



Office of the Director of
**Telecommunications
Regulation**

**Interconnect for calls destined for Internet services
and
number translation codes**

Decision Notice D9/99

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Foreword by the Director

The Internet is for many of us, synonymous with the information society. Access to the Internet is the trigger for people – business and private users – to engage with the information society and to participate in the knowledge based world where Ireland intends to be a leading edge contributor and participant. As the telecommunications regulator, my job is to ensure that this exciting revolution is possible – that the building blocks are there and there are no barriers to the development of the information society. It is particularly important therefore that a regulatory regime is in place that allows and encourages the growth and use of Internet through choice, price and variety in services, operator and service provider.

In April 1999 I issued a consultative document on interconnect for calls destined for Internet services and number translation codes. This was the second document in a two-stage consultation process held in order to develop a robust and sustainable interconnect regime that will see the provision of Internet services flourish in Ireland.

We received an excellent response to the consultative document and I would like to thank everyone who contributed, including those ISPs who took the time to respond to our questionnaire and meet with our Internet team. I hope that this participation of ISPs will continue and indeed expand as we need and rely on the input of interested and affected parties in shaping our regulatory positions on important issues such as the Internet.

We are seeking to establish the best interconnect regime possible to enable and encourage the availability of the Internet to dial-up end users and facilitate a greater choice in terms of services offered and methods of paying for these services. The paper focuses on the effects of distributing the costs of providing Internet access services in new ways so as to benefit the end user by enabling new and innovative offerings by competing service providers. Increasing the use of the Internet by Irish people, in their business and home lives, is a key factor in ensuring Ireland's readiness for e-commerce. Low cost access for end users is very important and I believe that the achievement of such low cost access will best be stimulated by strong competition. The models set out in this decision notice are designed to provide the flexibility for operators to provide a range of access pricing ranging from zero rated call charges to zero rated subscription. Delivery of that service to the customer is, ultimately, a matter for the industry.

We are now in a position to outline the framework for interconnect for Internet calls. I know that the issues in this paper are complex and technical, and may seem far removed from the needs and goals of the end user – that is simple, low cost, high quality access to the Internet. But these are just some of the building blocks that must be in place to ensure the end user can get the service they need and want. I look forward to watching the innovation and creativity of the industry in this field because it is the players, within the framework we have set out here, which will deliver the final result.

ETAIN DOYLE

Director of Telecommunications Regulation

1 Introduction

Interconnect for access to Internet services is a complex area and, as such, provides a tremendous challenge to the industry in this crucial stage of development of the Internet in Ireland. The Office of Director of Telecommunications Regulation (“the ODTR”) realises the importance of ensuring the existence of a framework within which different services and access models can flourish.

This Decision Notice is a result of a two-stage consultation process that the Director of Telecommunications (“the Director”) held on interconnect for calls destined for Internet services.

- The first stage, 99/02 (“Interconnection services for calls destined for Internet Service Providers”), addressed the issue of access to Internet services as an interconnect product under the interconnection regime in force at that time;
- The second stage, 99/25 (“Interconnect for calls destined for Internet and number translation code services”) dealt with issues that required a longer time frame to analyse, and are of overall importance to the development of a competitive market for Internet services and the provision of access to these services in Ireland. This consultation paper proposed new interconnect arrangements.

This paper should be read in conjunction with the two previous consultation papers that set out in detail the current situation and the technical and regulatory environment in relation to interconnection for calls to the Internet. Annex B also provides some background information on the consultation.

The second consultation asked for comments on three specific proposals:

- **Proposal One** – 1891 calls to be passed over “national” interconnect links and interconnection of 1891 and other Number Translation Codes (“NTCs”) to be based on the principle of retail retention based on the average cost of conveying 1891 and NTC calls;
- **Proposal Two** – 1891 calls to be passed over “national” interconnect links and interconnection of 1891 and other NTCs to be based on the principle of retail retention based on actual (network elements used) costs incurred by conveying calls to a particular terminating operator;
- **Proposal Three** – interconnection of 1891 calls to be limited to local call areas and 1891 and to be based on the principle of retail retention based on the average cost of conveying calls within all local call areas – other NTCs to be separately regulated.

There was an excellent response to 99/25. The Director wishes to thank respondents and others who contributed. This was one of the largest consultations that the ODTR has carried out, with twelve responses to 99/25, questionnaires sent to all Irish Internet Service Providers (“ISPs”), and interviews and meetings held with a range of interested parties including Telecom Éireann, Other Licensed Operators (“OLOs”) and ISPs.

This document is structured as follows:

- Section 2 of this paper summarises the Director’s position;
- Section 3 sets out these positions in more detail and explains the rationale behind each one;
- Section 4 outlines a proposal for the establishment of an industry forum; and
- Section 5 concludes the paper and sets out the next steps, including a timetable.

In addition, there are three Annexes to the main decision paper:

- Annex A summarises the responses to 99/25;
- Annex B sets out the consultation and legislative background; and
- Annex C discusses expected revenue models.

The decisions included in this paper may be reviewed by the Director from time to time in accordance with her duty to regulate the market generally.

2 Interconnect arrangements for calls to the Internet and other NTC services – governing principles

The Director's position as set out in this paper aims to enable the industry to meet the demands of Irish Internet users and to promote the usage of this medium.

The conclusions of the Director are summarised below:

- In accordance with the principle of Open Network Provision (“ONP”) described in the Interconnection Directive and the Interconnection Regulations (as both are defined in paragraph B.2 of Annex 2), interconnection for calls destined for ISPs must be passed over national interconnect links - not limited to local call areas. Appropriate interconnect products must be offered;
- Calls using the 1891 access code (and any other Internet codes that may be introduced) and all other NTCs should have the same arrangements applied to them. It is inappropriate to distinguish between nationally interconnected non-geographic codes;
- The amount of retail revenue retained by originating operators that are designated as having Significant Market Power (“SMP”) in the fixed market should be cost based for calls to all NTC services including Internet services. This is in accordance with the principle of cost-orientation contained in the Interconnection Regulations which implies that interconnect rates should accurately reflect the cost of the interconnection services used i.e. costs will be calculated on the basis of actual network elements used to deliver a call to a particular terminating operator (Proposal Two in ODTR 99/25);
- The terminating operator adds the majority of the value to calls to NTC and Internet services and should therefore have control of the retail price;
- A new numbering scheme with associated retail price points will be developed that will facilitate a wide range of new price and revenue models for calls to the Internet, ranging from zero-priced calls to zero-priced Internet subscription;
- As Telecom Éireann is an SMP operator (having been designated as such in ODTR Decision Notice D4/98), it is required, under, inter alia, Conditions 23 and 14 of its General Telecommunications Licence respectively, to adhere to the principle of non-discrimination in the supply of services to its own business units or subsidiaries and those of competitors and to the principle of not engaging in unfair cross-subsidisation.
- The Director considers as a general principle, that wherever possible, issues between operators should be resolved through commercial negotiations and should be raised with the ODTR only when it is evident that commercial negotiations have failed to bring about a satisfactory solution.

The following sections explore these issues in more detail.

3 Rationale for new Interconnection Regime

3.1 Introduction

The Director's conclusions regarding the arrangements for interconnection of calls destined for ISPs (and other NTC services) are based on a range of inputs, including legislation, the needs of consumers, the promotion of a competitive market and the responses to the consultation.

In this section the rationale supporting the new Interconnection regime is set out. Further detail on the responses received to the consultation is available in Annex A. This section is structured to cover the following issues:

- Local vs. national interconnect for 1891 calls;
- The principle of retail retention;
- The principle of non-discrimination by SMP operator in the provision of services;
- End user prices.

