



Office of the Director of
**Telecommunications
Regulation**

Implementing Full Mobile Number Portability in Ireland

Consultation Paper

Document No. ODTR 01/36

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Oifig an Stiúirthóra Rialála Teileachumarsáide
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1. Introduction

In January 2001 the Director of Telecommunications Regulation published a Decision Notice on Mobile Numbering and Mobile Number Portability in Ireland (D1/01). In that Decision Notice the Director stated that she considered¹:

- There is a need to establish a specification and timetable for how best to implement Full Mobile Number Portability (FMNP) in the near future;
- It is prudent and reasonable to set Q4/2002 as an indicative timetable for FMNP introduction;
- Preparatory work should begin on this basis.

Accordingly, the Director decided² to establish a committee, chaired by the ODTR and with members drawn from the industry, to carry out preparatory work for the implementation of FMNP. The target for this committee is, by October 2001, to establish a high-level specification for the porting and routing processes, define an implementation timetable, and agree the charging principles to be used.

In order to facilitate dialogue within this committee, the Director also undertook to provide a discussion document which would, *inter alia*, provide some background on the current status of number portability in Ireland, consider lessons to be learned from other countries, and offer proposals for charging and routing rules and porting procedures.

In February 2001, the Director asked Ovum to prepare that discussion document. The Ovum discussion document forms part of this consultation. However, the analysis, conclusions and proposals which it contains are Ovum's. Their publication does not imply any acceptance on the part of the ODTR. The discussion document is available from the ODTR web site (www.odtr.ie) or by requesting a copy from Ms. Claire Nolan, ODTR (Phone +353 1 804 9629, e-mail nolanc@odtr.ie).

The Director now invites views from interested parties on the findings presented in this consultation paper and the questions which are posed within it. Comments should be submitted in writing before 5pm on Friday 15th June 2001 to: -

Ms. Claire Nolan,
The Office of the Director of Telecommunications Regulation,
Abbey Court,
Irish Life Centre,
Lower Abbey Street,
Dublin 1.

or by e-mail to: nolanc@odtr.ie

All comments are welcome, but it would make the task of analysing responses easier if comments reference the relevant question numbers from this document.

In order to promote further openness and transparency, the ODTR will make copies of the comments available for public inspection at its offices, excluding confidential

¹ Decision Notice D1/01, Decision 5.4.

² Decision Notice D1/01, Decision 5.5.

information. Where material that is confidential is included in a response, this should be clearly marked as such and included in an Annex to the response.

Following the consultation, the Director will issue a Decision Notice on the main issues raised.

This consultation paper does not constitute legal, commercial or technical advice. The Director is not bound by it. The consultation is without prejudice to the legal position of the Director or her rights and duties under legislation.

2. Summary

This consultation paper is designed to lead to a framework for the implementation of Full Mobile Number Portability (FMNP) in Ireland.

The basis for such a framework already exists within the Decision Notice D1/99, *Introducing Number Portability in Ireland*. Although D1/99 was principally concerned with the implementation of fixed network number portability it also provided a generic framework which is equally relevant to mobile number portability. For clarity and completeness those elements of D1/99 which are relevant to FMNP have been repeated in this consultation paper. Most of the proposals on routing and charging rules are simply transposed from Decision Notice D1/99.

Some elements of D1/99 do not adequately address the specific needs of FMNP. In particular the porting process outlined in D1/99 was based on international best practice at that time, all of which was limited to the fixed network and geographic or non-geographic number portability. The Director has therefore drawn up new proposals for the FMNP porting process. These proposals are based on the Ovum discussion document, *Implementing Full Mobile Number Portability in Ireland* (Ovum Ref. CLE80), which the ODTR is publishing in conjunction with this consultation paper. Ovum's recommendations take account of the lessons learned by other countries which have already implemented FMNP. Equally important, they constitute proposals for ensuring that it is no more cumbersome for the customer to achieve FMNP than it currently is to obtain Subscriber Mobile Number Portability.

The FMNP porting process which the Director is proposing has three key features:

1. The number portability system should be de-coupled from the retail system for subscribing to a mobile network operator, so that all users can make number portability arrangements by telephone. This will:
 - Remove the costs and potential problems of having to make changes to the retail system;
 - Permit number portability to operate as easily for pre-pay as it does for post-pay customers;
 - Permit users to try out new mobile operators before porting their existing numbers to those operators.
2. The right to port a number should be established primarily by checking that the user has possession of an existing mobile handset which uses that number. This method will avoid the many problems of matching names and addresses that have caused portings in other countries to take many days.
3. The donor network operator should be required to accept an order from the recipient operator without contacting the customer, and to close the existing account as a result of that order. This is essential if the system is to be simple and low cost, and if long dispute-related delays are to be avoided.

