



Electronic Communications Committee (ECC)
within the European Conference of Postal and Telecommunications Administrations (CEPT)

**CONSUMER ABUSES AND FRAUD ISSUES
RELATING TO HIGH TARIFF SERVICES**

Lisbon, September 2006

EXECUTIVE SUMMARY

This report provides a collection of information on consumer abuses and fraud issues relating to high tariff services such as premium rate services and calls involving certain international numbers.

The report explains how interconnection increases the possibility of abuse and fraud and makes tariff transparency more complex and difficult to achieve.

The consumer problems covered include unexpectedly high bills:

- Lack of tariff awareness
- Unawareness of the options for call barring or problems with the solution for call barring
- Unauthorised calls
- Calls made by computer viruses
- Confusion over the use of subscriptions services

The fraud issues include:

- Billing cycle abuse
- Autodialling viruses
- Viruses in mobiles

Information is given on how the abuses such as "short stopping" are practiced for international calls, often without the knowledge of the country whose country code is being used.

The report concludes with a list of measures that are used in some countries to reduce the scope for abuse and fraud as well as some new ideas that could be used.

The report does not cover the issues of cross border access to premium rate services that are offered legitimately to subscribers in other countries as such arrangements are not in existence at present. The problems and solutions identified in this report should, however, be considered in the development of any framework for such services.

The intention is to update this report as new information becomes available and anyone with relevant information is invited to contact:

The support officer for the Numbering Naming and Addressing Working Group

ERO

Tel: +45 33 89 63 00

Email: ero@ero.dk

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Consumer Abuses and Fraud Issues relating to High Tariff Services

1 INTRODUCTION

The purpose of this report is to provide a reasonably comprehensive list and explanation of the main consumer and fraud issues that have been experienced in relation to high tariff services, especially those on premium rate numbers, and also of the main consumer and operator protection measures that have been adopted in some countries. High tariff services include international country codes where these have been used as charge band indicators but not necessarily an indication of the likely call termination location. These numbers are used as premium rate and revenue share numbers, but are not declared as such.

The publication of this information should help regulators to take informed decisions about any necessary protection measures that are needed in their countries.

This report focuses primarily on voice services and SMS, but premium rate services are also growing around MMS and mobile portals and it is hoped to cover these services in a future version of the report.

The intention is to update this report from time to time when new issues emerge and therefore the ECC would welcome inputs and information to enhance the report.

2 ABBREVIATIONS

- 3GPP Third generation Partnership Project (for mobile standards)
- GPRS General Packet Radio Service
- MMS Multimedia Message Service
- PRSP Premium Rate Service Provider
- SMS Short Message Service

3 REFERENCE MODEL

Figure 1 shows a basic reference model that will be used for this report for the case of premium rate services, but as is pointed out, not all abuses are limited to these services. The model highlights the role of interconnection, however it should be noted that in many countries interconnection applies in practice only for voice calls and there is a rapidly growing market for premium rate SMS and MMS and also for premium rate mobile portals where there is no or little interconnection to date. There are normally fewer problems of abuse where there is no interconnection because the operator concerned is in a better position to control abuses.

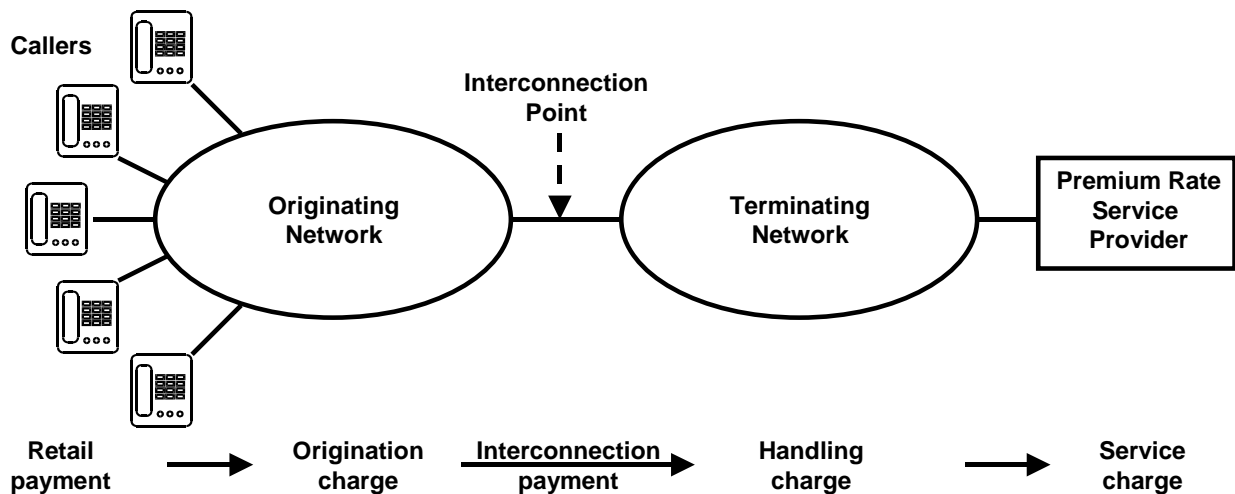


Figure 1 shows a basic reference model

Callers pay the originating network for the retail price of the call. The originating network pays normally the majority of the money it receives to the terminating network who passes on a share to the PRSP.