3.2 National versus local interconnect for calls to the Internet

3.2.1 ODTR proposal

The Director's position as stated in consultation paper 99/02 is that calls destined for ISPs should be interconnected. In accordance with the ONP principle and the concept of "any to any" communications, any customer connected to a Public Switched Telephone Network ("PSTN") in Ireland should be able to access any customer connected to, or any service provided via, a PSTN. This includes access to Internet services. Accordingly, OLOs and Telecom Éireann were encouraged to begin commercial negotiations to agree the following interconnect services:

- Interconnection of calls originating on OLOs' networks destined for an ISP connected to the Telecom Éireann network;
- Interconnection of calls originating on Telecom Éireann's network destined for ISPs connected to OLOs' networks.

In the absence of commercial agreement on these issues, three possible options for arranging interconnection for calls destined for ISPs were proposed in Document ODTR99/25. Two of these options (Proposals One and Two) suggested that there should be no restriction on the level in the network where interconnection of 1891 calls destined for ISPs could take place. Proposal Three suggested that 1891 calls to the Internet should be collected in the local call area of the end user, while all other Internet calls could be collected over national interconnect links.

Respondents to ODTR99/25 generally agreed that calls to the Internet should be passed over interconnection links. However, not all respondents supported 'national' interconnect for calls destined for ISPs, with one respondent in favour of a proposal that calls to the Internet should be collected in the local call area of the customer only. The issues raised by respondents are addressed below.

3.2.2 Issues impacting on ISPs

Prior to the publication of 99/25, and following a request from the ODTR to make “1891” interconnect available, Telecom Éireann expressed concern that national interconnect would devalue ISP investment in national Points of Presence (“PoPs”).

This concern was noted, but the Director considered that in a sector where investment in network build and development is likely to be continuous and constantly changing, the primary concern of the ODTR was to develop a robust and sustainable regime. Preserving the value of any specific network belonging to any specific player was and is not an overriding concern.

However, it was considered important to explore a variety of issues in a public consultation, including the impact different interconnect arrangements for calls destined for ISPs would have on the ISPs themselves. In order to encourage the participation of the ISPs, and collect necessary information as part of the consultation process, the ODTR sent questionnaires to ISPs operating in Ireland and held interviews with a significant number of ISPs.

Most ISPs saw the current 1891 arrangements, which include a requirement to have a PoP in each local call area as a significant barrier to entry favouring Indigo and TINET, the ISP subsidiaries of Telecom Éireann. They considered that 1891 is a key decision variable for consumers when choosing an ISP and that any ISP unable to offer this service is at a competitive disadvantage.

3.2.3 Issues affecting OLOs

All OLOs that responded to the consultation want to see national interconnect of 1891 calls. Limiting the interconnection of 1891 calls to local areas is seen as a significant barrier to entry, requiring allegedly punitive and inefficient investments by ISPs.

The OLOs saw national interconnect of 1891 calls as essential to enable them to compete on an equal basis with Telecom Éireann. It was considered that any other arrangement would be discriminatory.

3.2.4 PSTN congestion

During the course of the second phase of the consultation one respondent raised a concern that moving Internet traffic onto the PSTN from the more efficient Frame Relay network may cause serious network congestion. This was quoted as a reason for restricting interconnect to the local call area only.

While the ODTR understands why these concerns exist, it considers that limiting the interconnection of 1891 calls to the local call area will not keep Internet traffic off the PSTN. In the absence of national interconnect for 1891 codes, operators are already launching services on other codes (during this consultation period Ocean launched an Internet service on a geographic code as has Indigo). One likely result of a decision that disallowed ‘national’ interconnect for “1891” would be the migration of Internet traffic onto the existing NTCs.

The Director believes that it is in the best interests of the industry as a whole to address the concerns regarding congestion of the PSTN due to Internet traffic and find technical solutions to manage this traffic. However, it is not an issue that can, or should, be addressed by regulatory constraints on the interconnection of number codes. In particular the Director welcomes the move by Telecom Éireann to introduce a wholesale Frame Relay product. This move clearly signals the growing importance of data traffic and should provide options for moving such traffic off the PSTN.

3.2.5 Conclusion

The Director's position is that it is not appropriate to restrict the passing of 1891 calls over national interconnect links for the following reasons:

- To be consistent with the concept of 'any-to-any' connectivity, 1891 calls should be routed across the PSTN to terminating operators without restriction;
- Restriction of interconnect to local call areas imposes a requirement on ISPs to have a PoP in each local call area to collect calls. This may represent a significant barrier to entry;
- Restricting interconnect of Internet calls to local call areas will not prevent congestion of the PSTN as Internet traffic will migrate to other non-geographic and geographic codes in the absence of 'national' interconnect for 1891 'Internet' codes.

Therefore, Telecom Éireann is required to pass 1891 calls over national interconnection links. This is consistent with proposals one and two.

In accordance with its obligations under regulation 4(8) of the Interconnection Regulations and Article 4 of the Interconnection Directive, Telecom Éireann is required to negotiate an interconnection agreement with organisations listed in Annex II of the Interconnection Directive who may request such an agreement. This requirement applies equally in relation to services using 1891 codes.

Furthermore, in accordance with regulation 8(17) of the Interconnection Regulations, Telecom Éireann is required to include, in its reference interconnection offer ("RIO"), a "... description of the interconnection offerings setting out the particular components according to market needs and all of the terms and conditions for interconnection ...". This should also include interconnection charges, in accordance with regulation 8(7) and Annex IV of the Interconnection Directive.

It is clear from the responses to this consultation that there is a market need for 1891 calls to be passed over interconnection links and this should be included in the Telecom Éireann RIO. Individual negotiations will of course be necessary, including negotiations between terminating operators and ISPs in relation to handover of traffic.

3.3 Retail revenue retention

3.3.1 ODTR proposal on cost based retail retention by originating operator

Article 7(2) of the Interconnection Directive and Regulation 8(3) of the Interconnection Regulations require that interconnection charges follow principles of transparency and cost-orientation. Any revenue retained by Telecom Éireann in providing an interconnect service must be derived from actual costs. Regulation 8(5) of the Interconnection Regulations empowers the Director to direct Telecom Éireann to justify its charges, and, where appropriate, to adjust them in order to comply with the principles in the legislation.

In consultation 99/25, the Director proposed that "The retail retention of Telecom Éireann on calls to 1891 and other NTC services should be regulated as cost of network elements involved plus relevant retail costs associated with the service."

This is based on the need for regulatory intervention given:

- the position of control that Telecom Éireann has over access lines and the end user, and therefore over call origination to the networks of OLOs, and
- the nature of the service offered, i.e. the fact that the value in the service is added by the ISP or the terminating operator, not the originating operator.

However, Internet is not the only case where calls originate and terminate on different networks and access specific services offered by the terminating operator. Most non-geographic calls to NTCs are in a similar position, e.g. Freefone, LoCall, premium rate services etc. Therefore, the Director considers that the retention of the originating operator should be based on costs for NTCs generally and the same arrangements should apply to all other NTCs.

In the consultation paper, two methods of setting the retail retention were considered – firstly by using the averaged costs of all NTCs, or secondly by using the costs of the actual network elements used to originate a call. If the latter approach is taken, the retention of Telecom Éireann will vary according to the network elements involved in delivering the call to a terminating network.