The Director intends to capture the key framework requirements in a Decision Notice before convening an industry committee to prepare a detailed specification for FMNP that meets these key requirements. The Decision Notice should be published by 30 June 2001, and the full specifications should be agreed by the industry before 31 October 2001. This will ensure Ireland is positioned to implement FMNP by Q4/2002 at latest.

3. Routing responsibility and rules

3.1 Requirements carried forward from D1/99

A framework of routing responsibilities and rules was specified by the Director in Decision Notice D1/99. In particular the originating operator, which provides the call service, has the primary routing responsibility independent of the block network³. This rule applies to all forms of number portability, including FMNP.

Within this overall responsibility, in Decision Notice D1/99 the Director determined the routing rules for fixed network number portability. The Director is minded to retain most of these rules for FMNP. This would mean that:

- *The originating operator (fixed or mobile) is free to decide whether to implement the necessary routing capability itself or to pass the call to another operator that will perform the additional routing functions. (New operators therefore have the freedom to outsource the routing capability);*
- *Operators are free to decide which routing technology to use. This freedom will enable the operators concerned to decide which technology best fits their networks and to change the technical solution used if synergy with other services or growth in the volume of calls to ported numbers makes a change appropriate;*
- *Fixed network operators, as well as mobile operators, are responsible for routing to the correct mobile operator;*
- *The block operator is required to provide a routing service to other operators for the correct delivery of an incoming call to any number which has been exported from the block operator's own network;*
- *eircom is required to provide a routing service to other operators for the correct delivery of calls to ported numbers.*

The Director has considered in particular whether there is a need to retain the provision for *eircom* to provide an FMNP routing service for other operators. She concludes that there probably is such a need. The purpose of this requirement was to ensure that a new market entrant did not face the hurdle of having to support number portability from its first day of operation. Instead it could outsource this requirement to any other operator which provided it; by default outsourcing to *eircom*. The Director believes that this argument is equally valid for FMNP, and that *eircom* is best placed to provide this "carrier of last resort" function owing to its position in the market for calls to mobile numbers. However, as and when a competitive market develops for routing service to ported mobile numbers, the Director may review the need for this provision.

³ In the case of calls which originate outside of Ireland, routing responsibility rests with the operator that imports the call.

3.2 Additional requirements

The Director considers that it is important for the FMNP implementation to support short message services as well as call services to ported numbers. The use of SMS is growing rapidly in Ireland and it is likely that consumers would be deterred from porting their mobile numbers if it interfered with their ability to make or receive SMS messages. At least one FMNP network solution is available which supports SMS – the Signalling Relay solution, which is already operational in other European countries – so the Director does not anticipate any problems in meeting this requirement.

Furthermore, in order to maintain user confidence and avoid complexity in the relationship between mobile phone number and mobile mailbox number, the Director proposes that mailbox numbers should always be ported when the corresponding mobile number is ported. In practice, this means that the block mobile operator will apply onward routing for the mailbox number, irrespective of whether the customer previously used a mailbox. It also means that the mailbox number will be added to the database of ported numbers.

The Director does not see a strong case for requiring mobile fax and data numbers to be made portable, because these numbers are seldom used for incoming calls. Operators may however make these numbers portable if they wish.

3.3 Questions

- Q3.1** Are there any good reasons not to use the routing rules established in D1/99 for FMNP?
- Q3.2** Do you agree that it is desirable for *eircom* to provide a default routing service for other operators in respect of FMNP?
- Q3.3** Do you agree that it is essential to support SMS to ported numbers?
- Q3.4** Do you agree that it is essential for the porting process to support parallel porting of mailbox numbers?
- Q3.5** Do you agree that it is not necessary to require fax and data numbers to be portable?

