36 - €0.68	€0.17 - €1.20	€0.36 - €1.42	€0.09 - €0.41

Note: The tariff range above is for peak time only, as per February 2002

2.2 Types of tariffs available

Roaming tariff options available to Irish consumers vary. Annex D contains detailed tariff data for Irish operators. Some general features of these options are:

- There is a cost to receive voice calls while roaming in the UK - but there is no cost to receive SMS in the UK.
- The cost per minute of making calls in the UK may vary according to which network is used. There are 3 main models:
 - tariff varies by visited operator
 - flat rate tariffs across all operators; or
 - "partner schemes" where there are lower charges for the partner network.
- An operator may require a deposit before roaming is enabled;
- There may be a fixed monthly charge (generally only if an International Traveller Service (ITS) is chosen).

2.3 General options for reducing the cost of mobile roaming

There are a number of options available to consumers for reducing the cost of international roaming as outlined below.

While this section gives indicative advice, consumers should check these options with their mobile provider before making decisions regarding their mobile service.

Furthermore in considering some of the options below, consumers should be aware that the potential to reduce mobile roaming costs will depend on their individual usage patterns.

Change from pre-pay to a post-pay service: In general roaming tariffs on post-pay (contract) services are significantly lower than tariffs available to pre-pay consumers. However, consumers should consider the long-term cost of a post-pay contract before switching from pre-pay. General considerations for consumers include:

- level of domestic mobile usage;
- willingness to contract for a minimum period;
- the charge for monthly access and any inclusive airtime/ minutes;
- there may be a requirement to change mobile number.

Use International Traveller Services (ITS): Most mobile operators provide post-pay customers with an additional international roaming option, whereby a customer can avail of cheaper flat rate call charges with one or more UK networks by committing to an additional monthly access or service fee. The commitment period can be as little as one month. Consumers using an ITS should ensure the ITS rate is available on the network they are using in the UK.

Diverting and barring incoming calls: Barring or diverting³ mobile calls can reduce international roaming costs as, in general, there is a charge for receiving mobile calls when abroad.

- A mobile user can divert incoming calls directly to voicemail or another number in Ireland rather than receiving calls (and paying for each call received) while roaming. The user can then make one call back to check messages received and decide which messages require attention.
- A mobile user may also bar incoming calls completely. This may suit mobile users who only make outgoing calls.

³ Consumers should note that in some instances an additional charge may apply for call diversion.

Use text messages (SMS) instead of voice calls: Sending text messages rather than making voice calls may be a cheaper option depending on the operator's rates, see Annex D for mobile roaming rates in UK. Furthermore, most mobile operators do not charge for receiving text messages while roaming in the UK, so roamers may avoid the cost associated with receiving incoming calls by receiving text messages in their place.

Manually select a network to roam on: When arriving in the UK a consumer's mobile phone may select a preferred network or one with the strongest signal. However, this may not necessarily be the cheapest option. Consumers can manually⁴ choose the network they wish to use in order to select the network operator that reduces their roaming costs, see Annex D for mobile roaming rates in UK.

Avail of cheaper off-peak tariffs: Off-peak rates can be significantly cheaper than peak rates when roaming in the UK, see Annex D for mobile roaming rates in UK. The times for off-peak will vary across networks and some operators charge peak rate on Saturday so care should be given to network selection.

Swap the "SIM card" in your phone: Functionality in the SIM (Subscriber Identity Module) card allows a mobile phone to operate on a mobile network. By using the SIM card of a UK network in the UK, the consumer may cut their bill significantly as they now avail of the UK rates for making and receiving calls. However consumers should take the following into consideration:

- Do the alternative SIM cards have expiry dates?
- Does the Irish provider need to unlock the handset first, and if so, is there any additional cost associated with this?
- Are the contact numbers needed abroad stored in the mobile phone memory or the SIM card memory? By storing numbers on the phone memory those numbers will still be available regardless of SIM changes.
- When using a UK SIM the consumer will need to change to a UK mobile number. The cost may then increase to consumers calling this UK number from Ireland.

Other Options: Consumers could consider buying or renting a different mobile phone to use in the UK or using payphones for making calls.

⁴ Most phones have a manual network selection feature that lists the available roaming networks. The handset user guide should inform the consumer how to manually select a network.

3 Costs for Irish consumers roaming in the UK

This chapter examines the cost of mobile roaming for different consumer profiles based on a snapshot of tariff data taken in February 2002⁵. For each profile the impact on cost to the consumer is assessed under some of the options listed in chapter 2. More detailed analysis of costs on each profile is outlined in Annex A of this report.

3.1 Overview of Profiles

As already stated the operator tariff data used in this report was current as of February 2002 and is available in Annex D of this report. Consumers should be aware that mobile roaming tariffs change on a regular basis and therefore should contact their provider for an update on roaming tariffs before visiting the UK.

The following profiles have been used:

- **Profile 1:** an Irish residential consumer taking a two week holiday in the UK;
- **Profile 2:** a UK citizen working/studying in Ireland, returning home to the UK for a weekend once a month;
- **Profile 3:** an Irish business consumer visiting the UK once a month; and
- **Profile 4:** an Irish resident working in Northern Ireland, commuting daily across the border.

3.2 Summary of Profile Results

Table 3.1 presents a summary of the potential savings on international roaming costs for consumer profiles 1-4, when switching from a pre-pay to a post-pay contract, using an International Traveller Service or manually selecting the least expensive UK network.

These savings have been calculated using operator tariff data that was current as of February 2002 and more detailed calculations on these rates can be found in Annex A of this report. However, consumers should be aware that these potential savings may have changed due to operators changing their international roaming tariffs and therefore consumers should contact their operator for up to date tariff data.

⁵ The standard rate of Irish VAT increased from 20% to 21% with effect from 1 March 2002, therefore some operator rates including VAT may have changed

Table 3.1 Summary of potential savings based on consumer profiles 1-4

		Profile 1	Profile 2	Profile 3	Profile 4
		2 week holiday	Visit Home one weekend a month	Business Trip once a month	Daily Commuter
		Potential Saving (%)	Potential Saving (%)	Potential Saving (%)	Potential Saving (%)
Changing from pre-pay to post pay	Vodafone (Irl)	50% to 60%	78% to 80%	26% to 46%	50% to 60%
	Digifone	64% to 77%	81% to 85%	44% to 72%	64% to 77%
	Meteor	*	*	*	*
Using an International Traveller Service	Vodafone (Irl)	No Saving	No Saving	17% to 39%	No Saving
	Digifone	No Saving	No Saving	Up to 34%	No Saving
	Meteor	Na	Na	Na	Na
Manually selecting the least expensive UK network (as opposed to most expensive network)	Vodafone (Irl)	19%	9%	27%	19%
	Digifone	37%	22%	51%	37%
	Meteor	19%	10%	13%	19%

** For Meteor pre-pay customers there is no difference between the pre-pay and post-pay tariffs.*

Other methods may also reduce costs

- Bar or divert incoming calls
- Use text messages (SMS) instead of voice calls – receiving an SMS in the UK is free of charge
- Use a payphone if cheaper for outgoing calls
- Buying a UK SIM – may only be cost effective for heavy usage consumers

3.3 **Profile 1: Irish customer taking a two week holiday in the UK**

For this profile the assumed mobile phone usage pattern is:

- Makes 15 minutes of off-peak calls back to Ireland
- Makes 3 minutes of off-peak calls to fixed lines in the UK
- Receives 6 minutes of off-peak calls while roaming

3.3.1 *Summary of Advice for Profile 1*

With the exception of Meteor pre-pay customers, profile 1 consumers on a pre-pay service can reduce their international roaming costs by between 50% and 77% when moving to post-pay contract. However as this is only a once off trip the long-term costs of switching to a post-pay contract need to be considered by the consumer.

Profile 1 consumers on a post-pay contract will not make any significant savings on roaming costs by switching to an International Traveller Service.

By manually selecting the least expensive UK network as opposed to the most expensive UK network, profile 1 consumers on a post-pay contract (and Meteor pre-pay consumers) can reduce their international roaming costs by between 19% and 37%.

Both pre-pay and post-pay consumers can make savings by replacing voice calls (in particular calls back to Ireland) with text messages and through control of incoming calls using barring and diversion.

There may be other cost savings to be made by using payphones for certain calls however the cost for calls from UK payphones have not been included in this report.

3.4 **Profile 2: UK citizen returning to UK for one weekend a month**

For this profile the assumed mobile phone usage pattern is:

- Makes 1.5 minutes of off-peak calls back to Ireland
- Makes 7.5 minutes of off-peak calls to fixed lines in the UK
- Receives 3 minutes of off-peak calls while roaming

3.4.1 *Summary of Advice for Profile 2*

With the exception of Meteor pre-pay customers, profile 2 consumers on a pre-pay service can reduce their international roaming costs by between 78% and 85% by moving to post-pay contract. As a profile 2 consumer is travelling on a more regular basis than the profile 1 consumer, a switch to a post-pay contract may be worth considering, again once domestic usage justifies that switch.

Profile 2 consumers on a post-pay contract will not save on roaming costs by switching to an International Traveller Service.

By manually selecting the least expensive UK network as opposed to the most expensive UK network, profile 2 consumers on a post-pay contract (and Meteor pre-pay consumers) can reduce their international roaming costs by between 9% and 22%.

Both pre-pay and post pay consumers can make savings by replacing voice calls (in particular calls back to Ireland) with text messages and through control of incoming calls using barring and diversion.

Profile 2 pre-pay consumers on Vodafone (Irl) and Digifone can save approximately 75% on their international roaming costs by using a UK SIM. However the costs of using a UK SIM card depends critically on the choice of UK network, and the least expensive UK network is used in these calculations (see Annex A).

There may be other cost savings to be made by using payphones for certain calls however the cost for calls from UK payphones have not been included in this report.