Many callers use the network of an incumbent for their calls and the origination charge of the incumbent is commonly regulated to be either:

- Cost based with a mark-up for profits
- Determined on a revenue sharing basis

The terminating network passes part of the revenue that it receives to the PRSP.

Calls may be charged on a duration basis or a flat rate, or a combination of the two.

4 PREMIUM RATE SERVICE TYPES

Premium rate services are used with both normal calls and SMS messages.

Common applications for calls are:

- Recorded Information
- Live professional advice (eg legal advice, health advice)
- Tele-voting
- Complaint lines¹ and customer service / advice lines (eg software support)
- Games and competitions
- Services that may be needed by less informed and vulnerable people, eg loans to people with a poor credit record, where the aim is to take the revenue from the call rather than to provide the service
- Live chat rooms
- One-one adult chats
- Access to Phone-ins run in conjunction with TV programmes
- Donations to charity, especially with celebrities taking the live calls
- The first stage of two stage dialling for low price international calls
- Dial-up Internet access

SMS services are commonly used for:

- Information services such as sports results and weather
- Voting, often in conjunction with TV programmes
- Games and competitions
- Donations to charity
- Ring tones
- Payments for use of local WiFi access

Information services and ring tones may be either a single use service or an on-going subscription service.

With the introduction of live video capabilities on some third generation mobile phones, access to live adult video material is becoming a new application and experiencing fairly rapid growth.

Premium rate services are also growing on MMS and on mobile portals. Mobile portals are collections information and product services (eg ringtones, wallpaper), many of which are charged through the phone bill, that are organised as a "mini web page" and are accessed via GPRS or 3GPP data or SMS. Some operators use third party providers of services and products and share profits with them. In some cases the charges may not be sufficiently clear to the user.

¹ A well know consumer electronics company used premium rate lines for complaints

5 CONSUMER PROBLEMS

The main consumer problem is that the subscriber receives an unexpectedly high bill. There are six possible causes:

- The subscriber was unaware of the tariff that applied to the call
- The length of the call is artificially by putting the caller on hold, or deceptively extended, eg by answering so that charging starts yet applying a dial tone sound from the distant end
- The subscriber was unaware that they can have premium rate calls barred or thought that a call bar applied when it did not
- The call was made by another individual and was not authorised by the subscriber (the caller may have been unaware of the tariff or may have deliberately stolen the call)
- The call was made automatically by a computer activated, for example, by a virus without the subscriber being aware of what was happening
- The subscriber is not aware of the nature of the service, for example they think that they are buying one-off service and yet they are initiating a subscription service with repeated charging that will continue until they unsubscribe.

In all these cases, the problem can continue for the whole of a billing period or longer before being detected. Unless there are special measures, the problem is unlikely to be detected by the subscriber before the next bill arrives. Detection can take even longer if the subscriber pays by direct debit and does not check their bills carefully. The problem is aggravated when the nature of the services is addictive, eg some forms of competition.

Billing practice varies widely from operator to operator; some use monthly billing cycles and other use up to three months. In some cases there is a delay of several weeks while the bill is being prepared.

Pre-payment systems provide some protection, as with unexpectedly high usage the payment would be exhausted unexpectedly quickly and so trigger an investigation provided the service provider does not allow negative credit to accumulate without the subscriber's knowledge. Some service providers are allowing negative credit of at least 20 Euros such that when the subscriber tops up their credit with say a 10 Euro voucher the voucher is used up immediately.

Many operators provide itemised billing and this help uses to investigate the cause.

The unexpected bills lead to complaints that can be hard to resolve. Some complainants claim that there has been a genuine billing error and that the calls were never made, and it can be difficult or impossible to determine objectively who made a given call or if the call was actually made from the account claimed.

A more minor problem is misdialling, ie dialling a premium rate number by accident when meaning to dial a normal rate number. This can be expensive if the number triggers a one-off payment.

The power of premium rate debt over consumers is greatly increased if the originating operator is entitled to suspend the service because of non-payment of the bill and if there is no alternative access provider. In this case the threat of service suspension is used to recover a debt for money that is due eventually to the PRSP. If instead of leveraging the power of the originating operator, the PRSP had to use the normal legal processes for debt recovery, it would not be cost effective to recover the smaller debts and the PRSP would not be willing to go to Court in cases where it had not complied with all relevant legislation.

6 CONTENT ISSUES

Content is regulated or subject to restrictions in some countries. Examples of illegal content or illegal activities that have used premium rate services are:

- Gambling
- Prostitution
- Extreme pornography
- Abuse of chat rooms to "groom" minors by adults who often give false descriptions of themselves and try to set up meetings with minors

These abuses have led to various controls such as regulatory requirements for the recording of chat room conversations and live monitoring of conversations with any offenders being disconnected.