4. The porting process

4.1 Requirements carried forward from D1/99

Whilst some aspects of the porting scenario for mobiles are similar to the scenario for fixed numbers, there are also some important differences:

- Most new mobile accounts are sold through retailers who are in many cases independent of the operators. The potential involvement of retailers in the porting process substantially increases the cost of number portability. Overseas experience, particularly in the Netherlands and UK, shows that involvement of the retailer has made the porting process overly complex and has resulted in unduly slow uptake of FMNP;
- There are pre-pay as well as post-pay customers, and in the case of pre-pay the operators may not know the identity of the customer. Pre-pay accounts require a different system of authentication for the porting request;
- There is a strong user requirement to activate new accounts within a few hours. Together with the speed of the current SMNP process⁴, this creates a need for a much faster process than is common for fixed line portability.

These differences call for a process that is significantly different from that for fixed portability, especially in the approach to how number portability orders are taken and validated. Notwithstanding these differences, the subsequent parts of the process are very similar to those for fixed numbers. In particular, the Director continues to believe that the consumer requires a “one-stop-shop” process (see Decision Notice D1/99), where the recipient operator handles the order and forwards the request for closure of the old account to the donor. The arrangements for applying onward routing and updating of the number portability database are also unchanged.

4.2 Additional requirements

The Director commissioned Ovum to propose a framework for implementation of FMNP in Ireland. The discussion document which Ovum has produced is published in conjunction with this consultation paper. It contains a number of recommendations supported by detailed analysis, most of which the Director is minded to adopt. In particular the Director proposes to endorse the following key recommendations:

a) The process of porting should not be dependent on the retail sales process.

A customer wishing to port should be able to first open a new account in the normal way, including the allocation of a new number from a number block of the new operator. It should then be possible to ask the new operator to have the old number ported and the new number withdrawn, without any involvement of the retailers.

This two-stage process is beneficial because it avoids the costs, complexity and delays that result from involving the retailer in the process. It also ensures that FMNP can be applied to pre-pay customers where the retailer

⁴ With SMNP the porting of the subscriber number occurs within 2 hours.

has little involvement with the customer, merely selling a pre-packaged phone which has already been allocated a number.

It is important to note that although the process is not dependent on the retailer, the retailer may assist the user in making the porting request at the point of sale, with the result that both stages of the process can be seamless from the user's perspective.

b) The right to port a number should be established primarily by checking that the user has possession of an existing mobile phone which uses that number.

For fixed network number portability, validation is achieved by matching information on the customer's Request-to-Port form with customer data already held by the donor operator. However, this method suffers many problems of matching names and addresses, so that portings can take many days to complete. Furthermore, this form of validation is impossible for pre-pay customers because the donor operator does not have the necessary customer information.

The solution proposed by Ovum is relatively simple. Validation is based on confirming that the handset in the customer's possession actually operates with the number which the customer has requested to port. Such a validation may be achieved in a number of ways:

- A call **from** the mobile, where the CLI shows the number to be ported;
- A call **to** the number to be ported, establishing that the user has possession of a mobile using the number;
- A recent bill showing the number to be ported.

One possible problem with this approach, but only for post-pay customers, occurs when the customer in possession of the handset is not the account holder, i.e. is not the one who has the authority to request number portability⁵. The Director considers that this possibility can adequately be dealt with by:

- The recipient operator confirming with the customer that he or she is the account holder, before progressing with the port. This reminder should help to prevent a customer inadvertently porting a number without authority;
- The recipient operator immediately reversing the porting process in the case of unauthorised ports, upon instruction from the account holder via the donor operator;
- The donor operator charging the recipient for any unauthorised ports which have to be reversed. The recipient may also pass this charge onto the customer in order to deter fraudulent porting requests.

⁵ This is not an issue for pre-pay customers because there is no registered account holder.

- c) *The donor operator should accept a number portability order from the recipient operator for the purposes of both porting the number and closing the account with the customer.*

This requirement is essential to ensure that the porting process is both speedy and reliable. The donor operator should not refuse porting on the grounds of:

- The customer having an outstanding debt;
- The customer not having completed the minimum contract period;
- The customer's handset being SIM-locked so that it can only work on the donor operator's network.

However, the Director recognises that in each of these situations the customer has a legitimate obligation to the donor network that will remain in place even after the number has been ported. The customer should continue to be liable for any outstanding debts and to fulfill its contractual obligations to the donor operator.

Nevertheless, as the use of a particular number is not central to these obligations, the existence of debts and/or contractual obligations is no reason to refuse a request for number portability.

In the case where a handset is SIM-locked, the customer should be free to port the number to the recipient operator even if the handset remains locked to the old network. However, unless the customer pays to unlock the handset he or she will need to obtain a new handset for use on the recipient operator's network.