3.5 Profile 3: Irish business consumer visiting the UK once a month

For this profile the assumed mobile phone usage pattern is:

- Makes 17 minutes of peak calls back to Ireland
- Makes 3 minutes of peak calls to fixed lines in the UK
- Receives 12 minutes of peak calls while roaming

3.5.1 Summary of Advice for Profile 3

With the exception of Meteor pre-pay customers, profile 3 consumers on a pre-pay service can reduce their international roaming costs by between 26% and 72% by moving to post-pay contract. For profile 3 consumers advice on pre-pay service may not be as relevant as advice for post-pay, given that most business users tend to be on post-pay contracts.

Profile 3 post-pay consumers can save up to 39% on roaming costs by switching to an International Traveller Service.

By manually selecting the least expensive UK network as opposed to the most expensive UK network, profile 3 consumers on a post-pay contract (and Meteor pre-pay consumers) can reduce their international roaming costs by between 13% and 51%.

Both pre-pay and post-pay consumers can make savings by replacing voice calls (in particular calls back to Ireland) with text messages and through control of incoming calls using barring and diversion.

As this profile is calculated using peak rates, profile 3 post-pay (and Meteor pre-pay) consumers can also make savings by making and receiving more calls off-peak if possible.

Profile 3 pre-pay and post-pay consumers can make savings by switching to a UK SIM card. A Profile 3 consumer on an Irish pre-pay tariff can save between 71% and 85% of their international roaming costs by switching to a UK SIM card while a post-pay consumer can save between 47% and 75% of their international roaming costs by using an UK SIM card. However the costs of using a UK SIM card depends critically on the choice of UK network, and the least expensive UK network is used in these calculations (see Annex A).

There may be other cost savings to be made by using payphones for certain calls however the cost for calls from UK payphones have not been included in this report.

3.6 Profile 4: Irish resident working in Northern Ireland and commuting

For this profile the assumed mobile phone usage pattern is:

- Makes 15 minutes of off-peak calls back to Ireland
- 3 minutes of calls to fixed lines in the UK
- Also receives 6 minutes of calls while roaming

3.6.1 Summary of Advice for Profile 4

The mobile phone usage pattern for profile 4 is the same as that for profile 1, so therefore the potential savings on international roaming costs for profile 4 are the same as those for profile 1. However the profile 4 consumer travels more frequently and as a result certain advice is different.

For changing from a pre-pay service to a post-pay contract the long term costs may justify this change considering this user roams frequently on UK networks.

For commuters the option of switching to a UK SIM when in Northern Ireland may be more beneficial as the initial cost of purchasing the UK SIM is spread over a longer period.

A Profile 4 consumer on an Irish pre-pay tariff can save between 43% and 82% of their international roaming costs by switching to a UK SIM card while a post-pay consumer can save between 23% and 54% of their international roaming costs by using an UK SIM card. However the costs of using a UK SIM card depends critically on the choice of UK network, and the least expensive UK network is used in these calculations (see Annex A).

4 Comparison of roaming costs for Irish consumers versus UK consumers

This chapter provides a comparison of the costs faced by UK consumers roaming in Ireland versus costs faced by Irish consumers roaming in the UK. The comparison is based on:

- taking the costs faced by Irish consumers and converting from Euro to UK£ using OECD Purchasing Power Parity (PPP) exchange rates⁶
- taking the average of the 2 cheapest tariffs (from different operators) for each country: this is done separately for pre-pay tariffs and for post-pay tariffs (where the latter include both standard and ITS tariffs)
- constructing a price index for costs for Irish consumers relative to UK consumers (UK index=100).

While the approach to constructing an index is similar to the approach used by Oftel in its other International Benchmarking work the comparison itself is different (www.oftel.gov.uk/publications/mobile/roam1101.htm):

- in this report, prices for UK consumers visiting Ireland are compared to prices for Irish consumers visiting the UK;
- in Oftel's other benchmarking work, the costs for UK consumers visiting a range of other countries are compared to the costs for consumers from other countries roaming in the same set of visited countries.

4.1.1 *Comparison of roaming costs using average of two best deals available*

The results for pre-pay consumers are shown in table 4.1 and the results for post-pay consumers in table 4.2. It is seen that:

- for pre-pay consumers for all profiles UK prices are significantly higher than Irish prices
- for post-pay consumers the relative price depends on the profile - on average, prices in the UK are similar to those in Ireland.

For post-pay consumers, Irish consumers on profile 2 (visit home one weekend a month) do relatively well when compared to the results for the other profiles. For this profile the majority of calls are made within the visited country, rather than back home. In general, the ratio of the cost of calls back home to calls within country is higher for tariffs from the Irish operators than the UK operators, and this is reflected in this result. In general, Irish consumers will do

⁶ The OECD 'PPP' (purchasing power parity) rate applied was 0.72

relatively better (compared to UK consumers) when they make most of their calls within the UK, than when most of their calls are back home.

For post-pay consumers on profile 3 (business trip once a month), UK consumers do relatively well when compared to the results for the other profiles. On this profile calls are assumed to be made at peak times. In general, UK prices show relatively little variation between peak and off-peak times; Irish prices for some tariffs show a bigger differential. In general, UK consumers will do relatively better (compared to Irish consumers) when most of their calls are at peak times, rather than when most of their calls are at off-peak times.

Table 4.1: Price index for International Roaming charges for Irish and UK consumers using a pre-pay tariff - average of two best deals available.

Description	Profile 1	Profile 2	Profile 3	Profile 4	Average
	2 week holiday	Visit one weekend a month	Business trip once a month	Daily commuter across border	
Ireland	75	63	82	75	74
UK	100	100	100	100	100

February 2002 prices

Table 4.2: Price index for International Roaming charges for Irish and UK consumers using a post-pay tariff - average of two best deals available.

Description	Profile 1	Profile 2	Profile 3	Profile 4	Average
	2 week holiday	Visit one weekend a month	Business trip once a month	Daily commuter across border	
Ireland	102	66	152	102	105
UK	100	100	100	100	100

February 2002 prices

4.1.2 *Comparison of roaming costs using two earliest entrant operators*

The results have also been run considering only the two operators in each country who were the earliest entrants (BT Cellnet and Vodafone in the UK and Vodafone (Irl) and Digifone in Ireland), as these operators are likely to have the highest number of roaming subscribers. The results are shown in tables 4.3 and 4.4. The results show that:

- For pre-pay customers, Ireland now appears to have higher charges than the UK - this is due to Meteor's pre-pay roaming rates being significantly lower than the rates for the other Irish operators, hence removing Meteor from the average pushes up the costs for Ireland
- For post-pay customers, the UK now appears to have higher charges than Ireland for most profiles - this is mainly due to the fact that

Vodafone (UK) and BT Cellnet's post-pay tariffs are generally more expensive than Orange and One2one's.

The pattern of results by profile, is similar to that shown in the comparison of the average of two best deals available – i.e. for post-pay consumers, Irish consumers do relatively better on profile 2 (visit one weekend a month) and UK consumers do relatively better on profile 3 (business trip once a month).

Table 4.3: Price index for International Roaming charges for Irish and UK consumers using a pre-pay tariff - average of "early entrant" offers.

Description	Profile 1	Profile 2	Profile 3	Profile 4	Average
	2 week holiday	Visit one weekend a month	Business trip once a month	Daily commuter across border	
Ireland	117	107	109	117	113
UK	100	100	100	100	100

February 2002 prices

Table 4.4: Price index for International Roaming charges for Irish and UK consumers using a post-pay tariff - average of "early entrant" offers.

Description	Profile 1	Profile 2	Profile 3	Profile 4	Average
	2 week holiday	Visit one weekend a month	Business trip once a month	Daily commuter across border	
Ireland	82	54	122	82	85
UK	100	100	100	100	100

February 2002 prices

4.1.3 Summary:

Overall, no clear picture emerges of the relative position of UK versus Ireland prices. Relative prices depend on the particular operator used in each country, and on the particular calling pattern.

Annex A: Detailed analysis of the cost for Irish consumers roaming in the UK

This Annex examines the

- Potential international roaming cost savings for an Irish consumer roaming in the UK
- Variations on these cost savings when usage changes

Profile 1: Irish customer taking a two week holiday in the UK

For this profile the assumed mobile phone usage pattern is:

- Makes 15 minutes of off-peak calls back to Ireland
- Makes 3 minutes of off-peak calls to fixed lines in the UK
- Receives 6 minutes of off-peak calls while roaming

Overall cost for profile 1 consumer

The overall cost for the profile 1 consumer is shown in Table A1 and has been calculated using operator tariff data that was current as of February 2002, as outlined in Annex D.

Table A1: Overall Cost for Profile 1 consumer

UK Network	Vodafone (Irl)			Digifone			Meteor		
	Pre-pay	Post-pay	ITS	Pre-pay	Post-pay	ITS	Pre-pay	Post-pay	ITS
Vodafone (UK)	€32.37	€13.08	€16.26	€41.82	€12.36	€19.98	€12.90	€12.90	NA
Orange		€16.08	€31.38		€15.21	€22.83	€15.87	€15.87	
Cellnet		€15.69			€14.97	€16.74	€15.60	€15.60	
One2One		€14.82			€9.57	€17.19	€15.18	€15.18	

Table A1 shows that the cost of mobile roaming can vary significantly depending upon:

- The home network operator of the Irish consumer
- The type of contract/service that the consumer has with its network operator (pre-pay, post-pay or post-pay International Traveller Service)
- The network that the consumer selects when roaming in the UK.

Potential consumer savings by changing contract/service with operator

Table A2 shows the potential international roaming savings that a profile 1 consumer can make by changing their contract /service with their network operator from:

- a) a pre-pay service to a post-pay contract and;
- b) from a post-pay contract to an ITS.

Apart from the costs of international roaming, there are further considerations which consumers should take into account when deciding upon the appropriate contract/service. These have been outlined in section 2 of this report.