Calls can have their durations extended by the caller being kept on hold or by the live conversation being deliberately inefficient so that the call charge is maximised. In some dating services, callers have been asked during the call to dial additional numbers, which are also premium rate numbers, and all these numbers have been held open for the remainder of the call using a teleconferencing facility, thereby multiplying the call charge several times.

Content issues are not considered further in this report.

7 ABUSES BY PREMIUM RATE SERVICE PROVIDERS

In this section and the following a distinction is made between abuse (taking advantage of the consumer) and fraud (illegal activity). This distinction is not always clear and some activities involve both.

The following is a list of the main abuses detected so far:

- Inadequate warning of the tariff. This may be a failure to provide warning required by regulation, or guidelines or licence conditions. Mobile operators are starting to use premium rate SMS to pay for temporary use of WiFi Internet access and may state only that "WiFi roaming charges apply". This is inadequate information as such charges may be very high compared to the charge for a user with a local subscription.
- Call back messages. Messages may be left requesting a call back. The number to call back may be given and a tariff warning omitted, or with mobiles the user may call back without seeing the number being called. This approach is taken frequently for announcing that someone has won a prize or a holiday and they must call a certain number quickly to claim their prize. The number is a premium rate number.
- Services without any normal rate complaint line. The premium rate line may be used for the sale of services or products and that are faulty and the caller may have no way to make a complaint and seek a refund or the only way to do so is to call another premium rate number. Problems have been detected with the sale of ring tones where there is an incompatibility between the ring tone and the handset and further downloads are required and charged for without the user having any means to demand a refund.
- Unreasonable extension of the length of calls. The PRSB may organise the answering of the call so that the call duration is maximised by slow answering, putting callers on hold and making conversations unnecessarily long.
- Lack of clarity about subscription services where the subscriber is likely to think that they are buying one-off service and yet they are initiating a subscription service with repeated charging that will continue until they unsubscribe and they may find it difficult to find how to unsubscribe.
- Changing the rate of a call without sufficient in-call warnings. This problem may occur where the billing system is able to support changes of rate during a call, which might be triggered by an option selected by the caller but without sufficient warning about the new rate.
- Call initiation via directory services that by-pass the normal protections such as call barring. This problem could arise where there are directory services that include information about premium rate numbers and allow calls to be connected without the caller re-dialling.
- Access via other high tariff numbers; such as numbers in the mobile range, instead of numbers dedicated to premium rate services.

8 FRAUDULENT ABUSES ON PREMIUM RATE NUMBERS

8.1 Billing cycle abuse

Premium rate services have attracted a number of frauds that exploit the interconnection of premium rate services. The basic scheme is that a fraudster contracts with a terminating operator to provide a premium rate service and then separately subscribes for several lines with an originating operator, normally not the same operator as the terminating operator. The subscriber lines are often at rented premises.

The fraudster then runs autodiallers on the subscriber lines and calls the premium rate numbers continually running up very large bills. The interconnection payments are made monthly and the fraudulent amounts are small in the overall

interconnection bills between the operators. The terminating operator makes monthly payments to the PRSP. The subscriber's bills may however be 3-monthly and the fraudster continues until a bill arrives or starts to be investigated for non-payment. The fraudster then closes the service and disappears leaving the bills unpaid at the expense of the originating operator who probably has no redress against the terminating operator.

Assuming a call charge of 1 Euro per minute, a line used for 24 hours a day for a month will run up a bill of 43 200 Euros. Over three months this is 129 600 Euros.

8.2 Autodialing viruses

This is a variant of the billing cycle abuse that uses the computers of existing subscribers as the callers. The fraudster contracts for a premium rate service and then distributes viruses or other types of programmes through email or web sites that become resident in the computers of legitimate subscribers. If the subscribers have a modem connected to their computer for Internet access, the programmes control the modem to dial the premium rate numbers. Some programmes work during or immediately after an Internet dial-up access session. This runs up high bills that are the responsibility of legitimate subscribers and may not be detected for up to three months. After a period, the PRSP will disappear and repeat the fraud from a new location with a different number and a different identity.

8.3 Viruses in affecting mobiles

This appears to be a new and growing area of fraud but little information is currently available.

Receipt of the viruses may be associated with text or voicemail messages announcing that you have won a prize or there is a special offer available if you call back a special number or just press '9' to reply and confirm details.

9 THE SIGNIFICANCE OF INTERCONNECTION

Interconnection, which is an essential part of liberalisation and competition at least for normal calls, is the cause of much of the difficulty in controlling abuses. Generous interconnection terms can make the provision of premium rate services highly attractive to new entrants, who do not need a substantial network to provide such services. The established operators are likely to be serving most of the callers and have the problems of handling the complaints about unexpected bills and abuses whereas the terminating operator receives the revenue and avoids the problems. Furthermore the originating operator does not have any opportunity for introducing controls over the PRSP such as withholding payments for longer than the retail billing cycle or disconnecting the PRSP as soon as an abuse is discovered. The net result is a situation where no party has overall responsibility and the originating operator has not retained enough money to cover any refunds to callers. There are two approaches to address these problems:

- To empower the originating operator to handle complaints and give refunds and to withhold payments to the terminating operator to cover possible repayments or to have arrangements for obtaining refunds from the terminating operator
- To arrange for independent complaint handling and refunds from the PRSPs.