The advantage of this approach is that operators have an incentive to interconnect efficiently with Telecom Éireann and build/buy decisions are influenced by commercial incentives rather than arbitrage opportunities created by the regulatory regime. Operators with many interconnect points would collect a greater percentage of the retail revenue than those operators with fewer interconnect points (of course, depending on the geographic distribution of customers). In addition, for some services (such as Freefone, LoCall etc.) terminating operators can also bill the called party for incoming calls, depending on the cost of delivering the call to the called party.

3.3.2 Views of respondents

There were three broad views expressed on the primary issue of cost-based retention.. One OLO did not consider that dial-up access conveyance is an interconnect service. The second view, forwarded by all other OLOs, favours a cost-based regulated retention of Telecom Éireann. Views expressed in support of the concept of cost based retention on calls to all NTC services (including 1891) included:

- *“for Internet and NTC services the innovation and customer relationship is the province of the terminating operators - and as such the originating operator should receive an interconnection payment which covers its call origination costs;”*
- *“experience in the UK shows that development of the market is driven not by originating operator but rather by ISPs, content providers, and the terminating operators. Hence the originating operator should not benefit from any value add accruing to services;”*
- *“in the case of Internet dial up services the principal risk of market failure arises from Telecom Éireann’s dominance in the origination or access market on which all ISPs and OLOs depend - therefore the terms on which this origination is supplied to terminating operators should be regulated.”*

Thirdly, a view was expressed that cost based retention is appropriate for NTC services but not for 1891 services on the basis that the current retail charge for 1891 access to the Internet is essentially derived from the costs of a minimum set of retail elements. This is not considered to be a relevant point, as the measures set out in this decision notice do not in any way prevent the current call prices and subscription arrangements from existing – they simply enable new additional pricing and revenue models to be developed.

In relation to the basis for retail retention, respondents generally proposed that de-averaged costs of network elements be used, corresponding to Proposal Two in 99/25, as this provided the correct incentives in order to ensure that efficient interconnect occurs, subject to economic and technical feasibility.

3.3.3 Conclusion

The Director's position is that the retail revenue retained (on calls destined for NTC services and the Internet) by originating operators that are designated as SMP operators in the fixed telecommunications market should be cost based. The Director agrees with the views that:

- The terminating operator provides the 'value-added' service for calls to the Internet and NTCs - Telecom Éireann is merely providing an origination service that is an interconnect service (as indirect origination is an interconnect service);
- Calls to NTCs and the Internet differ fundamentally from calls to geographic destinations where the originating operator markets and is perceived by the customer to be providing the complete service;
- Telecom Éireann has SMP in the fixed telecommunications market, particularly in call origination;
- There is no fundamental difference (from a regulatory point of view) between calls to 1891 that can be passed over national interconnect links and calls to other NTCs so both these call types should be treated in the same way.
- Retail retention should be based on actual costs incurred, having regard to the justification of differences between services and/or differences between the network elements used by interconnecting parties. It is noted however that this may be technically and administratively complex to operate and the costs and benefits need to be further discussed.

In accordance with the Interconnection Regulations and Directive, Telecom Éireann must include in its RIO the charges for interconnection offerings. This applies to interconnection of calls to the Internet including 1891 calls. In accordance with regulation 8(9) of the Interconnection Regulations, the Director may direct Telecom Éireann to justify its RIO, including charges, and may direct that the offer be adjusted in certain circumstances. The Director will consider the charges included in the Telecom Éireann RIO in this context, having regard to the outcome of the Industry Forum described at section 4 of this paper and such other matters as she considers appropriate.

3.4 Non discrimination in relation to calls to the Internet

3.4.1 Telecom Éireann retail product for Internet users - 1891 access

The ODTR is committed to ensuring that the end user's best interests are served in the development of an interconnection regime for calls to the Internet. The regime set out in this decision notice is designed not to preclude any possible retail offerings in relation to Internet access, but rather to provide greater opportunity for a wider variety of retail offerings to the end user both in the short and the longer term. In particular, the long term benefits to the end user are best served by a robust competitive regime for such services. For such an environment to develop, it is essential that Telecom Éireann, as an SMP operator, acts in a fair and non-discriminatory manner.

In the context of developing an appropriate interconnection regime for calls to the Internet, a number of parties expressed concern about Telecom Éireann's position of power in the market and the possibility of abuses in certain areas. One concern was that the retail charges for 1891 access, i.e. the charge to the consumer, might be below cost. Below cost selling may in turn indicate unfair cross-subsidisation. Since Telecom Éireann as a whole is profitable, any service selling at a loss would be receiving an implicit cross-subsidy from other parts of the firm.

The ODTR has investigated Telecom Éireann's prices and costs for 1891 access and has not found evidence that charges are below the average total costs incurred by Telecom Éireann in providing the service. Local call costs and charges are being further investigated by the ODTR in the context of its review of the Price Cap on Telecom Éireann.

3.4.2 Telecom Éireann product for ISPs - frame relay backhaul

The backhaul offering which is provided by Telecom Éireann in the current 1891 environment includes rental of PoPs and conveyance over Telecom Éireann's Frame Relay network. Concern has been expressed about the provision of this service on a non-discriminatory basis to all ISPs, including Telecom Éireann's own downstream ISPs, Indigo and TINET. As with services to Internet users, services to ISPs must also be provided on a non-discriminatory basis. More particularly, Telecom Éireann must not engage in discriminatory behaviour between its own downstream retail arm and other competing ISPs. It is expected therefore that where Telecom Éireann offers a product to its own downstream ISP, in this case rental of PoPs and backhaul over its Frame Relay network, it must offer a similar product on similar terms and conditions to other ISPs who request that product.

3.4.3 Access to Telecom Éireann's frame relay backhaul by OLOs

A third concern relates to access by licensed OLO's to the frame relay network of Telecom Éireann.

It is widely reported that Frame Relay backhaul is significantly cheaper than backhaul over the PSTN for Internet traffic. However, there was disagreement in the responses regarding the ease of establishing an IP network. One OLO claims that the present practices of Telecom Éireann (e.g. the price of leased lines, pricing of local ends for data networks) lock other competitors out of IP supply. However, another view was that *"there appear few barriers to deploying Frame Relay networks (or other types of networks)."*

Respondents believed that a Frame Relay interconnect product or IP interconnect product would offer a long term solution to competitive supply of backhaul for calls to the Internet. However, because data network interconnect is uncommon, and does not lend itself to the familiar pence per minute measure used for calculating PSTN interconnect prices, it may take some time to implement. The ODTR considers that as data traffic overtakes voice, the provision of IP interconnect products will be increasingly required and encourages the industry and Telecom Éireann to consider the benefits of data interconnect products, particularly having regard to concerns expressed in the consultation about possible congestion of the PSTN.

In providing services to its competitors and its own downstream arm, Telecom Éireann is required to act in a non-discriminatory fashion under, inter alia, Condition 23 of its General Telecommunications Licence. This means that where a competitor is an OLO, and is operating in the same market as "Telecom Éireann Retail", such OLOs must be offered similar services on similar terms as are offered to "Telecom Éireann Retail". In the context of current arrangements where Frame Relay backhaul is used by Telecom Éireann in providing services to ISPs, the Director is pleased that Telecom Éireann has announced its intention to offer "wholesale" access terms and conditions for Frame Relay services in the coming weeks. This provides OLOs with the same network services that are available to Telecom Éireann's own downstream arm, thus enabling OLOs to compete in the supply of backhaul to third party ISPs. To do so they may choose to use the frame relay backhaul option, the PSTN interconnection described in this paper, self-built networks, or lease network capacity from third parties.