Table A2: Potential consumer savings by changing contract/service with network operator – Profile 1

Option	Network Operator	Potential Saving (€)	Potential Saving (%)
Change from pre-pay to post pay	Vodafone (Irl)	€16.29 to €19.29	50% to 60%
	Digifone	€26.61 to €32.25	64% to 77%
	Meteor	*	-
Moving from post pay To an ITS	Vodafone (Irl)	No Saving	-
	Digifone	No Saving	-
	Meteor	NA	-

** For Meteor pre-pay customers there is no difference between the pre-pay and post-pay tariffs.*

Table A2 indicates that a profile 1 consumer on Vodafone (Irl) or Digifone can make a significant saving (between 50% and 77%) on their UK roaming costs by switching from a pre-pay service to a post-pay contract.

With regards to moving from a post-pay contract to an ITS, a profile 1 consumer would not make any savings on their UK roaming costs.

Potential savings by manually selecting the least expensive UK network

Table A3 shows the potential savings that can be made by manually selecting the least expensive UK network for a profile 1 consumer on a post-pay contract (plus a pre-pay service for Meteor).

Table A3: Potential savings by manually selecting the least expensive UK network - Profile 1

Irish Operator	Cost on most Expensive UK Network for Profile 1	Cost on least Expensive UK Network for Profile 1	Potential Savings	
			€	%
Vodafone (Irl) <i>Post-pay only</i>	€16.08	€13.08	€3.00	19%
Digifone <i>Post-pay only</i>	€15.21	€9.57	€5.64	37%
Meteor <i>Pre & Post-pay</i>	€15.87	€12.90	€2.97	19%

Table A3 indicates that a profile 1 consumer can potentially save between 19% and 37% on their international roaming costs by manually selecting the least expensive UK network.

Swapping the Irish SIM card for a UK SIM card

In order to assess the potential savings for this option the overall costs for a profile 1 consumer (see table A1) have been averaged across the 4 UK networks as shown in table A4.

Table A4: Average costs for a profile 1 consumer

	Pre-pay (€ for trip)	Post-pay (€ for trip)	Post-pay ITS (€ for trip)
Vodafone (Irl)	32.4	14.9	27.6
Digifone	41.8	13.0	19.2
Meteor	14.9	14.9	N/a

The monthly costs for using a UK SIM and the potential savings are shown in table A5. The write off period for the fixed costs of SIM swapping for a profile 1 consumer is 1 month, and the cost of SIM swapping is added to the network usage charges.

Table A5: Monthly costs using UK SIM - and savings compared to Irish roaming tariffs (€)

	UK SIM (currently on pre-pay)* (€ for trip)	UK SIM (currently on post-pay)* (€ for trip)	Pre-pay roaming vs. UK SIM (difference in €)	Post-pay standard roaming vs. UK SIM (difference in €)	Post-pay ITS roaming vs. UK SIM (difference in €)
Vodafone (Irl)	39.5	39.5			
Digifone	39.5	39.5	2		
Meteor	39.5	39.5			

Differences are only shown where there is a potential cost saving

**includes the cost of SIM unlocking where applicable plus purchase of UK SIM card, plus cost of calls on cheapest UK network*

Table A5 shows that using a UK SIM card is generally not cost effective for this once-off holiday.

Other Cost reduction options

The profile 1 consumer should bear in mind that costs can be reduced by using the following options which have been outlined in section 2 of this report:

- Bar or divert incoming calls
- Use text messages (SMS) instead of voice calls – receiving an SMS in the UK is free of charge
- Use a payphone if cheaper for outgoing calls

Changing the profile 1 usage pattern

The results have also been run using two variations on profile 1:

- keeping the same level of overall usage, but most calls are now made within the UK (i.e. making calls to book accommodation etc, rather than keeping in touch back home); and
- keeping the calling pattern the same, but doubling the usage.

Calling within the UK in general is either the same or considerably cheaper than calling back to Ireland. The overall advice remains the same irrespective of the detailed calling pattern.

Doubling the usage doubles the costs for the pre-pay and post-pay standard tariffs. Doubling the usage also makes buying a UK SIM look more worthwhile.

Profile 2: UK citizen returning home to UK for a weekend once a month

For this profile the assumed mobile phone usage pattern is:

- Makes 1.5 minutes of off-peak calls back to Ireland
- Makes 7.5 minutes of off-peak calls to fixed lines in the UK
- Receives 3 minutes of off-peak calls while roaming

Overall Cost for profile 2 Consumer

The overall cost for a profile 2 consumer is shown in Table A6 and has been calculated using operator tariff data that was current as of February 2002, as outlined in Annex D

Table A6: Overall Cost for profile 2 consumer

	Vodafone (Irl)			Digifone			Meteor		
UK Network	Pre-pay	Post-pay	ITS	Pre-pay	Post-pay	ITS	Pre-pay	Post-pay	ITS
Vodafone (UK)	€19.97	€4.38	€11.94	€20.91	€4.02	€11.64	€4.29	€4.29	NA
Orange		€4.32	€19.50		€3.95	€11.57	€4.16	€4.16	
Cellnet		€4.43			€4.07	€12.18	€4.20	€4.20	
One2One		€4.05			€3.17	€10.79	€3.87	€3.87	

Table A6 shows that the cost of mobile roaming can vary significantly depending upon:

- The home network operator of the Irish consumer
- The type of contract/service that the consumer has with its network operator (pre-pay, post-pay or post-pay International Traveller Service)
- The network that the consumer selects when roaming in the UK.

Potential consumer savings by changing contract/service with operator

Table A7 shows the potential international roaming savings that a profile 2 consumer can make by changing their contract/service with their network operator from:

- a) a pre-pay service to a post-pay contract and;
- b) from a post-pay contract to an ITS.

Apart from the costs of international roaming, there are further considerations which consumers should take into account when deciding upon the appropriate contract/service. These have been outlined in section 2 of this report.

Table A7: Potential consumer savings by changing contract/service with network operator – Profile 2

Option	Network	Potential Saving (€)	% Saving
Change from pre to post pay	Vodafone (Irl)	€15.54 to €15.92	78% to 80%
	Digifone	€16.84 to €17.74	81% to 85%
	Meteor	*	-
Moving from post pay To an ITS	Vodafone (Irl)	No Saving	-
	Digifone	No Saving	-
	Meteor	NA	-

* For Meteor pre-pay customers there is no difference between the pre-pay and post-pay tariffs.

Table A7 indicates that a profile 2 consumer on Vodafone (Irl) or Digifone can make significant savings (between 78% and 85%) by connecting from a pre-pay service to a post-pay contract.

With regards to moving from a post-pay contract to an ITS, a profile 2 consumer would not make any savings on their UK roaming costs.

Potential savings by manually selecting the least expensive UK network

Table A8 shows the potential savings that can be made by manually selecting the least expensive UK network for a profile 2 consumer on a post-pay contract (plus a pre-pay service for Meteor).

Table A8: Potential savings by manually selecting the least expensive UK network – Profile 2

Irish Operator	Cost on most Expensive UK Network for Profile 2	Cost on least Expensive UK Network for Profile 2	Potential Savings	
			€	%
Vodafone (Irl) <i>Post-pay only</i>	€4.43	€4.05	€0.38	9%
Digifone <i>Post-pay only</i>	€4.07	€3.17	€0.90	22%
Meteor <i>Pre & Post-pay</i>	€4.29	€3.87	€0.42	10%

Table A8 indicates that a profile 2 consumer can potentially save between 9% and 22% on their international roaming costs by manually selecting the least expensive UK network.

Swapping the Irish SIM card for a UK SIM card

In order to assess the potential savings for this option, the overall costs for a profile 2 consumer (see table A6) have been averaged across the 4 UK networks as shown in table A9.

Table A9: Average costs for a profile 2 consumer

	Pre-pay (€ per month)	Post-pay (€ per month)	Post-pay ITS (€ per month)
Vodafone (Irl)	20.0	4.3	17.6
Digifone	20.9	3.8	11.5
Meteor	4.1	4.1	N/a

The monthly costs for using a UK SIM and the potential savings are shown in table A10. The write off period for the fixed costs of SIM swapping for a profile 2 consumer is 12 months, and the average monthly cost over a year is taken, i.e. the cost of SIM swapping is spread over 12 months.

Table A10: Monthly costs using UK SIM - and savings compared to Irish roaming tariffs (€)

	UK SIM (currently on pre-pay)* (€ per month)	UK SIM (currently on post-pay)* (€ per month)	Pre-pay roaming vs. UK SIM (difference in €)	Post-pay standard roaming vs. UK SIM (difference in €)	Post-pay ITS roaming vs. UK SIM (difference in €)
Vodafone (Irl)	4.7	4.7	15		12.9
Digifone	4.7	4.7	16		6.8
Meteor	4.7	4.7			

Differences are only shown where there is a potential cost saving

**includes the cost of SIM unlocking plus purchase of UK SIM card, spread over a year, plus cost of calls on cheapest UK network*

Table A10 shows that the cost of using a UK SIM is less than the cost of pre-paid roaming tariffs. A saving of €15 on a Vodafone (Irl) pre-pay service represents approximately a 75% saving while a €16 on a Digifone pre-pay service represents approximately a 77% saving. It should be noted that costs of using a UK SIM card depends critically on the choice of UK network as the least expensive UK network is used for the calculations of the UK SIM card costs in Table A10.

In considering a UK SIM it should be borne in mind that

- it will cost people in Ireland more to call the UK SIM than the original Irish SIM
- the cost saving needs to be considered in the context of loss of convenience, i.e. a different phone number for the UK SIM.

Other Cost reduction options

The profile 2 consumer should bear in mind that costs can be reduced by using the following options which have been outlined in section 2 of this report.

- Bar or divert incoming calls
- Use text messages (SMS) instead of voice calls – receiving an SMS in the UK is free of charge
- Use a payphone if cheaper for outgoing calls

Changing the profile 2 usage pattern

The results have also been run for profile 2 by keeping the calling pattern the same, but doubling the usage.

Doubling the usage increases the potential savings from using a UK SIM. An ITS is still not cost-effective option.

Profile 3: Irish business consumer visiting the UK once a month

For this profile the assumed mobile phone usage pattern is:

- Makes 17 minutes of peak calls back to Ireland
- 3 minutes of peak calls to fixed lines in the UK
- Also receives 12 min of peak calls while roaming

Overall cost for profile 3 consumer

The overall cost for a profile 3 consumer is shown in Table A11 and has been calculated using operator tariff data that was current as of February 2002, as outlined in Annex D.