The first approach is simpler and requires less involvement of the regulator, whereas the second is more complex and difficult to implement effectively.

Theoretically the benefit of interconnection and in some cases number portability is that it promotes competition in the hosting of PRSPs. Without it, the providers of PRSPs would need to establish separate connections to each originating operator with a substantial number of subscribers. This would increase their costs, but not too much in those countries where there are only a small number of operators, and in practice PRSPs do need multiple separate connections in many countries. This approach, however, could work against new entrants, as PRSPs might not bother to establish connection with new entrant originating operators who would then not be able to offer access to their services.

The situation is made much more complex where the 'premium rate' number is in fact an international country code which cannot be readily identified as being 'premium rate'.

10 ABUSE OF INTERNATIONAL NUMBERS

International country codes as per ITU-T Recommendation E.164 are intended as addresses to indicate the required destination of a telephone call. When these codes are used in the accounting and settlement procedures then the accounting rate should be that required for the cost efficient termination of the call in the country designated by the country code. Such codes are not designed to be used as charging band indicators for calls that are terminated short of the designated country. Furthermore separate provision is made within ITU-T recommendations for designating International Premium Rate and Shared Cost Service

The use of international country codes usually puts such calls outside any national regulatory provisions on premium rate and revenue share call arrangements.

10.1 Abuses inside the country concerned

Some countries, typically very small or developing countries still have high accounting rates for incoming calls creating a strong incentive for attracting incoming calls. Typically these countries may not have competition in the fixed network. PRSPs arrange to provide services from these countries with the services aimed at callers in distant developed countries and advertise the services in those countries. They negotiate revenue sharing with the local incumbent and/or the government. The agreement may include the fact that calls to specified number ranges are terminated in a location other than that of the country code country. This creates a pseudo premium rate service that avoids the regulatory controls and consumer protection measures that apply in the developed countries where the numbers are advertised.

The services offered by the PRSP are typically those that are most likely to be accessed by unauthorised calls, especially:

- calls made by younger staff on employers' phones
- calls made by teenagers without parental consent
- calls made by auto-diallers.

There is little that can be done to control these abuses from the consumer end. In some cases operators have considered:

- handling all calls to the country concerned manually, is passing direct dialled calls to an attendant/operator
- blocking all calls to a country until the abuse is stopped locally.

Manual intervention is probably the most cost effective and efficient procedure. Obtaining proof of fraud to the degree required by the law is both costly and time consuming. Removing the offending destination from the IDD list reduces the level of loss and puts the burden on others to police the problem and clean up the situation, however this is an extreme measure and a last resort, but the threat of such action is believed to have prompted actions in the destination country to reduce abuse.

10.2 Abuses not involving the country concerned

In this case abuses are made by originating or more commonly transit networks without the consent or even the knowledge of the administration whose code is abused.

The PRSP arranges with the operator concerned that the operator will route calls to a number, say +xy abcdefgh, to the PRSP and that they will share the revenue. This is done without the involvement of any entity in the country "+xy". Normally "abcdefgh" is a number that is not allocated in "+xy". The PRSP then advertises the service and number in countries from which calls are likely to pass through the transit operator, or in the case of an originating operator in the home country. When the calls are made they are charged at the rate for calls to "+xy" but are routed directly to the PRSP without entering the country "+xy". This is known as "short-stopping" the call.

In some cases when traffic levels are available it is possible to see that the total traffic to a very small country significantly exceeds the level that could be terminated within the country.

This abuse can be carried out with any international code that has a high tariff or high accounting rate. Numbers used by organisations such as Inmarsat and other satellite operators have been abused in this way.

Again there is little that can be done to control these abuses from the consumer end, but in some cases operators have considered manual handling of all calls or blocking all calls to a country. Whilst this does not correct the situation it does remove most of the consumer related problems. Complaints from country "+xy" at governmental level tend to escalate the need for the problem to be solved.

10.3 Trading in International minutes and termination

Trading minutes creates the situation where the actual termination of 'international' calls is not obvious. Minutes are traded to an interconnect broker who arranges the onward transmission of the call. Where a country code has been compromised such that valid calls that mature in the specified country are mixed with others that are short stopped for international premium rate services it becomes very difficult to identify the destination of the short stopped calls. However, all calls are paid for as if they all reach the correct destination. The interconnect broker is unlikely to admit to the actual destination of the short stopped calls and usually falls back on the 'commercial confidentiality' defence. In the circumstance where the short stopped calls are involved in some sort of fraud, it is often difficult to exert any legal pressure, since generally the interconnect broker is in a different country.

11 REGULATORY FRAMEWORKS

The regulatory framework in a country can determine the scope for abuse and the ease or difficulty with which it can be addressed. The nature of the problem is that parties who are determined to gain revenue from abuse will take advantage of any loopholes or weaknesses in the framework. The following outlines some of these issues.

