



Office of the Director of
**Telecommunications
Regulation**

Mobile Numbering and Mobile Number Portability in Ireland

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Oifig an Stiúirthóra Rialála Teileachumarsáide
Office of the Director of Telecommunications Regulation
Abbey Court, Irish Life Centre, Lower Abbey Street, Dublin 1.
Telephone +353-1-804 9600 *Fax* +353-1-804 9680
Web: www.odtr.ie

CONTENTS

| | |
|---|-----------|
| 1. INTRODUCTION | 3 |
| 2. MOVING TO FMNP..... | 4 |
| 3. ANALYSIS OF OBJECTIONS TO THE COST BENEFIT ANALYSIS | 5 |
| 3.1 THE APPROACH TO THE CBA | 5 |
| 3.2 THE RISKS ASSOCIATED WITH AN EARLY IMPLEMENTATION OF FMNP | 5 |
| 3.3 THE TERMINATION VALUES IN THE CBA..... | 6 |
| 3.4 ESTIMATING THE TYPE 1A BENEFITS | 7 |
| 3.5 ESTIMATING THE TYPE 2 BENEFITS | 8 |
| 3.6 INCENTIVES FOR LOWER CALL TERMINATION PRICES | 10 |
| 4. ENSURING AN ADEQUATE SUPPLY OF MOBILE NUMBERS..... | 11 |
| 5. THE WAY FORWARD | 13 |
| 6. CONCLUSION | 15 |
| 7. GLOSSARY AND EXPLANATION OF TERMS USED..... | 15 |

1. Introduction

In mid November the Director published a consultation paper, document ODTR 00/86, in which she sought views on the findings of an Ovum study on mobile numbering and number portability in Ireland. In its report Ovum reached seven main conclusions:

- it is in Ireland's best economic interests to move from Subscriber Mobile Number Portability (SMNP) to Full Mobile Number Portability (FMNP) as soon as practicable. Ovum based this conclusion on a cost benefit analysis (CBA) which it carried out. This indicated that:
 - the net present value to Ireland of moving FMNP is £129 million. This is significantly greater than the net present value (£83 million) of the SNMP currently used in Ireland;
 - varying the key input parameters to this CBA across a credible range sometimes narrows but does not eliminate this difference;
 - each year of delay in moving from SMNP to FMNP reduces the net present value of FMNP by between £4 million and £5 million;
- it is important that operators should be given enough time to implement a low cost, speedy and reliable porting process to support FMNP. Otherwise the benefits of moving to FMNP could be lost;
- it should be possible for mobile operators to implement FMNP to this standard by the beginning of 2003 or earlier;
- without action, the current arrangements for mobile numbering in Ireland could reach exhaustion by mid to late 2002;
- there is a range of options - both short term and long term - for relieving this number exhaustion. The Ovum document identified seven options (See Section 7 below) which it then evaluated;
- the long term option of moving from seven-digit to eight-digit subscriber numbers while continuing to use the existing 085, 086, and 087 ranges (i.e. Option 2) would lead to unacceptably high change costs, especially for users, and should be rejected. Ovum estimated these costs to have a net present value of £65 million;
- Ovum recommended taking steps towards the implementation of Option 6 or Option 7. This would mean implementing full national dialling of all mobile calls to release the 0 and 1 ranges behind the existing 085, 086, 087 codes, followed by a move to FMNP.

The Director received five responses to her consultation on this report - from Eircell, eircom, ESAT Digifone, Imagine and Meteor. She sets out below summaries of the responses, her analysis of these and the decisions she is now taking.

The Director wishes to thank those who contributed to the consultation. With the exception of items marked confidential, these responses are available for inspection at the ODTR's office in Dublin.

2. Moving to FMNP

Q1.1: Is it in Ireland's best economic interest to move from SMNP to FMNP?

Two respondents answered this question with an unqualified yes; the two incumbent operators objected strongly to some of the assumptions and conclusions of Ovum's CBA; and the fifth respondent expressed reservations about the CBA.

The Director has investigated the objections to the cost benefit analysis in detail. Her own analysis is set out in Section 3. She concludes that the objections do not invalidate Ovum's analysis that SMNP provides significantly less benefit than FMNP and that it is in Ireland's best economic interest to move from SMNP to FMNP. This conclusion is reinforced when she also considers the options for preserving an adequate supply of mobile numbers (see section 4). If FMNP is not implemented, then it would be difficult to maintain SMNP in the longer term without incurring the costs of a major number change.

Q1.2: Is it important that operators should be given enough time to implement a low cost, speedy and reliable porting process to support FMNP?

There was general agreement from the four respondents who commented on this question, on the importance of not rushing an effective implementation of FMNP, which should offer users a fast and reliable service similar to that which they receive with SMNP.