Table A11: Overall Cost for profile 3 consumer

UK Network	Vodafone (Irl)			Digifone			Meteor		
	Pre-pay	Post-pay	ITS	Pre-pay	Post-pay	ITS	Pre-pay	Post-pay	ITS
Vodafone (UK)	€42.53	€23.17	€19.14	€53.24	€21.53	€29.15	€31.40	€31.40	NA
Orange		€29.93			€28.29	€35.91	€27.28	€27.28	
Cellnet		€31.58	€35.94		€29.97	€19.78	€29.55	€29.55	
One2One		€29.44			€14.71	€22.23	€27.40	€27.40	

Table A11 shows that the cost of mobile roaming can vary significantly depending upon:

- The home network operator of the Irish consumer
- The type of contract/service that the consumer has with its network operator (pre-pay, post-pay or post-pay International Traveller Service)
- The network that the consumer selects when roaming in the UK.

Potential consumer savings by changing contract/service with operator

Table A12 below shows the potential international roaming savings that a profile 3 consumer can make by changing their contract/service with their network operator from:

- a) a pre-pay service to a post-pay contract and;
- b) from a post-pay contract to an ITS. .

Apart from the costs of international roaming, there are further considerations which consumers should take into account when deciding upon the appropriate contract/service. These have been outlined in section 2 of this report.

Table A12: Potential consumer savings by changing contract with network operator – Profile 3

Option	Network	Potential Saving (€)	Potential Saving (%)
Change from pre to post pay	Vodafone (Irl)	€10.95 to €19.36	26% to 46%
	Digifone	€23.27 to €38.53	44% to 72%
	Meteor	*	-
Moving from post pay To an ITS	Vodafone (Irl)	€4.03 to €12.44	17% to 39%
	Digifone♦	Up to €10.19	Up to 34%
	Meteor	NA	-

* For Meteor pre-pay customers there is no difference between the pre-pay and post-pay tariffs.

♦ For a profile 3 post-pay consumer with Digifone one UK network was still cheaper on standard post-pay than on the ITS option.

Table A12 indicates that a profile 3 consumer on Vodafone (Irl) or Digifone can make significant savings (between 26% and 72%) by connecting from a pre-pay service to a post-pay contract.

With regards to moving from a post-pay contract to an ITS contract, a profile 3 post-pay consumer can save up to 39%.

Potential savings by manually selecting the least expensive UK network

Table A13 shows the potential savings that can be made by manually selecting the least expensive UK network for a profile 3 consumer on a post-pay contract (plus a pre-pay service for Meteor).

Table A13: Potential savings by manually selecting the least expensive UK network – Profile 3

Irish Operator	Cost on most Expensive UK Network for Profile 3	Cost on least Expensive UK Network for Profile 3	Potential Savings	
			€	%
Vodafone (Irl) <i>Post-pay only</i>	€31.58	€23.17	€8.41	27%
Digifone <i>Post-pay only</i>	€29.97	€14.71	€15.26	51%
Meteor <i>Pre & Post-pay</i>	€31.40	€27.28	€4.12	13%

Table A13 indicates that a profile 3 consumer can potentially save between 13% and 51% on their international roaming costs by manually selecting the least expensive UK network.

Swapping the Irish SIM card for a UK SIM card

In order to assess the potential savings for this option, the overall costs for a profile 3 consumer (see table A11) have been averaged across the 4 UK networks as shown in table A14.

Table A14: Average costs for a profile 3 consumer

	Pre-pay (€ per month)	Post-pay (€ per month)	Post-pay ITS (€ per month)
Vodafone (Irl)	42.5	28.5	31.7
Digifone	53.2	23.6	26.8
Meteor	28.9	28.9	N/a

The monthly costs for using a UK SIM and the potential savings are shown in table A15. The write off period for the fixed costs of SIM swapping for a profile 3 consumer is 12 months, and the average monthly cost over a year is taken, i.e. the cost of SIM swapping is spread over 12 months.

Table A10: Monthly costs using UK SIM - and savings compared to Irish roaming tariffs (€)

	UK SIM (currently on pre-pay)* (€ per month)	UK SIM (currently on post-pay)* (€ per month)	Pre-pay roaming vs. UK SIM (difference in €)	Post-pay standard roaming vs. UK SIM (difference in €)	Post-pay ITS roaming vs. UK SIM (difference in €)
Vodafone (Irl)	7.8	7.8	35	21	24
Digifone	7.8	7.8	45	16	19
Meteor	7.8	7.8	21	21	

Differences are only shown where there is a potential cost saving

**includes the cost of SIM unlocking plus purchase of UK SIM card, spread over a year, plus cost of calls on cheapest UK network*

Table A15 shows that there are potential savings for both Irish pre-pay and post-pay profile 3 consumers by using a UK SIM Card.

A Profile 3 consumer on an Irish pre-pay tariff can save between 71% and 85% of their international roaming costs by switching to a UK SIM card, while a post-pay consumer can save between 47% and 75% of their international roaming costs by using an UK SIM card.

It should be noted that costs of using a UK SIM card depends critically on the choice of UK network as the least expensive UK network is used for the calculations of the UK SIM card costs in Table A15.

In considering a UK SIM it should be borne in mind that

- it will cost people in Ireland more to call the UK SIM than the original Irish SIM
- the cost saving needs to be considered in the context of loss of convenience, i.e. a different phone number for the UK SIM.

Other Cost reduction options

The profile 3 consumer should bear in mind that costs can be reduced by using the following options which have been outlined in section 2 of this report.

- Bar or divert incoming calls
- Use text messages (SMS) instead of voice calls – receiving an SMS in the UK is free of charge
- Use a payphone if cheaper for outgoing calls

Changing the profile 3 usage pattern

The results have also been run for profile 3 by keeping the calling pattern the same, but doubling the usage.

Doubling the usage increases the level of saving that can be made by using a UK SIM and increases the cost effectiveness on an ITS option. Even when usage is halved, there are still some savings to be made from using a UK SIM.

Profile 4: Irish resident working in Northern Ireland and commuting

For this profile the assumed mobile phone usage pattern is:

- Makes 15 minutes of calls back to Ireland
- 3 minutes of calls to fixed lines in the UK
- Also receives 6 minutes of calls while roaming

Overall cost for profile 4 consumer

The overall cost for a profile 4 consumer is shown in Table A16 and has been calculated using operator tariff data that was current as of February 2002, as outlined in Annex D.

Table A16: Overall Cost for Profile 4 consumer

UK Network	Vodafone (Irl)			Digifone			Meteor		
	Pre-pay	Post-pay	ITS	Pre-pay	Post-pay	ITS	Pre-pay	Post-pay	ITS
Vodafone (UK)	€32.37	€13.08	€16.26	€41.82	€12.36	€19.98	€12.90	€12.90	NA
Orange		€16.08	€31.38		€15.21	€22.83	€15.87	€15.87	
Cellnet		€15.69			€14.97	€16.74	€15.60	€15.60	
One2One		€14.82			€9.57	€17.19	€15.18	€15.18	

Table A16 shows that the cost of mobile roaming can vary significantly depending upon:

- The home network operator of the Irish consumer
- The type of contract/service that the consumer has with its network operator (pre-pay, post-pay or post-pay International Traveller Service)
- The network that the consumer selects when roaming in the UK.

Potential consumer savings by changing contract/service with operator

Table A17 shows the potential international roaming savings that a profile 4 consumer can make by changing their contract/service with their network operator from:

- a) a pre-pay service to a post-pay contract and;
- b) from a post-pay contract to an ITS.

Apart from the costs of international roaming, there are further considerations which consumers should take into account when deciding upon the appropriate contract. These have been outlined in section 2 of this report.

Table A17: Potential consumer savings by changing contract with network operator – Profile 4

Option	Network Operator	Potential Saving (€)	Potential Saving (%)
Change from pre-pay to post pay	Vodafone (Irl)	€16.29 to €19.29	50% to 60%
	Digifone	€26.61 to €32.25	64% to 77%
	Meteor	*	-
Moving from post pay to an ITS	Vodafone (Irl)	No Saving	-
	Digifone	No Saving	-
	Meteor	NA	-

** For Meteor pre-pay customers there is no difference between the pre-pay and post-pay tariffs.*

Table A17 indicates that a profile 4 consumer on Vodafone (Irl) or Digifone can make a significant saving (between 50% and 77%) on their UK roaming costs by switching from a pre-pay service to a post-pay contract.

With regards to moving from a post-pay contract to an ITS contract, a profile 4 consumer would not make any significant savings on their UK roaming costs.

Potential savings by manually selecting the least expensive UK network

Table A18 shows the potential savings that can be made by manually selecting the least expensive UK network for a profile 4 consumer on a post-pay contract (plus a pre-pay service for Meteor).

Table A18: Potential savings by manually selecting the least expensive UK network - Profile 4

Irish Operator	Cost on most Expensive UK Network for Profile 4	Cost on least Expensive UK Network for Profile 4	Potential Savings	
			€	%
Vodafone (Irl) <i>Post-pay only</i>	€16.08	€13.08	€3.00	19%
Digifone <i>Post-pay only</i>	€15.21	€9.57	€5.64	37%
Meteor <i>Pre & Post-pay</i>	€15.87	€12.90	€2.97	19%

Table A18 indicates that a profile 4 consumer can potentially save between 19% and 37% on their international roaming costs by manually selecting the least expensive UK network.

Swapping the Irish SIM card for a UK SIM card

In order to assess the potential savings for this option the overall costs for a profile 4 consumer (see table A16) have been averaged across the 4 UK networks as shown in table A19.

Table A19: Average costs for a profile 4 consumer

	Pre-pay (€ for trip)	Post-pay (€ for trip)	Post-pay ITS (€ for trip)
Vodafone (Irl)	32.4	14.9	27.6
Digifone	41.8	13.0	19.2
Meteor	14.9	14.9	N/a

The monthly costs for using a UK SIM and the potential savings are shown in table A5. The write off period for the fixed costs of SIM swapping for a profile 4 consumer is 12 months, and the average monthly cost over a year is taken, i.e. the cost of SIM swapping is spread over 12 months.