3.5 End user prices and influence of terminating operators

3.5.1 Control of end user price – ODTR proposal

If Telecom Éireann, as an originating operator, sets the retail price to call NTCs and 1891 codes that are hosted on OLOs' networks, Telecom Éireann has the ability to reduce the terminating operators' revenue by lowering the retail price while Telecom Éireann's cost based retention remains the same. To resolve this problem, the ODTR has proposed that new arrangements should allow the terminating operator control of the retail price.

3.5.2 Views of respondents

All OLOs (without exception) support the concept that the terminating operator should have control over the retail price but considered that there may be practical difficulties in implementing this approach quickly.

Telecom Éireann is in favour of the retail price being under the control of the terminating operator for NTCs, but not for 1891 calls for the same reasons as cost-based retention is not favoured for 1891 calls (see section 3.3.2).

3.5.3 Conclusion

The Director's position is that the retail price of calls to the Internet and other NTCs should be under the control of the terminating operator for the following reasons:

- As there is no rationale for differentiating one nationally interconnected code (1891) from any other (NTC), the ODTR considers that it is sensible to apply the same pricing arrangements and interconnect arrangements to both 1891 and all other NTC services;
- One of the objectives of this consultation process was to enable a wide range of revenue and price models, while avoiding any solutions that 'push' costs into either call prices or subscriptions;
- National interconnect and regulated retail retention arrangements have the potential to enable a wide range of price models for calls to the Internet including the two extremes of zero call charge and zero subscription charge.

This level of consumer choice is expected to ensure that the market for Internet usage in Ireland is stimulated. The revenue flow for NTC services is essentially the same but will use existing price points already in place under the administration of the national numbering plan.

The ODTR will publish a draft number plan for NTCs for Internet with proposed price points shortly. This document will form the basis for discussions in the working group that is described in section 4. The final numbering plan and price points will be determined by the ODTR having regard to the conclusions of the working group and such other information that the Director considers appropriate.

Annex C illustrates a range of call and revenue flows for Internet calls that will be enabled under the new arrangement.

4. Industry Forum

4.1 Introduction

In 99/25 views were requested on the establishment of an industry forum, including the value of such a forum, what issues the forum should consider, who should participate and what timetable the forum should operate to. Most respondents to 99/25 considered that an industry forum could play a useful role in the development of the new interconnect arrangements.

The Director agrees with respondents that a forum should be established and considers that there are many issues to be resolved, specifically regarding implementation, which could usefully be addressed by an industry forum.

4.2 Participants

It is important that the industry is fully represented, while at the same time the number of industry representatives is kept at a manageable level. Accordingly, it is suggested that those parties that have expressed an interest in this area (i.e., those that have responded to 99/25) establish the forum. The ODTR will co-ordinate the first meeting of the forum and asks parties to inform this Office of their interest in participating. Responses should be sent to Sean MacCann (email: maccanns@odtr.ie) by 5th August 1999.

4.3 Responsibilities

A number of responses were received to 99/25 that specified different issues an industry forum could address. The Director has considered these suggestions and has concluded that, in order for the forum to be most effective, it should focus on key implementation issues that will enable the new framework for interconnect for Internet calls to be established as rapidly as possible. These key issues include:

- Implementation of price point and number plan;
- Discussion and implementation of any new technical standards;
- Data fill and Intelligent Network (“IN”) requirements;
- Billing procedures;
- Call routing procedures;
- The use of actual network elements versus averaged network elements as the basis for retention;
- A minimum set of retail cost elements associated with the retail retention of Telecom Éireann (final retention will be set based on actual cost information and justification by Telecom Éireann to ODTR);

The forum should try to achieve agreement on these key issues and should report to the ODTR on its conclusions. Telecom Éireann has responsibility for amendments to the RIO to include the new interconnection framework. The Director has a range of statutory functions in relation to the offerings in the RIO, including requesting justification and, if appropriate, directing changes.

4.4 Timeframe

Again, in order to be effective, the forum should be established and conclude its work as speedily as possible. It is suggested that the forum be established according to the following procedure:

- The first meeting of the forum will be on 12th August 1999. This will give all parties sufficient time to consider their representation on the forum;
- The ownership of forum will rest with parties;
- The forum should agree its remit, based on the principles set out in this paper. It may be appropriate for the forum to proceed along lines of the Interconnect working group in order to save time in establishing the group;
- A list of issues should be agreed and clarified at first meeting.

Any adjustments to the timetable set out in section 5.2 will be agreed at the first meeting. The forum will make a final report to ODTR on issues agreed and on any issues that remain outstanding at the conclusion of its work.

4.5 Critical success factors

The following four critical success factors are required to ensure that the forum is a success:

- It is essential that all parties are represented and take their responsibilities seriously;
- The number of participants on the forum needs to be controlled to ensure non-exclusion but still remain manageable;
- The forum must be focussed on key start-up issues to enable the new regime to operate as quickly and effectively as possible;
- The forum must adhere to an agreed timeframe.

5 Conclusions

5.1 Impacts on stakeholders

The decisions taken in this paper will affect a number of stakeholders, including:

- Consumers;
- OLOs;
- ISPs;
- Telecom Éireann;
- The Irish telecommunications market; and
- The Irish economy.

The likely impact on each of these groups is outlined below.

5.1.1 Impact on consumers

In examining the various interconnection regimes for calls to the Internet, the ODTR is conscious of the need to ensure that Ireland's regime is robust and flexible, facilitates competition and secures maximum benefits for end-users¹.

Research and international comparisons have shown that Internet usage is encouraged if operators are free to develop new pricing and revenue models and to charge customers for *either* call charges *or* Internet subscriptions.

In a recent Jupiter survey, consumers in major European markets were asked if they were likely to go online (and use the Internet). 11% expressed interest, but the number increased nearly fourfold if local phone charges were dropped. A similar increase took place in the absence of Internet subscription charges.

One of the objectives of the two consultations was to enable a wide range of revenue and price models, while avoiding any solutions that 'push' costs into either call prices or subscriptions. National interconnect and regulated retail retention arrangements can enable a wide range of price models for calls to the Internet including the two extremes of zero call charge and zero subscription charge.

Therefore, the ODTR considers that the decisions taken in this paper will enable consumers to choose the subscription package that is most convenient to them – ranging from zero subscription with call charges, to zero or flat rate call charges with a subscription fee. This should help ensure that no sections of the population are excluded from Internet services.

5.1.2 Impact on OLOs

Introducing national interconnect on a cost basis provides opportunity for OLOs while leaving build/buy decisions unaffected by any artificial regulatory constraint. This should ensure that OLOs are able to compete more effectively with the incumbent operator. In particular the decision to allow the terminating operator to set the retail price should stimulate OLOs into providing a number of innovative new value-added services to consumers.

¹ Regulation 10(1) of the Interconnection Regulations.

5.1.3 Impact on ISPs

With reference to ISPs, the decisions outlined in this paper will remove some barriers to entry and allow smaller ISPs to compete with those with national coverage. The decisions should also enable successful ISPs to negotiate outpayments from terminating operators, providing revenue that may be used to fund innovative content and enable new pricing models.

5.1.4 Impact on Telecom Éireann

These decisions will ensure that Telecom Éireann can also develop innovative and creative products and services and compete in the market on a level playing field. They are designed to ensure there is no abuse of Telecom Éireann's position as an SMP operator. However, they also ensure that Telecom Éireann can earn a fair rate of return on its investment, and provide a challenge to the incumbent to develop new services and products.

5.1.5 Impact on Irish telecommunications market

These decisions should enable competition in both networks and services (leaving build/buy decisions to the market) and continue the process of liberalisation. The ODTR expects to see a variety of new services offered at competitive prices as competition between OLOs, ISPs and Telecom Éireann leads to innovation.