- Many countries have measures for consumer protection but they may be formulated to apply only in respect of some numbers, eg premium rate numbers, and may not apply to all the numbers that may be used in abuses, eg mobile numbers, short codes and some international numbers.
- Some countries have appointed special regulators for the control of calls to high tariff numbers, eg ICSTIS in UK and RegTel in Ireland. The scope of these appointments may inadvertently be limited and prevent these regulators taking action in new areas of abuse.
- Under a system of general authorisation rather than individual licences, there may be no vetting of PRSPs and the only ex-ante control may be through the allocation of numbers but this is not permitted in the EU where the reasons for the refusal of numbers are strictly limited.
- The originating operator may not be permitted to issue refunds to callers and to deduct these refunds from payments made towards the destination of the call.
- In the case of the use of international numbers, there may be no way for an originating operator to determine whether a number is properly authorised in the country indicated by the country code, which would help to prevent abuses involving short stopping.

12 CONSUMER PROTECTION MEASURES FOR NATIONAL SERVICES

Consumer protection measures differ widely from country to country and may be a combination of:

- Legislation
- Licence conditions
- Codes of practice
- Guidelines
- Contractual conditions imposed by operators on PRSPs

The enforcement capabilities may well also vary widely and may include disconnection, fines and criminal prosecution. In some cases the fines may be "voluntary", ie not supported by legislation and not ultimately enforceable. Voluntary consumer codes and measures may work with reputable PRSPs but are ineffective with ones who are prepared to operate outside the law. Experience has shown that the money that can be made with premium rate services is sufficient to attract various criminal elements.

Legal measures and enforcement are normally applied only on a national basis and can be avoided if services are offered from one country to another. Cross border enforcement has not been developed much to date.

The following sub-sections describe the various consumer protection measures that are used in different countries and some that are new ideas. Most countries use a combination of measures.

12.1 Limitations in the types of services that may be offered

Various types of services may be prohibited.

12.2 Organisation of the numbering ranges used

Most regulators require premium rate services to use a specific numbering range so that consumers can learn to distinguish premium rate numbers and so that call barring can be applied using simple algorithms.

Different sub-ranges may be used for different types of premium rate service eg to distinguish business and entertainment services.

12.3 Price warnings

Many countries require advertisements of premium rate services to include the price and to do so with a specified form of words and/or print of at least a given size. However, such warnings are only effective in a limited number of cases as not all are advertised (in particular data services) and even when they are advertised, there is only little chance that a consumer knows or remembers the content of such advertisements when he seeks access to these services.

Price warnings and information on the number used that are provided just before access is established are more effective in this respect. There are various parties involved that may be technically capable of providing this information, including the originating operator, the terminating operator and also the content provider. Some countries require a price-warning announcement to be played without charge for audio services at the start of each premium rate call. The terminating operator usually provides the warning itself, but the terminating operator may not be aware of the exact retail price paid by the caller, which depends on the originating operator.

For data services accessed by web diallers, the possibility exists to provide tariff and number information by means of software to be installed on the end-user's PC that is able to detect outgoing calls via the analogue modem of the PC.

The responsibility for price and tariff transparency may be placed jointly on the originating operator (as this party bills for the services) and the content provider. The actual implementation may be carried out by only one of these parties.

Some countries separate the charge paid to the PRSP from the charge paid for the communications and require warnings over the charge paid to the PRSP, which can be given at the terminating end, whilst leaving the charge for the communications to be more competitive but less transparent. This gives flexibility for different communications charges between fixed and mobile operators.

12.4 Itemised billing

A requirement can be imposed for all calls to premium rate numbers to be itemised even if the caller has not subscribed to itemised billing for normal calls. This measure does not protect, however, against the first occurrences of high bills due to unawareness of the risks associated with premium rate numbers.

12.5 Call barring or opt-out

Many regulators require operators to offer to subscribers call barring to premium rate numbers. To be effective, subscribers need to know to consider whether or not to have call barring applied. Efforts such as advertising are needed to promote this awareness amongst consumers especially if new service types in the premium rate market are opened up.

Call barring can be rendered ineffective if it is required only of the operator who provides the physical access line and carrier pre-selection is used or carrier selection with a smart box to add the selection code automatically. Unless the call barring applies to all calls, the use of carrier (pre)-selection may bypass the barring. Usually the subscriber will be unaware of this weakness. Call barring needs to be provided by all operators who may be selected by the subscriber.

In the EU, the Universal Service Directive, article 10.2 requires call barring to be provided free of charge by undertakings that are subject to universal service requirements, but this does not apply to many operators who offer services by carrier selection and hence may be bypassed.

Whereas (15) of this Directive reads:

"Member States should monitor the situation of consumers with respect to their use of publicly available telephone services and in particular with respect to affordability. The affordability of telephone service is related to the information which users receive regarding telephone usage expenses as well as the relative cost of telephone usage compared to other services, and is also related to their ability to control expenditure. Affordability therefore means giving power to consumers through obligations imposed on undertakings designated as having universal service obligations. These obligations include a specified level of itemised billing, the possibility for consumers selectively to block certain calls (such as high-priced calls to premium services), the possibility for consumers to control expenditure via pre-payment means and the possibility for consumers to offset up-front connection fees. Such measures may need to be reviewed and changed in the light of market developments. Current conditions do not warrant a requirement for operators with universal service obligations to alert subscribers where a predetermined limit of expenditure is exceeded or an abnormal calling pattern occurs. Review of the relevant legislative provisions in future should consider whether there is a possible need to alert subscribers for these reasons."