Table A20: Monthly costs using UK SIM - and savings compared to Irish roaming tariffs (€)

	UK SIM (currently on pre-pay)* (€ per month)	UK SIM (currently on post-pay)* (€ per month)	Pre-pay roaming vs. UK SIM (difference in €)	Post-pay standard roaming vs. UK SIM (difference in €)	Post-pay ITS roaming vs. UK SIM (difference in €)
Vodafone (Irl)	7.4	7.4	25	8	20
Digifone	7.4	7.4	34	6	12
Meteor	7.4	7.4	8	8	

Differences are only shown where there is a potential cost saving

**includes the cost of SIM unlocking plus purchase of UK SIM card, spread over a year, plus cost of calls on cheapest UK network.*

Table A20 shows that there are potential savings for both Irish pre-pay and post-pay profile 4 consumers by using a UK SIM Card.

A Profile 4 consumer on an Irish pre-pay tariff can save between 43% and 82% of their international roaming costs by switching to a UK SIM card, while a post-pay consumer can save between 23% and 54% of their international roaming costs by using an UK SIM card.

In considering a UK SIM it should be borne in mind that

- potential savings for customers buying a UK SIM do depend critically on the choice of network in the UK - the savings quoted in Table A20

apply to the least cost UK network, and costs can differ extensively between networks

- it will cost people in Ireland more to call the UK SIM than the original Irish SIM
- the cost saving needs to be considered in the context of loss of convenience, i.e. a different phone number for the UK SIM.

Other Cost reduction options

The profile 4 consumer should bear in mind that costs can be reduced by using the following options which have been outlined in section 2 of this report.

- Bar or divert incoming calls
- Use text messages (SMS) instead of voice calls – receiving an SMS in the UK is free of charge
- Use a payphone if cheaper for outgoing calls

Changing the profile 4 usage pattern

The results have also been run for profile 4 by keeping the calling pattern the same, but doubling the usage.

Doubling the usage increases the savings possible for using a UK SIM, but an ITS is still not cost effective.

Annex B: Detailed analysis of the cost for UK mobile users roaming in Ireland

Introduction

Note: This Annex is taken from chapter 3 of the Ofcom report on mobile roaming

3.1 This chapter looks at the costs for UK consumers roaming in Ireland using a variety of tariff packages, and considers least cost options for using a mobile phone in Ireland. All costs are presented in UK£ including VAT and represent a snapshot of costs as at February 2002. The results in this chapter form the basis of the advice given in Chapter 2. More detailed information on methodology used in this section is given in Annex C and a more detailed listing of the tariff data used is given in Annex D. This chapter provides:

- a summary of the services available for customers of the four UK mobile operators when travelling in Ireland;
- an overview of the roaming tariffs available from UK operators;
- an overview of the methodology used;
- details of the usage profiles used to evaluate costs; and
- details of the results obtained.

Availability of services

3.2 Prices for roaming abroad vary according to whether a consumer is on a pre-pay package or has a contract (post-pay). For post-pay consumers, there may be a further choice between a "standard" tariff (which will generally be the "default" tariff) and an "international traveller service" (ITS) package, which offers lower per minute charges but incurs a fixed monthly fee (the monthly fee may be waived for customers on some tariff schemes, and there may be additional benefits such as reduced international charges). Not all operators offer all these options. The options available as at February 2002 are summarised in table 3.1.

Table 3.1: Options Available for Roaming in Ireland (February 2002)

	standard	ITS	Pre-pay	Pre-pay SMS
BT Cellnet	Y	Y	Y	N
One2one	Y	Y	Y	N
Orange	Y	N	N	N
Vodafone	Y	Y	Y	Y

Y = yes, N = no

Overview of tariffs

3.3 Roaming tariff options will vary. Some general features are:

- There is a cost to receive calls while roaming in Ireland - but not to receive SMS;
- The price per minute of making calls may vary according to which network is used in Ireland. There are 3 main models:
 - tariff varies by visited operator;

- flat rate tariffs across all operators; or
- "partner schemes" where prices are generally flat except that there are lower charges for the partner network;
- An operator may require a deposit before roaming is enabled;
- There may be a fixed monthly charge (generally only if an ITS is chosen).

3.4 A guide to the level of charges as at Feb 2002 is given in table 3.2 (note this is intended as general guidance; any particular tariff may have prices anywhere within the range for any call type). Full details of the tariff data used in this report are given in Annex D.

Table 3.2: Tariff ranges for different call types - cost per minute (or per call) for making/receiving calls, as at February 2002

	Receive calls - per min	Calls in Ireland - per min	Calls back to UK - per min	SMS calls - per call
Pre-pay	0.75 - 1.5	0.75 - 1.49	0.69 - 0.99	0.39
Post-pay – standard	0.20 - 0.94	0.27 - 0.40	0.40 - 0.67	0.12 - 0.33
Post-pay - all	0.15 - 0.94	0.25 - 0.40	0.40 - 0.67	0.12 - 0.33

Ranges are for peak time calls and are slightly reduced for off-peak calls

Methodology

3.5 Comparisons of individual tariffs provide a general guide to roaming costs for consumers. However, in order to consider specific advice to consumers regarding the options available to them to reduce their roaming bill, it is helpful to consider a range of consumer profiles. To do this a number of visitor types are considered. For each customer type a "basket" of calls made and received is constructed and the total cost for this basket is calculated for a range of options.

3.6 An alternative to using the roaming tariff applicable to the existing package is for a UK consumer to directly use an Irish operator for their mobile calls in Ireland. There are a number of ways of doing this:

- ensuring that the mobile phone's SIM card is unlocked, and purchasing an Irish SIM card;
- renting a mobile phone while in Ireland; or
- purchasing a second mobile phone in Ireland.

This report focuses on the first of these options, i.e. purchasing an Irish SIM card.

3.7 The cost of using an Irish SIM is taken as:

- the explicit cost of unlocking the existing SIM (if this applies - see annex C for details); plus
- the cost of buying an Irish SIM in Ireland; plus
- the cost of making calls on an Irish network.

3.8 The costs of SIM (handset) unlocking and of purchasing an Irish SIM are assumed to be spread over a given period (details given as part of the profile). A list of more detailed methodological points is given in Annex C.

Profile details

3.9 The profiles considered in this report are as follows:

- Profile 1: a UK residential consumer taking a two week holiday in Ireland;
- Profile 2: an Irish citizen working/studying in the UK, returning home to Ireland for a weekend once a month;
- Profile 3: a UK business consumer visiting Ireland once a month; and
- Profile 4: a UK (Northern Ireland) resident working in Ireland, commuting daily across the border.

3.10 The details of the profiles used are given in table 3.3.

Table 3.3: Usage profiles for the four different customer types

	Profile 1	Profile 2	Profile 3	Profile 4
Description	2 week holiday	Visit home one weekend a month	Business trip once a month	Daily commuter
Customer type	Residential	Residential	Business	Residential
Current package type in UK	Pre-pay or post-pay	Pre-pay or post-pay	Most likely post-pay, (but could be pre-pay)	Pre-pay or post-pay
Time of day	Off-peak (evening and weekend)	Off-peak (weekend)	Peak	Off-peak (evening)
Calls received, min/month	6	3	12	6
Calls back home, min/month	15	1.5	17	15
Calls within Ireland, min/month	3	7.5	3	3
Write off period for fixed costs of SIM swap, months*	1	12	12	12

** For a one off holiday the full cost of SIM swapping is added to the network usage charges. For regular travellers the average monthly cost over a year is taken, i.e. the cost of SIM swapping is taken to be spread over 12 months.*

3.11 The usage levels have been informed by the market research Oftel has conducted into mobile phone usage for UK consumers at home and abroad, and by data collected from UK mobile operators for other benchmarking exercises. See Annex C for further details.

3.12 The following sections consider:

- total monthly spend on roamed calls for each of pre-pay, post-pay standard and post-pay ITS (for profile 1 this is just total holiday spend);
- as above but consider different costs for different networks; and
- total monthly spend based on using an Irish SIM.

Results Profile 1: UK customer taking a two week holiday in Ireland
Makes 18 minutes and receives 6 minutes of calls

3.13 This section considers roaming costs for a UK consumer taking a 2 week holiday in Ireland. Table 3.4 gives details of the total cost for consumers on different types of package. It is seen that:

- Pre-pay consumers pay in the range £22- £28 for this set of calls;
- The cost is significantly less for post-pay consumers who pay in the range £8 - £16 for the same set of calls;
- Using an ITS tariff is found to give savings of around £4 for BT Cellnet customers.

3.14 The more detailed results indicate that:

- For pre-pay customers using Vodafone (UK), savings can be made by choosing the Irish network carefully - choosing Vodafone (Irl) will cost £18, while either of the other networks will cost nearly £24, i.e. the most expensive network charges cost 30% more than the cheapest;
- For post-pay customers, any differences in charges according to Irish network are hard to quantify, as not only the rates but the method of billing (e.g. billing per 30 sec vs billing per sec) differ by operator. Differences in overall costs appear relatively small.
- In many cases, buying an Irish SIM card doesn't appear cost effective for a one off trip for this level of usage. Small savings (of up to £4) are possible for some post-pay customers. However, the cost saving needs to be considered in the context of loss of convenience (i.e. a different phone number for the Irish SIM) plus it will cost more for those calling the Irish SIM (additional cost approximately £1.60).