5.1.6 Impact on Ireland

The importance of having a competitive, telecoms market cannot be overstated. It is vital that Ireland has a dynamic, innovative set of operators competing for consumers in a variety of ways. The decisions set out by the ODTR in this paper will ensure that these consumers will be able to access the Internet in a number of ways, thereby avoiding exclusion of any particular type of potential Internet user and opening the way for widespread adoption of the Internet.

This sustainable competition is essential if Ireland is to develop a cutting edge telecoms industry and a highly Internet literate population.

5.2 Next steps

It is important that the industry makes progress in its discussions following this paper. The proposed work plan for the industry forum is set out in the following table:

Action	By	Due Dates
Notification to ODTR by interested parties of Representatives on Industry Forum	Interested parties	05.08.1999
Publication of numbering plan and initial price points	ODTR	09.08.1999
First meeting of Industry Forum	All	12.08.1999
Final conclusions of Industry Forum	All	09.09.1999
Justification of offering in RIO, including costs (retail retention) by Telecom Éireann to ODTR	Telecom Éireann	23.09.1999
Determination by ODTR on retail retention costs	ODTR	07.10.1999

In addition to this, the ODTR is considering the requirement for further consultations on data interconnection. Interested parties are invited to submit any comments on the scope, scale and timing of such consultations having regard to other developments flagged in the ODTR work programme (available on ODTR website www.odtr.ie). Comments should be submitted to Sean MacCann (e-mail: maccanns@odtr.ie) by 10th September 1999.

In the meantime, the ODTR notes the introduction by Telecom Eireann of wholesale terms and conditions for access to the Telecom Eireann Frame Relay network. This is considered a valuable first step in providing alternatives for the carriage of data traffic.

ANNEX A: Summary of responses to 99/25

A1: Respondents

The ODTR had an excellent response to 99/25, although it would like to see more ISPs contributing in future.

The ODTR has received responses to 99/25 from the following parties:

- ANU Internet Services;
- Cable and Wireless;
- Connect Ireland;
- Elive;
- Energis;
- Esat Digifone;
- Esat Telecom;
- MCI Worldcom;
- MediaNet;
- Ocean;
- PostGEM/Ireland On-Line;
- Telecom Éireann.

The following section presents a summary of the comments received in response to consultation paper 99/25. Unfortunately it is not possible here to represent every comment, indeed some comments submitted would be better directed to other consultations that will be carried out by the ODTR. A list of consultations on related issues can be found on the ODTR website (www.odtr.ie) and interested parties are encouraged to review these documents.

A.2 Impact on ISPs

A.2.1 National interconnect for 1891 calls (Q2.a.1)

All ISPs consider that national interconnect for 1891 calls would enable them to offer a more attractive service to consumers by making national Internet service provision more competitive. A common view was that *“[the lack of an interconnection arrangement for 1891] means that ISPs...are limited in the range of products and services they can offer without massive infrastructural investment.”*

A.2.2 ISP licensing arrangements (Q2.a.2)

Most operators expect an environment with a mixture of ISPs with and without telecoms licences and that it would be up to the individual ISP whether they seek a licence.

It was stated that some ISPs may provide web hosting and email services and will therefore not

want or warrant a telecoms licence. Furthermore it was considered that some ISPs may be entitled to a licence but will not be inclined to operate with one. All OLOs stated that only ISPs with licences should be able to interconnect.

A.3 Extent of regulatory intervention

A.3.1 Establishment of an industry forum (Q4.a.1)

All respondents agreed that some form of industry forum would be appropriate to aid the development of interconnect arrangements for access to Internet services.

However, some OLOs preferred the idea of a more general interconnect forum rather than an Internet specific interconnect forum, and one ISP was concerned that Telecom Éireann would dominate any forum.

A.3.2 Issues to cover in an industry forum (Q4.a.2)

It was considered that the most constructive debate would occur in relation to technical and implementation matters rather than commercial issues. It was suggested that the items addressed by the forum could include:

- Interconnect rates, outpayment rates, and retail rates;
- Infrastructure requirements and rates and all technical interconnection issues;
- Developing future interconnect models for ODTR consideration;
- Mediation of interconnect related disputes before ODTR procedures are invoked;
- Planning to pre-empt future interconnect disputes;
- Monitoring international developments in interconnect policies;
- Implementation of regulatory procedures;
- Defining audit procedures to eliminate potential regulatory loopholes;
- Defining actual costs related to network elements of operators with SMP;
- Co-location issues;
- Proposing new technology licensing models for ODTR consideration.

A.3.3 Timeframe of industry forum (Q4.a.3)

Most respondents consider that an industry forum should be established after the consultation is complete and that the ODTR should assist in defining issues for discussion, setting timetables and chairing meetings.

A.4 Governing principles of Interconnect services for access to Internet services

A.4.1 Interconnect arrangements for 1891 calls (Q4.b.1)

All respondents, with one exception, expressed a view that interconnect arrangements should be put in place for calls destined for ISPs to be passed over national interconnect links. The main rationale for this approach is that it adheres to the concept of 'any-to-any' communication.

One operator that disagreed stated that this action would increase the average number of PSTN

network elements used.

A.4.2 Interconnect arrangements for different traffic types (Q4.c.1)

Only one respondent considered that interconnect arrangements should be differentiated by traffic type. This respondent was unclear whether the two types of traffic had different costs and stated that *“Interconnect decisions should be cost based rather than based on practicalities.”*

All other respondents agree there should be no differentiation between different types of traffic as all PSTN traffic has the same call origination costs from end user to interconnect point depending on the network elements used.

It was also stated that it would be impossible to administer different interconnect arrangements for different traffic types as there is no definitive method of establishing that any call will terminate on the Internet. This problem is likely to become more pronounced as the data/voice distinction becomes increasingly blurred. However, some operators stated that it is feasible to have separate interconnect arrangements for IP traffic once it has been removed from the PSTN.

A.4.3 The role of cost orientation in setting interconnect rates (Q4.d.1)

There was some confusion whether this question implied that all operators should only receive interconnect payments equivalent to their costs. When the ODTR posed this question it had Telecom Éireann as an SMP operator in mind and every respondent agreed that interconnect rates should be cost oriented for an operator with SMP in markets that are not competitive markets.

One operator does not consider dial-up access conveyance to be an interconnect product and did not agree that interconnect arrangements for all NTCs should be reciprocal between Telecom Éireann and OLOs.

A.5 Retail retention for originating operators

A.5.1 The role of cost orientation in setting retail retention (Q4.e.1 and Q4.e.2)

All respondents (apart from one) agreed that Telecom Éireann should be required to sell call origination services, in which it is dominant, on cost-based terms to upstream competitors on a non-discriminatory basis. A widely stated view was that the terminating operator adds the value and one OLO stated that *“[UK experience] is that the development of the market is driven not by the originating operator but...by the ISPs, content providers and other terminating operators.”*

The one dissenting respondent did not agree that dial-up call origination is an interconnect service. It stated that the termination of NTC services is the interconnect service and the provision of dial-up access conveyance to the dialling customer is a retail service provided to and purchased by that customer. It considers that, as such, is not appropriate to apply cost-based price controls to the interconnect charges for these services.

A.5.2 Allowable origination retail costs in total retention (Q4.e.3)

Respondents understandably disagreed over which costs should be allowed, with some parties arguing for very few allowable costs and others arguing for many. On the whole, respondents consider that the originating operator should be able to recover billing and collection costs associated with NTCs and 1891 services in retail costs, but not recover marketing or other retail related costs. The only exception would be if the originating operator agreed to promote third party NTC services within its own sales materials or customer bills.