12.6 Opt-in

Opt-in is where the subscriber is required to register their willingness for premium rate calls to be made from their line before such calls are enabled. This is a strong form of protection for the consumer.

12.7 Charging or duration limits of individual calls

The call charge rate, or the duration, or the maximum charge for a call may be limited. It is important for there to be a duration limit where automated systems are used by the PRSP, in case the caller fails inadvertently to clear a call and it remains active for a long period.

12.8 Pre-pay

Pre-pay provides considerable protection against high bills because the problems are detected when the pre-pay limit is reached and this likely to be much earlier than would be the case with a subscription account. Pre-pay allows a subscriber to limit their liability and also protects the operator against bad debts. A large proportion of mobile users pay by pre-pay.

It would be possible for an operator to charge all premium rate calls using pre-pay even if subscribers use a subscription for normal calls. In this case pre-pay would include opt-in.

The protection offered by pre-pay is reduced if the credit is allowed to go negative. Where negative credit is given, subscribers should be advised by SMS that the credit has become negative and what the limit of the negative credit will be.

12.9 Removal of the right of an operator to suspend service for non-payment of the calls to premium rate numbers

This protection is to remove the right of an operator to suspend service for non-payment of calls to premium rate numbers. The right could be limited to the premium element, ie exclude the basic call charge. The aim would be to break the link that enables PRSPs to leverage the consumers' need of a basic telephone service in obtaining debt recovery. This would put debt recovery for premium rate services on the same footing as ordinary consumer debts. This would have the effect of increasing publicity over high and unexpected premium rate charges.

Such a measure is referred to in the Universal Service Directive, "Whereas" 16 reads:

"Except in cases of persistent late payment or non-payment of bills, consumers should be protected from immediate disconnection from the network on the grounds of an unpaid bill and, particularly in the case of disputes over high bills for premium rate services, should continue to have access to essential telephone services pending resolution of the dispute. Member States may decide that such access may continue to be provided only if the subscriber continues to pay line rental charges."

However this protection is not required of Member States under the articles of the Directive.

A stronger requirement would be to remove the right for payment of the premium element to be enforced at all through suspension or disconnection.

12.10 Right to a refund for the first high bill

This is a protection against the first occurrence of a high bill. The subscriber is given a right to a refund unless it can be proved that the subscriber was aware that premium rate calls were being made on their account. The aim is to provide an opportunity for the subscriber to become aware of the risks and to request call barring or other protections.

This protection, however, raises the question of who should provide the refund. One regulator places this requirement on the PRSP because they are the party who has collected the main part of the revenue and who may have designed the service to attract unauthorised calls. The originating operator in contrast is the party whom the subscriber can most easily contact and complain to. Furthermore there is a risk that the PRSP will go out of business before paying refunds if there are many demands for refunds. There is also an issue of whether the refunds can be enforced legally or depend on the voluntary cooperation of the PRSP.

In order to provide more security for refunds, some regulator require PRSPs to deposit bonds of several thousand Euros before starting to offer services so that these funds can be used for refunds if needed.

12.11 Credit limits and warnings when specified levels are exceeded

Operators could be required to limit the spend on premium rate services in each billing period. This limit could be set by the regulator, the operator, or the subscriber. For example, one country requires a system where there needs to be opt-in after the bill increases by 10 Euros.

An alternative is to require the operator to notify the subscriber when a limit is reached and optionally to require specific authorisation if the limit is to be increased.

12.12 Faster billing

Some of the fraud problems arise because the operators use a longer billing period for retail services than for interconnection. The fraud risks would be reduced if the retail billing period were reduced to be no longer than the period for interconnection billing.

12.13 Traffic monitoring

Frauds such as autodiallers and billing cycle abuse generate sudden increases in traffic. Routine monitoring of traffic levels by operators should be able to detect such abuses and routine monitoring of subscriber call records could detect potentially unauthorised calls. Where operators are able to communicate with subscribers by email or automated calls or leaving messages in network based message systems, they could easily advise the subscriber of the potential problems. This approach could cause problems concerning data protection at least as far as individuals are concerned.

12.14 Delays in payments to PRSPs

This protection is aimed at reducing fraud. Originating or terminating operators would be required to delay interconnection payments or payments to PRSPs by at least one complete retail billing cycle. This would provide time for abuses to be detected before the money is passed to the PRSP. Withholding of payments by the originating operator would give them more effective control and enable them to use the money for refunds.

12.15 Registration of PRSPs and identity checks on staff at PRSPs

Registration would make it easier for the regulator to investigate complaints and for consumers to contact the PRSP themselves.

Identity checks on senior staff and directors would be aimed at reducing fraud and making it more difficult for fraudsters to repeat frauds using different companies.

12.16 Termination of premium rate calls within the country

This requirement is that all calls to premium rate numbers must be terminated in the same country as the originating network. The aim is to ensure that the PRSP is under the same regulatory and legal regime as the callers. This approach, however, may conflict with obligations within the EU to allow cross border services.