Table 3.4 - Comparing roaming costs for different options for Profile 1**A. Cost for calls made during trip (£)**

	Pre-pay (£ for trip)	Post-pay (£ for trip)	Post-pay ITS (£ for trip)
BT Cellnet	23.8	16.4	12.3
One2one	28.3	11.7	11.4
Orange	N/a	8.4	N/a
Vodafone	21.8	12.3	12.4

B. Differences in cost for different tariffs (£)

Differences	Pre-pay vs. post-pay (difference in £)	Pre-pay vs. ITS (difference in £)	ITS vs. Post-pay (difference in £)
BT Cellnet	7	11	4
One2one	17	17	0
Orange			
Vodafone	10	9	

Differences are only shown where there is a potential cost saving

C. Monthly costs using Irish SIM - and savings compared to UK roaming tariffs (£)

	Irish SIM (currently on pre-pay)* (£ for trip)	Irish SIM (currently on post-pay)* (£ for trip)	Pre-pay roaming vs. Irish SIM (difference in £)	Post-pay standard roaming vs. Irish SIM (difference in £)	Post-pay ITS roaming vs. Irish SIM (difference in £)
BT Cellnet	27.0	12.0		4.3	0.3
One2one	47.3	47.3			
Orange	35.5	35.5			
Vodafone	47.0	12.0		0.3	0.4

Differences are only shown where there is a potential cost saving

**includes the cost of SIM unlocking plus purchase of Irish SIM card, spread over a year, plus cost of calls on cheapest Irish network*

3.15 The results have also been run using two variations on this profile:

- keeping the same level of overall usage, but most calls are now made within Ireland (i.e. making calls to book accommodation etc, rather than keeping in touch back home); and
- keeping the calling pattern the same, but doubling the usage.

3.16 For several tariffs, calling within Ireland is about the same or cheaper than calling back to the UK. However, an exception to this is the BT Cellnet pre-pay tariff which has higher call charges within Ireland than back to the UK, and the overall costs for this package increase by 40% when the calling pattern is changed to be predominantly

within Ireland. In most cases the overall advice remains the same irrespective of the detailed calling pattern:

- pre-pay roaming is much more expensive than post-pay;
- there may be small savings (in one case only) to be made by changing to an ITS; and
- SIM swapping is unlikely to be cost effective for a one-off trip (though savings of around £6 were found for a BT Cellnet pre-pay customer with the predominantly within-Ireland calling pattern).

3.17 Doubling the usage, doubles the costs for the pre-pay and post-pay standard tariffs - the ITS costs increase by less than twice, and subscribing to an ITS now saves between £2 and £11. Doubling the usage also makes buying an Irish SIM look more worthwhile - this could save up to around £16 for either a pre or post-pay customer.

3.18 The potential savings for customers buying an Irish SIM do depend critically on the choice of network in Ireland - the savings quoted apply to the least cost Irish network, but costs can differ extensively between networks, particularly in relation to the cost of calls back to the UK. Also, the cost saving needs to be considered in the context of loss of convenience, i.e. a different phone number for the Irish SIM, plus it will cost more for those calling the Irish SIM .

Results for Profile 2: Irish citizen working/studying in the UK, returning home to Ireland for a weekend once a month
Makes 9 minutes and receives 3 minutes of calls per visit

3.19 This section considers the costs for an Irish citizen working/studying in the UK, who has purchased their mobile phone in the UK and who travels back home to Ireland for one weekend a month, where the majority of their calls will be made within Ireland. The results (table 3.5) show:

- Pre-pay customers pay in the range £11 - £17, significantly more than those on post-pay who pay £4 - £6. This level of difference per month (£6 - £13) may make it worthwhile for a pre-pay consumer to consider switching to a post-pay contract, although they would need to take account of other factors, such as their domestic calling pattern, in making this decision;
- For a consumer already on a post-pay tariff, an ITS doesn't help reduce costs for this level of usage/calling pattern;
- Generally the choice of Irish network won't make a big difference to overall cost - the exception being Vodafone's pre-pay tariff, where either of the non-partner networks will cost 30% more than using Vodafone (Irl).

3.20 The costs of using an Irish SIM (for the least cost Irish network for this profile) is less than using UK roaming tariffs:

- For a pre-pay customer its possible to save up to £13 by using an Irish SIM;
- For a post-pay customer, its possible to save up to £4 by using an Irish SIM.

3.21 The potential savings for customers buying an Irish SIM do depend critically on the choice of network in Ireland - the savings quoted apply to the least cost Irish network, but costs can differ extensively between networks, particularly in relation to the cost of calls back to the UK. For example, with Meteor calls to the UK cost about the same as

calls within Ireland, while for other operators calls to the UK are substantially more expensive.

- 3.22 In looking at the results in table 3.5C it should be borne in mind that it will cost people in the UK more to call the Irish SIM than the original UK SIM - the additional costs are estimated to be £0.9 - so significantly less than the potential savings. Also, the cost saving needs to be considered in the context of loss of convenience, i.e. a different phone number for the Irish SIM.

Table 3.5 - Comparing roaming costs for different options for Profile 2**A. Monthly cost for calls while visiting Ireland (£)**

	Pre-pay (£ per month)	Post-pay (£ per month)	Post-pay ITS (£ per month)
BT Cellnet	16.7	6.2	6.2
One2one	17.2	4.5	5.6
Orange	N/a	4.2	N/a
Vodafone	10.9	4.7	6.0

B. Differences in cost for different tariffs (£)

Differences	Pre-pay vs. post-pay (difference in £)	Pre-pay vs. ITS (difference in £)	ITS vs. Post-pay (difference in £)
BT Cellnet	10	11	0
One2one	13	12	
Orange			
Vodafone	6	5	

Differences are only shown where there is a potential cost saving

C. Monthly costs using Irish SIM - and savings compared to UK roaming tariffs (£)

	Irish SIM (currently on pre-pay)* (£ per month)	Irish SIM (currently on post-pay)* (£ per month)	Pre-pay roaming vs. Irish SIM (difference in £)	Post-pay standard roaming vs. Irish SIM (difference in £)	Post-pay ITS roaming vs. Irish SIM (difference in £)
BT Cellnet	3.5	2.3	13.2	3.9	3.9
One2one	5.2	5.2	12.0		0.4
Orange	4.2	4.2			
Vodafone	5.2	2.3	5.7	2.5	3.8

Differences are only shown where there is a potential cost saving

**includes the cost of SIM unlocking plus purchase of Irish SIM card, spread over a year, plus cost of calls on cheapest Irish network*

3.23 Doubling the usage may make an ITS worthwhile (a saving of £3 in one case) and increases the potential savings from using an Irish SIM.

Results for Profile 3: UK business consumer visiting Ireland once a month
Makes 20 minutes and receives 12 minutes of calls per visit

3.24 This section considers the costs for a business person making regular trips to Ireland (once a month). The results (table 3.6) show:

- For a pre-pay customer these calls will cost in the range £29 - £39, compared to £10 - £23 for a post-pay customer. With potential savings in the range £10 - £20 a month, a pre-pay customer may find it worthwhile to switch to a post-pay contract, although they would need to take account of other factors, such as their domestic calling pattern, in making this decision;
- For a consumer already on a post-pay contract, savings in the range £2 - £9 can be made by switching to an ITS tariff (i.e. up to 38%). The savings could be higher: an ITS may be offered free on some packages (particularly the higher usage domestic packages); an ITS may provide additional benefits (lower roaming charges when visiting countries other than Ireland and possibly lower international call charges);
- Generally the choice of Irish network won't make a big difference to overall cost - the exception being Vodafone's pre-pay tariff, where either of the non-partner networks will cost 30% more than using Vodafone (Irl).

3.25 The costs of using an Irish SIM (for the least cost Irish network for this profile) may be less than using UK roaming tariffs:

- For a pre-pay customer using an Irish SIM may save up to up to £32; and
- For a post-pay customer, using an Irish SIM may save up to £18 compared to a standard roaming tariff and up to £12 compared to an ITS.

3.26 The potential savings for customers buying an Irish SIM do depend critically on the choice of network in Ireland - the savings quoted apply to the least cost Irish network, but costs can differ extensively between networks, particularly in relation to the cost of calls back to the UK. For example, with Meteor, calls to the UK cost about the same as calls within Ireland, while for other operators, calls to the UK are substantially more expensive.

3.27 In looking at the results in table 3.6C it should be borne in mind that it will cost people in the UK more to call the Irish SIM than the original UK SIM - the additional costs are estimated to be £2.4 - so significantly less than the potential savings. Also, the cost saving needs to be considered in the context of loss of convenience, i.e. a different phone number for the Irish SIM.

Table 3.6 - Comparing roaming costs for different options for Profile 3**A. Monthly cost for calls while visiting Ireland (£)**

	Pre-pay (£ per month)	Post-pay (£ per month)	Post-pay ITS (£ per month)
BT Cellnet	34.1	23.3	14.4
One2one	39.3	19.3	15.2
Orange	N/a	10.4	N/a
Vodafone	29.1	18.8	16.5

B. Differences in cost for different tariffs (£)

Differences	Pre-pay vs. post-pay (difference in £)	Pre-pay vs. ITS (difference in £)	ITS vs. Post-pay (difference in £)
BT Cellnet	11	20	9
One2one	20	24	4
Orange			
Vodafone	10	13	2

Differences are only shown where there is a potential cost saving

C. Monthly costs using Irish SIM - and savings compared to UK roaming tariffs (£)

	Irish SIM (currently on pre-pay)* (£ per month)	Irish SIM (currently on post-pay)* (£ per month)	Pre-pay roaming vs. Irish SIM (difference in £)	Post-pay standard roaming vs. Irish SIM (difference in £)	Post-pay ITS roaming vs. Irish SIM (difference in £)
BT Cellnet	6.0	4.8	28.1	18.5	9.6
One2one	7.7	7.7	31.6	11.6	7.5
Orange	6.7	6.7		3.7	
Vodafone	7.7	4.8	21.4	14.0	11.7

Differences are only shown where there is a potential cost saving

**includes the cost of SIM unlocking plus purchase of Irish SIM card, spread over a year, plus cost of calls on cheapest Irish network*

3.28 Even when usage is halved, there are still some savings to be made from using an ITS or an Irish SIM. Doubling the usage increases the level of saving that can be made by using these options.