Subject to the feedback from this consultation, the Director proposes to incorporate these key requirements into a Decision Notice. She will then instruct the industry FMNP committee to draw up a full specification for the porting process that meets these requirements.

The Director is also persuaded of the merits of several other more detailed proposals in the Ovum discussion document. In particular she has noted the length of time that porting takes in the UK and the Netherlands, and the consequent low level of portings compared to Hong Kong, which has a much quicker procedure. She therefore intends to monitor closely the quality achieved in the porting process in Ireland.

She would appreciate the industry's views on the proposals put forward by Ovum that:

- *Each operator should establish a number portability order centre where orders can be placed by telephone⁶. Porting should be available 24 hours a day, but the service centres may themselves be active for order-taking during a more restricted period (e.g. 07:00-21:00 on weekdays and 09:00-19:00 at weekends). Users should be able to order either immediate porting (as soon as possible and with a target for completion within two hours) or*

⁶ It might also be possible to order FMNP via the Internet if suitably robust validation procedures are achieved.

deferred porting (to be completed within two hours of the times of their choosing);

- *Where a number allocated for a new account is replaced by a ported number, the replaced number should within 2 months be released for quarantine and subsequent re-use;*
- *Each operator should establish test facilities where:*
 - *A user can check which number is being presented as CLI in its outgoing calls;*
 - *A user can be called on the ported number.*
- *Recipient operators should report quarterly on the elapsed times between moment of number portability request and moment at which each number becomes active on the recipient network with onward routing applied on the donor network;*
- *Block and donor operators should report quarterly on their response times in applying or changing onward routing in response to portability requests.*

4.3 Questions

- Q4.1** Do you agree that the porting process for FMNP must support pre-pay as well as post-pay customers, and ought to be no more complex for the user than the current SMNP solution?
- Q4.2** Do you support the proposal to make the porting process independent of the retail sales system (i.e. the so-called 2-stage porting process)? Can you foresee any problems with this approach?
- Q4.3** Is there any alternative approach which nonetheless allows pre-pay customers to enjoy the benefits of FMNP?
- Q4.4** Bearing in mind the simplicity (and corresponding economic benefits) of this approach, do you agree that having possession of a mobile which uses the relevant number is sufficient validation of a customer's authority to port that number?
- Q4.5** Can you think of any situations where proceeding on this basis might cause problems?
- Q4.6** Do you agree that the porting process can and should be handled independently of any outstanding debts, contract obligations or SIM-locking that the customer may have in place with the donor operator?
- Q4.7** Do you feel any restrictions need be placed on the date and time for which porting is requested? If so please state them.
- Q4.8** What is your opinion on the other process proposals which Ovum has made in detail in the discussion document and which are presented in this section?

5. Charging arrangements

5.1 Requirements carried forward from D1/99

The Director has reviewed the charging arrangements for fixed network number portability which she made in Decision Notice 99/01. She concludes that the existing requirements form an appropriate framework for FMNP charging, and accordingly she proposes to retain the same requirements for FMNP. These are as set out below.

5.1.1 Set-up costs

Each operator should meet its own system set up costs when making its network and support systems FMNP capable.

5.1.2 Costs of the porting transaction

The donor operator may levy a transaction charge that recovers its administrative transaction costs from the recipient operator. The transaction charge should only recover the costs of an efficient operator using an efficient technical solution.

The transaction charge should exclude: -

- *costs of changes in routing, since correct routing for calls originating on its own network is the operator's responsibility.*
- *costs which the donor operator would incur if it were to relinquish the customer to another operator without FMNP. Such costs are part of the process of losing a customer but not additional costs generated by FMNP.*

All originating operators should bear their own costs for changes to routing data, including any changes made by other operators on their behalf.

The charges of donor operators should be subject to approval by the ODTR⁷.

5.1.3 Additional conveyance charges

The additional conveyance costs include the cost of adding a routing prefix (the re-routing element) and the cost of any additional routing between networks (the conveyance element) that may be required for a call to be routed to a ported number.

The originating operator should bear any additional conveyance costs from the date of introduction of FMNP. This requirement applies to both fixed and mobile operators.

The originating operator should have the freedom to recover these costs from its customers.

All other operators which incur additional conveyance costs should recover them through charges on the originating operator.

⁷ Under present EU interconnection rules the ODTR can only regulate the charges of operators with Significant Market Power. However, under the proposed Directive on Universal Service and User Rights the ODTR would be able to regulate the charges of all operators for number portability.