In general, the retail costs, which it was considered might be allowed in total retention, are:

- Revenue related costs such as, cash collection and bad debt costs;
- Cost of separate bill entry where applicable;
- Costs of separate publication of price;
- Cost of generating, collecting and processing call records onto retail bills.

Again, it should be stressed that views differed on this point e.g. one OLO took the view that *“When the OLO is the retail vehicle there are no relevant retail costs that should be automatically attached to the wholesale interconnect costs.”*

A.5.3 Basis of network element costs (Q4.f.1)

Respondents tended to propose that de-averaged costs of network elements be used (Proposal Two) as the basis to set Telecom Éireann’s retention where this was justified by differences between services, or differences in the pattern of network elements used by interconnecting parties. This was felt to provide the correct incentives in order to ensure that efficient interconnect occurs. Most respondents consider that Proposal One creates no incentives for efficient interconnect, and that Proposal Three favours those with significant infrastructure already in place and would create a barrier to entry. However, it was noted that this may be complex and should be implemented only if feasible and economic, i.e. if the benefits outweigh the costs.

A.6 Interconnect arrangements for 1891 and other NTC codes

A.6.1 Should 1891 be treated differently to any other NTC? (Q4.f.2)

All respondents (except one) considered that 1891 codes should be treated the same as any other NTC as regards interconnection arrangements. Generally there was agreement with the view that if 1891 were treated differently to any other NTC there would be inefficient migration of services between codes.

The one operator that disagreed considers that Internet access calling and calls to NTCs are inherently different services and gave the following reasons for this opinion:

- Fewer network elements are used in an 1891 call (as Internet access points are connected directly to the subscriber stage of the switch);
- 1891 call diversion makes no use of IN capabilities;
- The calls carry IP traffic in voice format and in other respects such as average duration, and traffic profile exhibit the characteristics of data calls rather than voice calls.

There was some disagreement regarding barriers to entering the data network market. Some respondents stated that there are few barriers to deploying Frame Relay networks (or other types of network) and others thought that there are substantial barriers to building such a network.

A.6.2 Should de-averaged costs be used? (Q4.f.3)

The general opinion is that where per network element (i.e. de-averaged) charges are used to calculate the prices charged for conveyance, operators will invest in network build where they can provide this more efficiently than using the incumbent’s network. Therefore, in theory, de-averaged costs should be used.

One OLO considers that each network element needs to be broken down further than primary, single tandem and double tandem to allow the averaged cost of each individual element to be used to build the interconnect rates. Concerns were also raised about de-averaged costs being difficult to implement and bill.

A.7 Implementation

A.7.1 Terminating operator control over end user prices (Q4.g.1)

All respondents consider that the terminating operator should have some control over the retail price charged by the originating operator. This would prevent the incumbent leveraging its power in the downstream access market to restrict competition from other ISPs and OLOs. Many respondents consider the practical difficulties with such arrangements should be resolved in the industry forum rather than in this consultative process.

One OLO considers that originating operators should publish their origination charges (an average for each terminating operator or for bands of terminators with similar networks). This would enable terminating operators to determine the termination rate to quote in order to reach the desired price point (i.e. allow terminating operators to exercise indirect control over the retail price).

A.7.2 Codes for pay-as-you-go (PAYG) services (Q4.g.2)

Most respondents consider that PAYG services should have a separate code from the 1891 code used for the basic (subscription) dial-up Internet access service. This is both because the price could be different from 1891 prices, and because the elements of the service cost covered by the price are different from the elements covered by the 1891 price in the subscription service.

A number of respondents also stated that they wanted a separate code as it was feared that consumers may associate 1891 with a particular price and service (although the counter argument was forwarded that as standard Internet access codes and PAYG numbers are programmed into PCs there is less requirement for the customer to see a clear link between code used and price charged).

A.7.3 Setting retail price bands (Q4.g.3)

Most respondents consider that there should be various chargebands established with bounds for particular number ranges, subject also to the constraints of Telecom Éireann's retail billing system (which should be upgraded over time). e.g. 1891 from zero ppm to local, 1892 from local to 1ppm above local. It was also suggested that these chargebands should be made freely available to all operators.

Another respondent envisaged different retail prices for some services (PAYG Internet Access, Directory Enquiries, new Premium Rate Services) depending on the terminating network or service provider chosen.

One OLO pointed out that competitive pressures from OLOs would also maintain downward pressure on the combined service offered to Telecom Éireann's customers.

A.7.4 New number translation codes (Q4.g.4)

All respondents consider that new codes would be necessary if Internet services were to be offered on NTCs. A new code is required because of the guidelines already issued by the Task Force on Numbering ("TFN") on the pricing of calls to the existing NTCs. The retail price restrictions on 1850 and 1890 should be relaxed if these codes are to support the full range of PAYG services.

One OLO considers that if near-end handover is operated for the incumbent for non-geographic calls, there is no need for traffic to be differentiated between voice and Internet by the originating operator as it would be identified by the number holder.

Another OLO stated that if a variety of retail rates are required for value-added services then the current voice (15xx) model is a good working example that can be mirrored into an 18xx range. It is important to keep a separate Internet number range to enable identification of Internet traffic for routing to and through a Frame Relay network.

A.7.5 Timescale (Q4.g.5)

It was widely considered that it would not take long (c8 weeks) to specify, code, test and implement on Telecom Éireann retail billing systems any price changes agreed with service providers (assuming that the structure of the retail price is not radically different from any structure already implemented). Subsequent additions of price bands will require notification to the industry and some brief discussion to ensure that there is not an explosion in the number of price bands, leading to customer confusion.

The implementation of de-averaged rates for originating operator retention (and wholesale prices) was considered to take longer to establish (up to six months). The two main elements of the work are the allocation of network elements used to a range of different traffic types, and the implementation of necessary functionality on an Interconnect Billing system.

ANNEX B: Consultation and legislative background

B.1 Background to this consultation paper

In December 1998 when the first interconnection agreements between fixed operators were concluded, the question of the interconnection regime associated with Telecom Éireann's "1891" access service remained an unresolved issue.

On 22 December 1998, the ODTR requested that Telecom Éireann provide a price for 1891 access to Internet services as an interconnect product, or inform this Office why the service was not available.

In response, Telecom Éireann stated that it had no objection to offering 1891 as an interconnect service. However, it considered that there was an issue that should be explored in connection with such an interconnect service: if the 1891 access code were to be freely permitted over a national interconnect, it would be possible for Internet Service Providers ("ISPs") who had decided not to invest in a national Point of Presence ("PoP") network to provide a national service through the use of an Other Licensed Operator's ("OLO's") carrier code.

In January 1999, as a result of representations from various OLOs requesting that 1891 access be made available as an interconnect service, requests for a public consultation on the issue and a request for a complete study on the arrangements for Internet access and related interconnection prices in Ireland, the ODTR issued a consultation paper 99/02 ("Interconnection services for calls destined for Internet Service Providers"). 99/02 proposed an interim set of interconnection arrangements pending a fuller review of Internet access arrangements in Ireland.

This full review of interconnect arrangements for calls destined for ISPs was completed in April 1999 and published as Consultation paper 99/25 ("Interconnect for calls destined for Internet and number translation code services"). This second paper considered a wide range of issues including:

- National or local area interconnect for calls destined for Internet services;
- The concept of cost based retail revenue retention for originating operator for calls destined for Internet service and other Number Translation Code ("NTC") services;
- End user prices and the control of these prices by the terminating operator;
- Different methods a principles for setting cost based retention of originating operators.