Results for Profile 4: UK (Northern Ireland) resident working in Ireland, commuting daily across the border.
Makes 18 minutes and receives 6 minutes of calls per month

- 3.29 This section considers the costs for a consumer resident in Northern Ireland who commutes daily across the border. The results (table 3.7) show:
- The costs are in the range £22 - £28 for a pre-pay customer - compared to £8 - £16 for a post-pay consumer; the difference in cost is in the range £7 - £17 and could make it worthwhile for a consumer to switch from pre to post-pay, although other factors, such as domestic calling pattern, would need to be taken into account in making this decision;
 - For a consumer already on a post-pay contract, an ITS may help reduce costs (a saving of £4 was found with BT Cellnet);
 - Generally the choice of Irish network wont make a big difference to overall cost - the exception being Vodafone's pre-pay tariff, where either of the non-partner networks will cost 30% more than using Vodafone (Irl).
- 3.30 The costs of using an Irish SIM (for the least cost Irish network for this profile) is less than using UK roaming tariffs:
- For a pre-pay customer it is possible to save up to £21 by using an Irish SIM;
 - For a post-pay customer, it is possible to save up to £12 by using an Irish SIM.
- 3.31 The potential savings for customers buying an Irish SIM do depend critically on the choice of network in Ireland - the savings quoted apply to the least cost Irish network, but costs can differ extensively between networks, particularly in relation to the cost of calls back to the UK. For example, with Meteor calls to the UK cost about the same as calls within Ireland (while for other operators, calls to the UK are substantially more expensive) and this has a big effect.
- 3.32 In looking at the results in table 3.7C it should be borne in mind that it will cost people in the UK more to call the Irish SIM than the original UK SIM - the additional costs are estimated to be £1.40 - so significantly less than the potential savings. Also, the cost saving needs to be considered in the context of loss of convenience, i.e. a different phone number for the Irish SIM.

Table 3.7 - Comparing roaming costs for different options for Profile 4**A. Monthly cost for calls (£)**

	Pre-pay (£ per month)	Post-pay (£ per month)	Post-pay ITS (£ per month)
BT Cellnet	23.8	16.4	12.3
One2one	28.3	11.7	11.4
Orange	N/a	8.4	N/a
Vodafone	21.8	12.3	12.4

B. Differences in cost for different tariffs (£)

Differences	Pre-pay vs. post-pay (difference in £)	Pre-pay vs. ITS (difference in £)	ITS vs. Post-pay (difference in £)
BT Cellnet	7	11	4
One2one	17	17	0
Orange			
Vodafone	10	9	

Differences are only shown where there is a potential cost saving

C. Monthly costs using Irish SIM - and savings compared to UK roaming tariffs (£)

	Irish SIM (currently on pre-pay)* (£ per month)	Irish SIM (currently on post-pay)* (£ per month)	Pre-pay roaming vs. Irish SIM (difference in £)	Post-pay standard roaming vs. Irish SIM (difference in £)	Post-pay ITS roaming vs. Irish SIM (difference in £)
BT Cellnet	5.6	4.4	18.2	12.0	8.0
One2one	7.3	7.3	21.0	4.4	4.1
Orange	6.3	6.3		2.1	
Vodafone	7.3	4.4	14.6	8.0	8.1

Differences are only shown where there is a potential cost saving

**includes the cost of SIM unlocking plus purchase of Irish SIM card, spread over a year, plus cost of calls on cheapest Irish network*

3.33 Doubling the usage makes using an ITS service more cost effective, and increases the savings possible by using an Irish SIM.

Annex C: Details of Methodology

This annex has 2 sections.

- Assumptions that have been made in the modelling work.
- Additional background on the profiles used.

Detailed assumptions

In order to carry out the comparisons a number of assumptions (in addition to the profile information) need to be made. The assumptions made include:

SIM (handset) unlocking

- see table C.1 for a list of the current position regarding SIM unlocking
- Where a mobile phone is SIM locked for a given period (e.g. for the first year of a post-pay contract), it is assumed that the consumer has had the phone for longer than this period, i.e. that the phone can be unlocked.
- Where for a pre-pay phone, SIM unlocking is only available for consumers prepared to top up their account by a given amount, it is assumed that the consumer is willing to do this and no explicit cost is attached to this (on the basis that the call credit will in fact be used).

SIM purchase

- The cost of using a UK SIM is taken as the explicit cost of unlocking the existing SIM plus the cost of buying a UK SIM in the UK; plus the cost of making calls on a UK network.
- Where a SIM card is bought in Ireland/the UK, it is assumed that the included call credit can be used (i.e. before it expires) and the value of this is deducted from the cost of the SIM card.
- Where a UK SIM card is used, it is assumed that this is bought in the UK - these may also be available in Ireland (possibly at a different price).
- Where a UK SIM card is used, this reduces (to zero) the cost of receiving calls. However, the person making the call will incur higher costs in making a call to an UK mobile, rather than to an Irish mobile. These higher costs are commented on in the text (they reduce the overall level of savings available, if the person roaming is concerned about the costs to those calling as well as his/her own direct costs);
- Where a UK SIM is used it is assumed that this is used with a pre-pay package in the visited country - the cheapest available pre-pay package for the calling profile used is taken. Pre-pay packages that include a fixed element (e.g. a minimum charge per day) are not included in the analysis as

these are not likely to be appropriate for a consumer with intermittent usage.

- For some domestic pre-pay tariffs in the UK there is a "declining tariff", i.e. the per minute rate is lower once a certain number of minutes have been used in the day. For these tariffs, the highest per-minute charge is taken to apply to all calls (i.e. assumptions for costs of using a foreign SIM may be overestimated in these cases).

International Traveller Services (ITS)

- Where there is a monthly charge for an ITS this is included in the monthly charge, however, for some packages this is included at no cost, and/or there may be other additional benefits with the service (e.g. cheaper International call charges) - this means that the cost for an ITS is overestimated for some consumers (and hence the potential savings of switching to an ITS are understated while the potential savings by e.g. using a UK SIM are overstated).
- Where the availability of a particular ITS depends on the level of domestic use /the domestic package used, this is not explicitly taken into account;

Other

- Where a consumer has to pay some sum in advance in order to use a roaming service, this is not taken into account (on the basis that the money is recoverable);
- No account is taken of the precise details of how calls are charged (e.g. whether charging is per second or per minute);
- The precise details of peak/off-peak times have not been taken into account. For some tariffs the off-peak rate may not start till relatively late in the evening and for some tariffs part of Saturday may be at the peak rate - however, it is assumed that consumers adjust their calling pattern to use the lower off-peak rates;
- It is assumed that calls made are to fixed lines and for the main results a simple average is taken over the costs of using the different visited networks;
- Where charges are incurred in the visited country, these are converted to the home country's currency at the market exchange rate as at Feb 2002.

Table C.1 Costs /restrictions on SIM (handset) unlocking

UK	pre-pay	post-pay	notes
Vodafone	£35	£0	Only pre-pay locked
Orange	£23.5	£23.5	Post-pay contract customers in 1st year must pay any subscriptions remaining for 1st 12 months
Cellnet	£15	£0	12 month lock in period - some WAP contract phones also have a charge
One2one	£35.25	£35.25	Lock in: pre-pay 3 months, post-pay contract 1 month
Ireland	pre-pay	post-pay	notes
Vodafone	Need to top up to value €127	€0	Post-pay customers are contracted for a minimum of 12 months
Digifone	Need to top up to value €127	€0	Post-pay customers are contracted for a minimum of 12 months
Meteor	Need to top up to value €130	€0	Post-pay customers are contracted for a minimum of 12 months

Background on profiles used

Profile 3 for business use is based on the mobile roaming profile developed by OfTel as part of a regular programme of benchmarking work (see: International benchmarking study of dial-up PSTN Internet access, mobile and fixed line services (June 2001) <http://www.oftel.gov.uk/publications/research/2001/benc0601.htm>).

The assumption in this study is that the entire roaming usage is for travelling in Ireland/the UK. The usage appears consistent with a businessman spending a few days a month in Ireland/UK and needing to keep in touch with the home office. As sensitivities, the results are also considered if usage is halved and doubled, representing businesses who spend less/more time in the UK.

No detailed information on residential roaming usage is available. For the residential profiles, domestic usage is taken as a starting point for considering reasonable usage volumes for roaming.

OfTel's market research shows that on average (i.e. 3rd quintile of usage) a UK consumer makes around 30 minutes of mobile calls a month at home (equivalent to a monthly spend of around £12). However, the research also shows that those consumers who spend more than average on their calls at home are also more likely to make calls while abroad. For example, of consumers spending up to £10 at home, only 7% use their mobile abroad sometimes or frequently; this compares to 32% of consumers spending over £31 who use their mobile abroad. It is assumed, therefore, that residential roaming consumers have a higher than average domestic usage of 70 minutes a month (usage for consumers in quintile 4). The relationship assumed between domestic use and use while abroad is explained in table C.2.

Table C.2: Assumptions about usage for residential roaming profiles.

	Starting usage level (min/month)	Adjust for usage in visited country	Total usage
Profile 1: 2 week holiday	70	50% for 2 week period, 50% for reduced usage when on holiday	18 min
Profile 2: visit home one weekend a month	70	50% of usage at weekends; 25% of weekends "back home"	9 min
Profile 4: commutes daily	70	50% of usage on weekdays; of which 50% on each side of border	18 min

Further assumptions are:

- the ratio of calls from mobile to calls to mobile = 3:1 (as for domestic use);
- for Profile 1 calls are split 50:50 evening and weekend (as for domestic use for a "social" user);
- for Profile 2 calls are all at the weekend;
- for Profile 4 calls are all during the evening;
- for profiles 1,3 and 4 the majority of calls are "back to the home country" (a ratio of 5:1 back home vs within visited country is used; and
- for profile 2, the majority of calls are within visited country (a ratio 1:5 within Ireland vs back home is used).

Variations on these assumptions have also been considered:

- profile 1 assumes the holiday visitor uses their phone mainly to keep in touch at home - the ratio of calls home to calls with visited country can be switched to consider usage for someone who makes most calls within the visited country (e.g. ringing ahead to book accommodation);
- for all of profiles 1 - 4 the results are also considered when usage is doubled (the level of costs/potential savings will be more important for those who use their phone a lot).