12.17 Requirements on -dialling software

This would require all dialling software used with premium rate numbers to contain a warning about the charge rate in sufficiently large print, which has to be explicitly accepted by the user, and would require registration of all such software. Operators and PRSPs would not be allowed to collect money for calls from software that did not carry an appropriate signature from the registration process. Germany for example requires certain minimum requirements for the -dialling software and registration of each individual copy of the software, which receives a unique signature, and their scheme involves opt-in through explicit acceptance by the user of the call charges. A description of the German scheme is given in Annex A.

12.18 Limiting interconnection

As explained earlier, interconnection increases the scope for abuses and the resources needed for regulation. A measure that did not allow calls to higher risk numbers to pass across interconnection points would mean that for such calls the originating and terminating operators would be the same and could carry out their own consumer protection measures. Carrier selection operators would not be allowed to carry such calls. This measure would reduce the workload for regulators in handling complaints, but it would mean that PRSPs who serve such numbers would have to establish multiple connections for call termination. In consequence it would disadvantage new entrant originating operators as they would not generate sufficient calls initially to justify a connection and so would not be able to provide access to the new services. As such the measure would restrict competition by increasing the barrier to market entry for a new operator.

12.19 Constraints on CLI presentation

A protection that would reduce abuse of mobile subscribers through automated call backs, especially on SMS, would be for the mobile operators to inhibit the presentation of any CLI that is a premium rate number, this a legitimate caller would need to leave the number within the message and so the called subscriber would be more likely to see that the number is premium rate.

12.20 Complaint organisations run by or for PRSPs

PRSPs could themselves establish and fund a common complaint-handling organisation as a system of "self regulation". This would need publicity so that subscribers would know whom to contact.

As the financial damage to individual consumers is in many cases too low for it to be worth their taking legal action, such complaint organisations would improve their position significantly. A limitation however is that such arrangements would only deal with national numbers.

It is known that in at least one European country there is strong support from the content providers for a legal requirement for PRSPs to join such an organisation.

13 CONSUMER PROTECTION MEASURES FOR ABUSES OF INTERNATIONAL NUMBERS

The consumer protection measures for abuses of international numbers are more limited because the numbers are not easily distinguished from normal numbers in other countries and therefore the originating operator is normally not in a position to apply any of the measures that they would apply for national premium rate numbers.

Generally any measure that increases the subscriber's awareness of the current level of their bill will help to prevent repeated problems for the same subscriber. Hence arrangements such as notification of unusual increases in a bill, and limits on the spend or duration of an individual call, will all help.

Note: This section does not apply to the possible introduction of cross border premium rate services, which is outside the scope of this report.

13.1 Barring of specific numbers

Operators with international connections need to be able to bar calls to specific foreign numbers where there is evidence that they are involved in abuse or fraud.

13.2 Intelligent barring of specific numbers

One incumbent fixed operator has introduced a system of intelligent traffic filtering that has proved to be highly successful against fraud that arises from auto-diallers. Whenever a call to Internet dial-up access number is terminated and an out-going international call with the nature of the call indicator set to "data" is established within 15 seconds, then the called international number is identified as a potential number for fraudulent calls and all calls to that number are blocked for a period of a month, unless the operator receives other information to the effect that the number is legitimate.

13.3 Traffic analysis

Traffic analysis should facilitate identification of calls to international numbers that are being used as pseudo premium rate numbers or are subject to short stopping. Unexpectedly high levels of traffic and sudden changes in the level of traffic are indicators of potential problems.

Where these practices occur, at least one operator is cooperating in the arrangement. Operators will normally respond to complaints once the practice is identified or if not to threats to block all their traffic. The problem is that blocking all traffic will prevent some legitimate calls being made.

13.4 Exchange of information

Operators and regulators can assist each other by exchanging information on international numbers that are used for fraudulent purposes and this information can be used in decisions to block calls to those numbers or to make complaints to the Governments or operators concerned.

Where operators do exchange such information and do engage in call blocking, it would be advisable for them to make reference to this in their contracts with subscribers.

The exchange of information may, however, be limited by privacy laws and so some caution is needed.

14 DISCUSSION AND RECOMMENDATIONS

The premium rate service market uses high price calls and SMSs as a form of micro-currency, which provides a simple payment mechanism for many services and products where the total price is relatively low. The industry is however facing the problem of abuse by a small element of PRSPs some willing to engage in criminal fraud.

For example, the UK, with a population of some 60m, has one of the most highly developed markets in terms of commercial activity and an independent regulators, ICSTIS, has been established specifically to regulate this market. Details of the market taken from the Ofcom Review of December 2004 are:

- Number of PRSPs: Estimated are 3 000 - 4 000
- Number of services: Estimated are 30 000 - 40 000
- Number of complaints per year: 60 000 to July 2004 with a peak month rate of 10 000
- Main major problems: Autodiallers (2/3 of total complaints) with complaints typically relating to charges of £50-£100 per subscriber
- Estimated level of consumer detriment from autodialler abuse: Exceeding £3m - £5m pa
- Number of fines imposed on PRSPs for breach of code of practice: 95 in the 9 months to September 2004, with 82% of the highest fines relating to overseas PRSPs and many unpaid.