In general, the level of detail provided by Internet Service Providers ("ISPs") in response to both consultation papers regarding the particular issue of the effect of routing 1891 calls outside local call areas was lower than the ODTR had hoped. During the second stage of the consultation, questionnaires were sent to 11 Irish ISPs. This questionnaire asked the ISPs for subscriber numbers, how ISPs connect to and use telecommunications networks in Ireland and asked for detailed information regarding PoP rental and ownership, including levels of historical investment in PoPs in Ireland. 5 ISPs responded to the ODTR's questionnaire.

B.2 Legislative background

This decision notice addresses the interconnection arrangements that are to be applied to calls destined for ISPs and other NTC services. There is a body of EU and Irish legislation that governs the provision of interconnection in telecommunications. The most relevant pieces of legislation are:

- Directive 97/33/EC of the European Parliament and Council of 30 June 1997 on interconnection in Telecommunications with regard to ensuring universal service and interoperability through application of the principles of Open Network Provision ("ONP") (the "Interconnection Directive");

- The European Communities (Interconnection in Telecommunications) Regulations, 1998; S.I. No. 15 of 1998 (the “Interconnection Regulations”) which transpose the Interconnection Directive into Irish law.

The Directive and Regulations place special obligations on an operator who is designated by the Director as having Significant Market Power (“SMP”). Among these are the following:

- The obligation to publish a Reference Interconnection Offer (“RIO”) that is defined as: *an offer to provide an interconnection facility that includes a description of the interconnection offerings setting out the particular components according to market needs and all of the terms and conditions for interconnection to be satisfied by a person wishing to enter into an interconnection agreement*². The Director may, in certain circumstances, direct changes be made to the RIO;
- The obligation, in providing interconnect services, to adhere *inter alia* to the principles of non-discrimination, cost-orientation and transparency as described in the Interconnect Directive and Regulations.

Telecom Éireann is currently the only operator that has been designated as having SMP in the relevant market and therefore subject to these requirements.

² Paragraph (17) of Regulation 8 of the European Communities (Interconnection in Telecommunications) Regulations, 1998, S.I. No. 15 of 1998.

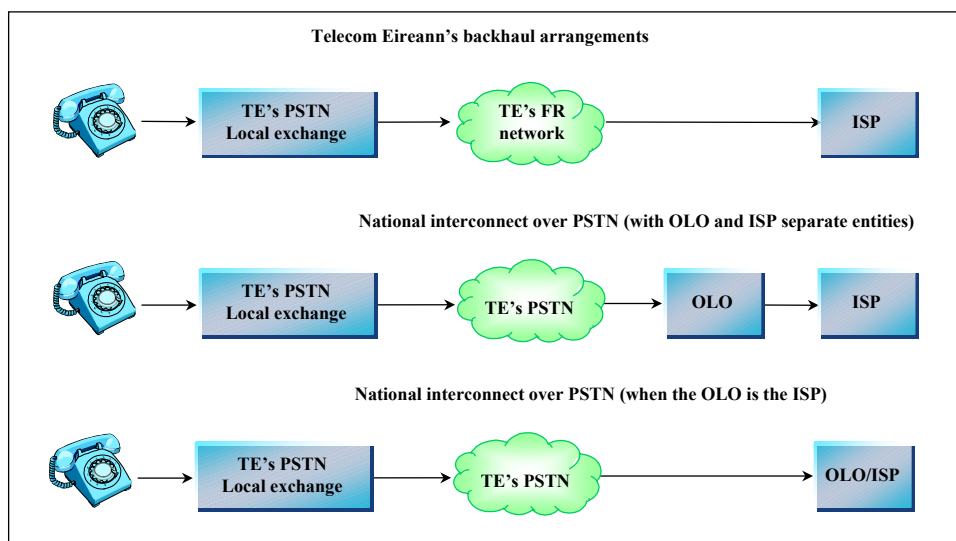
ANNEX C – Internet pricing models

C.1 Introduction

By allowing national interconnect for 1891 numbers the ODTR expects to enable the launch of a number of services based on different revenue models. This choice should help to increase awareness and penetration of the Internet in Ireland by allowing consumers to choose the option that maximises the value to them.

Figure 1 shows how 1891 call flows travel to the Internet currently and how they may be transported over the PSTN using national interconnect. In both cases the caller is connected in the first instance to the Telecom Éireann network.

Figure 1: Call flows



The first diagram in Figure 1 shows how 1891 calls are currently transported over Telecom Éireann's Frame Relay network to an ISP directly connected to that network. The second picture displays the case where a call may be carried over the Telecom Éireann PSTN to an interconnection point and onto the network of an OLO to its ultimate destination which is an ISP. The third diagram shows a situation where an ISP is also a licensed OLO and is directly interconnected to the PSTN.

The national interconnection model is expected to allow a range of revenue models to develop and some of these are set out below. However, the ODTR considers that it is up to the individual players in the industry to arrange the most advantageous methods of access and looks forward to new and innovative offerings by operators and ISPs.

C.2 Examples of different revenue models

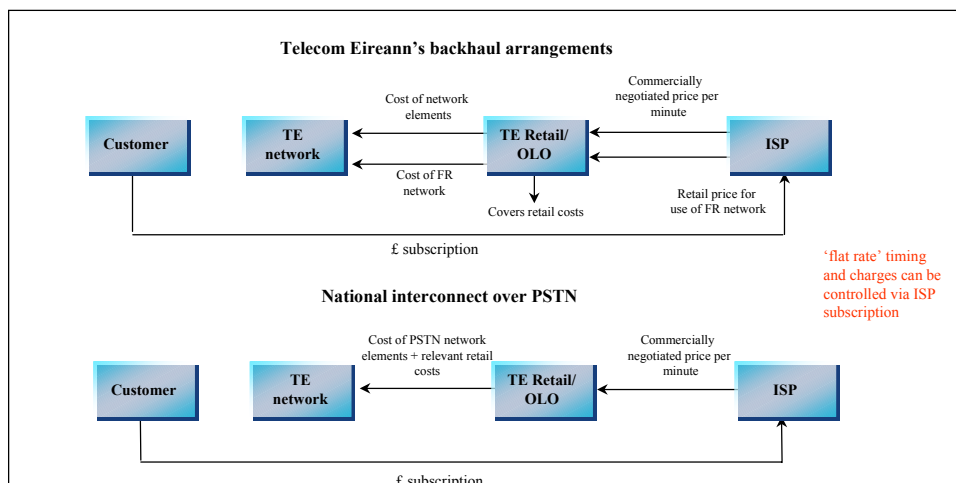
This section examines different revenue models – the diagrams do not include call flows between operators.

C.2.1 ‘Flat rate’

The first model that we examine is popularly known as ‘flat rate’. This term describes the situation when the consumer pays zero call charges and the cost of usage is recovered via a subscription fee.

Figure 2 displays the revenue flows between operators under flat rate pricing.