Annex D: Irish and UK operator tariff data

D.1 The following tables list the tariff data used in this report.

Table D.1: Tariffs available from UK operators as at February 2002 for UK consumers roaming in Ireland

Operator	tariff type	Tariff option	Roaming network	monthly cost	cost of receiving call, £/min			cost of within country call, £/min			cost of calling home, £/min			SMS costs, £/message		
					Peak	Even'g	W'knd	Peak	Even'g	W'knd	Peak	Even'g	W'knd	receive	within c'ntry	Send home
Vodafone	post	standard	Vodafone		0.69	0.69	0.69	0.31	0.21	0.21	0.55	0.49	0.49	0	0.31	0.31
Vodafone	post	standard	Digifone		0.69	0.69	0.69	0.28	0.28	0.28	0.65	0.50	0.50	0	0.21	0.21
Vodafone	post	standard	Meteor		0.69	0.69	0.69	0.27	0.27	0.27	0.49	0.49	0.49	0	0.33	0.33
Vodafone	post	ITS	Vodafone	2.50	0.29	0.29	0.29	0.31	0.21	0.21	0.55	0.49	0.49	0	0.31	0.31
Vodafone	post	ITS	Digifone	2.50	0.29	0.29	0.29	0.28	0.28	0.28	0.65	0.50	0.50	0	0.21	0.21
Vodafone	post	ITS	Meteor	2.50	0.29	0.29	0.29	0.27	0.27	0.27	0.49	0.49	0.49	0	0.33	0.33
Vodafone	pre		Vodafone		0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0	0.39	0.39
Vodafone	pre		Digifone		0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0	0.39	0.39
Vodafone	pre		Meteor		0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0	0.39	0.39
Orange	post	standard	Vodafone		0.2	0.2	0.2	0.4	0.4	0.4	0.4	0.4	0.4	0	0.19	0.19
Orange	post	standard	Digifone		0.2	0.2	0.2	0.4	0.4	0.4	0.4	0.4	0.4	0	0.28	0.28
Orange	post	standard	Meteor		0.2	0.2	0.2	0.4	0.4	0.4	0.4	0.4	0.4	0	0.26	0.26
Orange	pre				n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
BTCellnet	post	standard	All		0.94	0.94	0.94	0.32	0.32	0.32	0.65	0.65	0.65	0	0.12	0.12
BTCellnet	post	ITS	All	2.99	0.18	0.18	0.18	0.25	0.25	0.25	0.5	0.5	0.5	0	0.12	0.12
BTCellnet	pre		All		1.49	1.49	1.49	1.49	1.49	1.49	0.69	0.69	0.69	0	n/a	n/a
One2one	post	standard	Vodafone		0.7	0.59	0.59	0.32	0.22	0.22	0.58	0.45	0.45	0	0.44	0.28
One2one	post	standard	Digifone		0.71	0.59	0.59	0.29	0.29	0.29	0.67	0.51	0.51	0	0.43	0.27
One2one	post	standard	Meteor		0.71	0.59	0.59	0.28	0.28	0.28	0.51	0.51	0.51	0	0.43	0.27
One2one	post	ITS	Vodafone	2.5	0.15	0.12	0.12	0.32	0.22	0.22	0.58	0.45	0.45	0	0.44	0.28
One2one	post	ITS	Digifone	2.5	0.15	0.12	0.12	0.29	0.29	0.29	0.67	0.51	0.51	0	0.43	0.27
One2one	post	ITS	Meteor	2.5	0.15	0.12	0.12	0.28	0.28	0.28	0.51	0.51	0.51	0	0.43	0.27
One2one	pre		All		1.5	1.5	1.5	1.49	1.49	1.49	0.99	0.99	0.99	0	n/a	n/a

Table D.2: Tariffs available from Irish operators as at February 2002 for Irish consumers roaming in the UK

Operator	tariff type	Tariff option	Roaming network	Monthly cost	cost of receiving call, €/min			cost of within country call, €/min			cost of calling home, € per min			SMS costs, €/message		
					Peak	Even'g	W'knd	Peak	Even'g	W'knd	Peak	Even'g	W'knd	receive	within c'ntry	Send home
Vodafone	post	Standard	Vodafone		0.68	0.53	0.53	0.64	0.25	0.25	0.77	0.61	0.61	0	0.41	0.41
Vodafone	post	Standard	Orange		0.68	0.53	0.53	0.4	0.2	0.2	1.21	0.82	0.82	0	0.26	0.26
Vodafone	post	standard	Cellnet		0.68	0.53	0.53	0.44	0.22	0.22	1.30	0.79	0.79	0	0.34	0.34
Vodafone	post	standard	one2one		0.68	0.53	0.53	0.18	0.18	0.18	1.22	0.74	0.74	0	0.26	0.26
Vodafone	post	ITS	Vodafone	7.62	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0	0.41	0.41
Vodafone	post	ITS	Other UK networks	7.62	0.36	0.36	0.36	1.2	1.2	1.2	1.2	1.2	1.2	0	0.26	0.26
Vodafone	pre		All		1.27	1.27	1.27	1.90	1.90	1.90	1.27	1.27	1.27	0	n/a	n/a
Digifone	post	standard	Vodafone		0.56	0.41	0.41	0.63	0.25	0.25	0.76	0.61	0.61	0	0.25	0.25
Digifone	post	standard	Orange		0.56	0.41	0.41	0.39	0.2	0.2	1.2	0.81	0.81	0	0.11	0.11
Digifone	post	standard	BTCellnet		0.56	0.41	0.41	0.44	0.22	0.22	1.29	0.79	0.79	0	0.33	0.33
Digifone	post	standard	One2one		0.56	0.41	0.41	0.17	0.17	0.17	0.44	0.44	0.44	n/a	n/a	n/a
Digifone	post	ITS	BTCellnet	7.62	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0	0.33	0.33
Digifone	post	ITS	Other networks - see standard rates													
Digifone	pre		All		1.27	1.27	1.27	1.9	1.9	1.9	1.9	1.9	1.9	0	0.44	0.44
Meteor	post	standard	Vodafone		0.44	0.44	0.44	0.66	0.27	0.27	1.42	0.63	0.63	0	0.09	0.09
Meteor	post	standard	Orange		0.44	0.44	0.44	0.42	0.21	0.21	1.22	0.84	0.84	0	0.09	0.09
Meteor	post	standard	BTCellnet		0.44	0.44	0.44	0.44	0.22	0.22	1.35	0.82	0.82	0	0.09	0.09
Meteor	post	standard	One2one		0.44	0.44	0.44	0.29	0.18	0.18	1.25	0.8	0.8	0	0.09	0.09
Meteor	post	ITS	All		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Meteor	pre		Vodafone		0.44	0.44	0.44	0.66	0.27	0.27	1.42	0.63	0.63	0	0.09	0.09
Meteor	pre		Orange		0.44	0.44	0.44	0.42	0.21	0.21	1.22	0.84	0.84	0	0.09	0.09
Meteor	pre		BTCellnet		0.44	0.44	0.44	0.44	0.22	0.22	1.35	0.82	0.82	0	0.09	0.09
Meteor	pre		One2one		0.44	0.44	0.44	0.29	0.18	0.18	1.25	0.8	0.8	0	0.09	0.09

Table D.3: Pre-pay tariffs available from UK operators as at February 2002 (used to model SIM Swap costs for Irish consumers visiting the UK)

Operator	Tariff	Cost of call within UK, £/min			Cost of call back to Ireland, £/min			min size of voucher, £	expiry of voucher for making calls
		peak	evening	weekend	peak	evening	weekend		
Vodafone*	Pay as you talk firststep	0.4	0.1	0.1	0.74025	0.74025	0.74025	5	None
Vodafone	Pay as you talk smartstep**	0.25	0.25	0.25	0.74025	0.74025	0.74025	5	None
Vodafone	Pay as you talk all calls	0.35	0.1	0.1	0.74025	0.376	0.376	5	None
Orange	Just Talk Plus**	0.25	0.25	0.25	0.15	0.15	0.15	5	None
BTCellnet***	Pay and Go original	0.35	0.1	0.02	1.5	1.5	1.5	10	None
BTCellnet	Pay and Go talkalot**	0.25	0.25	0.25	1.5	1.5	1.5	10	None
One2one	Pay and Go**	0.3	0.3	0.3	1.5	1.5	1.5	10	None

*Some Vodafone pre-pay tariffs with service credit charge/min daily spend have not been included

**On all these tariffs the price per minute for calls within the UK declines after an initial period of minutes per day

*** BTCellnet also offer a tariff with reduced International call rates and a fixed monthly fee.

Table D.4: Pre-pay tariffs available from Irish operators as at February 2002 (used to model SIM Swap costs for UK consumers visiting Ireland)

Operator	Tariff	Cost of call within Ireland, €/min			Cost of call back to UK, €/min			min size of voucher, €	expiry of voucher for making calls
		peak	evening	weekend	Peak	evening	weekend		
Vodafone	Ready to go standard	0.63	0.25	0.13	1.02	1.02	1.02	10.00	1
Vodafone	Work and Leisure	0.44	0.44	0.19	1.02	1.02	1.02	10.00	1
Digifone	Early Bird pack	0.19	0.63	0.13	1.27	1.27	1.27	10.00	None
Digifone	Night Owl pack	0.63	0.19	0.13	1.27	1.27	1.27	10.00	None
Meteor	Bonus Saver	0.44	0.44	0.44	0.32	0.32	0.32	6.35	6

Table D.5: Cost of SIM card available from UK operators as at February 2002 (used to model SIM Swap costs for Irish consumers visiting the UK)

	Cost of SIM, £	Included call value, £
Vodafone	24.99	5
Orange	25.00	5
BTCellnet	24.99	5
One2one	24.99	5

Table D.6: Cost of SIM card available from Irish operators as at February 2002 (used to model SIM Swap costs for UK consumers visiting Ireland)

	Cost of SIM, €	Included call value, €
Vodafone	19.05	6.35
Digifone	25.00	15
Meteor	19.03	10