The conveyance element of any additional conveyance charges should be set so as to recover costs.

The re-routing element of additional conveyance charges should be cost-based for eircom⁸ while all other operators must negotiate charges between themselves.

5.2 Questions

<p>Q5.1 Are you aware of any difficulties that may arise in applying the charging arrangements of document ODTR 99/01 for FMNP? If so, please identify them and suggest any solutions you can envisage.</p>
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⁸ Because of the requirement for *eircom* to provide other operators with a default routing service for calls to ported numbers.

6. Number portability database

A national reference database to support number portability primarily records the relationship between the ported number and the identity of the network that is currently serving that number. Such databases are not directly involved in the routing of calls. Each operator will have its own operational database(s) which include(s) copies of the information held on the reference database for this purpose.

In Decision Notice D1/99, the ODTR accepted the merits of using an independent national reference database and decided it should be connected to the reference databases of the operators using a common communications infrastructure. In practice, the communications infrastructure is a dial-in information resource, though with additional extensions it could also support both information exchange between donor and recipient and subsequent broadcasting of changes to all operators.

The national reference database is currently operated by Cap Gemini under contract to the ODTR.

The Director believes that the national number portability reference database is working satisfactorily and proposes that a similar solution should be adopted for FMNP. For simplicity the Director proposes extending the existing database by inclusion of numbers ported under FMNP, at least until the existing Cap Gemini contract expires. Thereafter an open tendering process may be used to adopt a longer-term solution.

6.1 Questions

<p>Q6.1 Are you aware of any difficulties that may arise from extending the existing fixed network number portability database by inclusion of FMNP porting information? If you would prefer a different solution please specify it and provide reasons for your preference.</p>

7. Implementation timetable

As proposed in Decision Notice D1/01, the Director plans to establish a committee to develop the functional specifications and porting procedures for FMNP. The ODTR will either chair this committee or appoint an independent chairperson. However, the work of this committee, especially in the commercial area, will need to be supplemented by bilateral negotiations between the operators.

The Director proposes to set deadlines for completion of key tasks by the committee. If an issue cannot be resolved within the deadline, the ODTR will make an interim determination.

The Director proposes the following timetable for implementation of FMNP:

- June 2001 for publishing the Decision Notice and establishing an industry committee;
- October 2001 at latest, for completing the functional specifications of both FMNP routing rules and the porting process;
- Live implementation of FMNP as soon as possible and in any case no later than Q4/2002.

It is not certain how long it will take to implement FMNP following the completion of the functional specifications. In the consultation on Mobile Numbering and Mobile Number Portability (D1/01) the ODTR suggested, on the advice of Ovum, that this phase of implementation could take around 12 months⁹, and hence that October 2002 would be a reasonable target date for FMNP. There may nevertheless be scope to bring this date forward, given that technical solutions for FMNP are readily available and given the relative simplicity of the porting procedures which Ovum is now recommending. The Director would appreciate further industry feedback on this point.

7.1 Questions

Q7.1 What scope do you think there might be for an implementation target date earlier than October 2002?

⁹ The overall implementation period of 15 months comprised 3 months for preparing the specifications and 12 months for implementing them.

8. Glossary and Explanation of Terms Used

Block operator:	The mobile network operator ¹⁰ which was originally allocated the number block containing the number to be ported. Calls are routed to the block network unless or until the called number is identified as a ported number.
CLI:	Calling line identification.
Donor operator:	The mobile network operator from which the customer requests to port his/her number. In the first instance of porting the donor operator will be equivalent to the block operator. For subsequent portings the donor operator and the block operator may be different.
FMNP:	Full Mobile Number Portability – in which the subscriber’s complete national telephone number remains unchanged when he/she changes operator.
Originating operator:	The operator with which the calling subscriber initiates the call (i.e. the operator which receives call revenue from the calling party).
Recipient operator:	The mobile network operator to which the customer requests to port his/her number.
SIM:	Subscriber identity module.
SMNP:	Subscriber Mobile Number Portability – in which only the subscriber number part (i.e. excluding the 08X code) – of the subscriber’s national telephone number remains unchanged when he/she changes operator.
SMS:	Short message service.

¹⁰ Throughout this document the term “mobile network operator” is taken to include both network operation and service provision. Although these two elements can be logically separated, in practice they are normally performed by the same organisation.