Figure 2: Flat-rate revenue flows



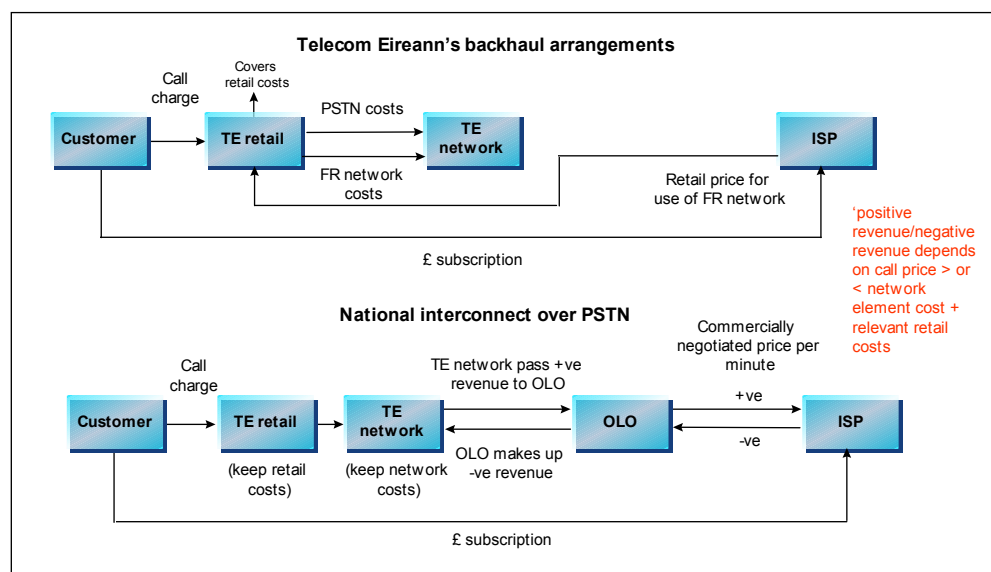
In this case the customer pays one charge - a subscription fee to the ISP. This is the entire source of revenue from which the cost of the service is funded. The ISP pays either Telecom Éireann or an OLO for conveyance. If an OLO is involved they in turn pay Telecom Éireann the cost of the network elements involved in making the call plus relevant retail costs (i.e. the regulated retail retention rate).

C.2.2 Combination of call rates and subscription fees

In the second model a mixture of subscription fees and call charges fund the service. This model is similar to the current 1891 service in that the customer pays two charges.

Figure 3 shows the revenue flows between the incumbent, OLOs and ISPs under this scenario.

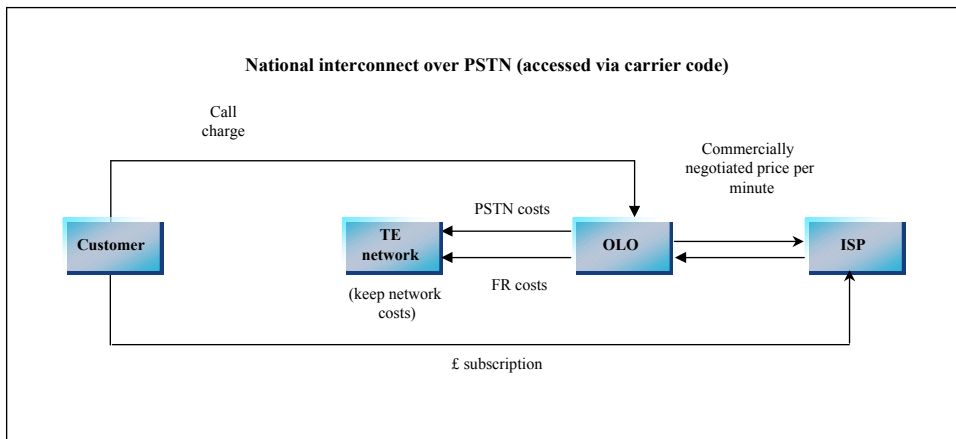
Figure 3: Revenue flows under low call rates and low subscription fees



In this model, the user pays a call charge to Telecom Éireann. In addition to this, the ISP collects a subscription fee from the user and pays a commercially negotiated price per minute to the OLO for call conveyance. This model allows for a range of price points and depending on whether the call charge covers all or part of the call costs, there may be a revenue exchange between the OLO and Telecom Éireann. In the case where the ISP is an OLO, the number of players in the chain is reduced but the revenue flows are similar.

It should be noted that Figure 3 describes the situation whereby the call is originated on Telecom Éireann's network. It is also useful to consider the case of Internet access via a carrier code. This scenario is displayed in Figure 4 below.

Figure 4: Indirect access revenue flows



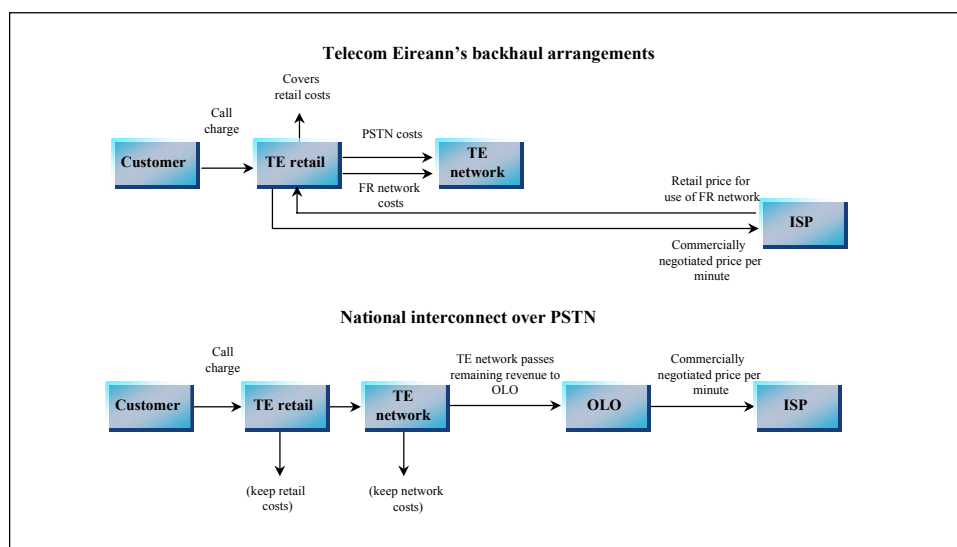
In this instance, the consumer dials a carrier code and pays the call charge to the OLO and also pays a subscription fee to the ISP. The OLO then pays Telecom Éireann for the PSTN network elements that it uses, and for the Frame Relay backhaul if this is used. In addition, the OLO and the ISP will negotiate a price per minute to be applied to this traffic.

C.2.3 ‘Freeserve’

The final model we examine is widely referred to as ‘Freeserve’, after the popular UK service from Dixons that pioneered this approach. This service has no subscription fee to the end user and is paid for by high call charges. For this reason it is also referred to as pay-as-you-go (“PAYG”).

Figure 5 displays the revenue flows between operators under a Freeserve scenario. For simplicity in this diagram shows the case in which Telecom Éireann originates the traffic. However, the situations described can apply equally to indirect access via carrier codes.

Figure 5: Revenue flows under a “Freeserve” model



As displayed above, in this scenario the end user pays only one type of charge – call charges, and there is no subscription fee charged by the ISP. The entire cost of providing the service is therefore recovered through the call charge levied on the subscriber. The revenue flows from the consumer who pays Telecom Éireann the relevant call charge. Telecom Éireann retail may then keep its retail costs and passes the revenue to Telecom Éireann network. Telecom Éireann network keeps its network costs and pays the remaining revenue to an interconnecting OLO. The OLO then makes an outpayment to the ISP based on a commercially negotiated agreement. Where the ISP is a licensed operator this is an internal issue.

C.3 Summary

The ODTR considers that the structure set out in this document will enable all three revenue models to exist - and could produce other models that have not yet been observed in other countries. Therefore, there will be a range of options for end users to choose from, including flat rate and Freeserve type services.

This choice of access methods is one contributor to ensuring that the maximum number of Irish people and businesses can benefit from the Internet.