Regulators can compile information only on the cases that come to their knowledge through complaints. The level of problems that do not result in explicit complaints is not known. The awareness and effectiveness of the complaints mechanism also influences the level of complaints as subscribers will tend not to complain if they do not know who to complain to or if it is too difficult and time consuming to pursue the complaint. For this reason parameters such as congestion and waiting time to reach complaint call centres need to be monitored carefully.

Most problems arise from calls from fixed networks. Mobiles have more inherent protections than fixed networks because they have typically:

- A much higher proportion of pre-pay subscribers
- Fewer computers connected via mobiles
- A much higher proportion of use by the person who is the subscriber
- Faster billing cycles for post-pay subscribers

The following types of service are least likely to create problems:

- All fixed price services, eg voting, below a certain price threshold
- Information as opposed to entertainment services

Each country needs to develop a regime of consumer protection that is effective and flexible to deal with new abuses in its own market. It is not practicable to recommend one regime against another. Each protection tends to bring with it a cost to the market or industry and therefore there is a balance to be struck when setting the level of protection.

Some of the difficulties that regulators face with premium rate services arise, perhaps, from attempting to achieve too much in terms of promoting competition separately in:

- Call origination
- Call termination
- Content service provision

whilst also ensuring adequate consumer protection and tariff transparency. It seems to be impossible to satisfy all objectives simultaneously, and achievement of adequate consumer protection probably means allowing reduced competition in some areas, for example by having the same price for calls to a given number from all originating networks.

The following are probably the most cost-effective forms of protection:

- Organisation of the numbering ranges
- Price warnings published with numbers
- Price warnings at the start of calls
- Maximum charge limits for calls
- Maximum time limits for calls
- Call barring but only if applied by the access operator and if it cannot be bypassed by carrier selection and pre-selection
- Opt-in with the access operator when the total of premium rate calls exceeds a given threshold
- Withholding of money by the originating operator to allow time for problems to be detected, or arrangements between operators for repayments to refund originating operators who give refunds to subscribers.

ANNEX A: THE GERMAN APPROVAL SCHEME FOR DIALLERS

In response to the problem of diallers spread by viruses, the German Government and regulatory authority have introduced strict controls on diallers.

Under Section 43b (5) of the German Telecommunications Act diallers may only be used when certain minimum requirements are fulfilled, and the dialler is registered with Bundesnetzagentur after the applicant has declared that the dialler conforms to the minimum requirements.

The protection given to the subscriber is they may be required to pay only for calls made by registered diallers that conform to the requirements, following Bundesnetzagentur's legal opinion and court decisions (prevailing opinion).

The minimum requirements include the following:

- The dialler is configured so that the user has to give explicit approval before download, installation/activation and connection set-up, where the explicit approval involves entering a sequence of characters and not just a mouse click.
- Each dialler may only call one premium rate number and one target URL.
- The dialler includes a tariff announcement with a size with at least 10 dpi and no smaller than the largest character size in the approval window.
- Diallers must be designed so as to prevent permanent entry of the PRS number in the default dial-up network settings of the user terminal.
- The dialler has to prevent the access to, or terminate connections to, services that are not chargeable, e.g. usual websites, or are lower priced, so that the user may not be tricked into thinking that the dialler is connected to these sites when it has re-dialled into a very expensive site.

The registration procedure is as follows:

- The applicant applies for registration of up 5000 diallers per application.
- Each dialler is identified by hash-value using the RIPEMD-160 algorithm and a version number.
- The Bundesnetzagentur checks application to see if the information is complete and correct and the signature is legally binding.
- The software is not checked. However, the Bundesnetzagentur reserves the right to request the applicant to submit samples of the dialler for which registration is requested.
- If the result is positive, the diallers are registered and the data supplied by the applicant is stored in a database and published in an easily comprehensible and appropriate form on Bundesnetzagentur's website.
- If, during a subsequent review following registration or as a result of complaints or legal proceedings, it is found that a registered dialler fails to satisfy the legal minimum requirements contrary to the written declaration, the registration is withdrawn or revoked by Bundesnetzagentur and the documentation on the website is updated accordingly. Registration is then withdrawn according to general German Administrative Law. Withdrawal is effective from the date of original registration. Diallers found to be illegal are considered to never have gained a registration and so charges cannot be enforced.
- An electronic interface is required for the registration procedure. Software for the procedure may be downloaded from the Bundesnetzagentur's website (www.bundesnetzagentur.de). The registration software provided by Bundesnetzagentur at the date of application must be used. Following installation all the data required must be entered in the input forms. It is also possible to submit multiple applications.

The Bundesnetzagentur is able to require for example:

- Disconnection of problem numbers
- Withdrawal of the number from the PRSP
- The network operator not to try to collect any charges for calls to the problem number.

The Bundesnetzagentur runs a database where the registration of diallers may be checked by entering the hash value or the premium rate number given with the dialler.