The Director supports this position.

Q1.3: Is it possible for the operators to implement FMNP by the beginning of 2003 (or bring it forward to mid 2002)?

Q2: Can you suggest how the industry may improve on the implementation times set out in the Ovum report?

Respondents were divided on these two questions. One respondent cannot see any technical reasons to delay implementation beyond mid-2002; another believes that implementation before the start of 2003 is impossible and that the 15-month implementation period suggested by Ovum is overly optimistic.

Two operators commented that it is not possible to answer these questions at this stage. One of these suggested that it is important to carry out the work needed to establish a timetable for implementation. Both incumbent operators also stressed the need to use standard vendor solutions where relevant and not one-off or in-house solutions.

Based on these responses, the Director believes that: -

- there is a need to establish a specification and timetable for how best to implement FMNP in the near future;
- it is prudent and reasonable to set Q4 2002 as an indicative date for FMNP introduction;
- preparatory work should proceed on this basis.

Section 5 sets out the Director's full position on the best way forward.

3. Analysis of objections to the cost benefit analysis

The two incumbent mobile operators raise a number of objections to Ovum's cost benefit analysis (CBA).

The Director considers the main objections in this section.

3.1 The approach to the CBA

One operator objects to the comparisons which Ovum makes in its CBA. It argues that the CBA should estimate net present value or cost of FMNP relative to SMNP, rather than the net present value of each relative to a base line in which there is no number portability.

The Director believes both approaches show that user and competitive benefits flow from both SMNP and FMNP but the Ovum approach has the benefit of evaluating a wider range of decisions by highlighting the value of SMNP to Ireland.

3.2 The risks associated with an early implementation of FMNP

Both incumbent operators assert that Ovum has failed to take full account of the risks and costs of implementing FMNP early. In particular they argue that:

- the benefits of implementing FMNP are relatively small and could be outweighed by the additional costs which an early implementation of FMNP would generate;
- there are risks of technical inconsistencies with other member states and no opportunity to learn from the mistakes of others in implementing FMNP in Ireland.

The Director's analysis of these arguments is as follows:

- Ovum estimated the economic cost to Ireland of delaying FMNP implementation is between £4 million and £5¹ million for each year of delay and this compares with Ovum's estimate of £5 million for the total one-off cost of implementation;
- the bulk of this implementation cost is generated through necessary changes to customer support systems, required to support an efficient porting process. Such work is largely country-specific; so delayed implementation is unlikely to reduce implementation costs significantly;
- there are ETSI standards in place which deal with the main networking aspects of mobile number portability;
- by early 2001 four EU member states should already have implemented FMNP and by March 2002 up to ten EU member states, plus Norway and Switzerland are likely to be in this group - Figure 3.1 illustrates. It tabulates the dates by which FMNP is mandated for mobile operators in various Western European countries. Given the likely timetable for implementing FMNP in Ireland, the Director believes there is more than adequate opportunity for Irish operators "to learn from the mistakes of others".

With this analysis in mind the Director considers that any additional costs which might arise from implementing FMNP in Ireland before the end of 2002, rather than at

¹ These original figures were later corrected to a new value of £2.9 M – see Section 3.4.

a later date, are insignificant when compared with the economic costs to Ireland of such a delay.

Furthermore, the Director is acutely aware that the emergence of any perception of Ireland lagging in the introduction of important telecommunications initiatives would represent an intangible but real disadvantage to the country and to the Government's strategy of promoting Ireland as a leading economic and business centre.

Figure 3.1 Dates mandated for FMNP in European Countries

| Country | Date FMNP mandated | Comment |
|-------------|--------------------|--|
| Belgium | 1/2001 | |
| Denmark | 1/2001 | - |
| France | 1/2001 | - |
| Germany | 2/2002 | - |
| Italy | 7/2001 | Operators believe deadline is not achievable |
| Netherlands | 1/1999 | Implemented; difficulties for some operators |
| Norway | 9/2001 | Recommendation only |
| Portugal | 1/2002 | - |
| Spain | 11/2000 | Implemented |
| Sweden | 9/2001 | - |
| Switzerland | 3/2000 | - |
| UK | 1/1999 | Implemented |

3.3 The termination values in the CBA

One operator objects to the OVUM CBA on the grounds that the termination values associated with cost and benefit streams at the end of the ten-year period of explicit CBA are "unexplained, dubious and arbitrary".

The Director finds that:

- the termination value is explained in Section 2.1 of the Ovum report. To quote:

"At the end of this 10 year period we calculate a termination value. To do this we assume that each cost or benefit stream will continue at its Year 10 value to infinity, discount this ongoing stream at the selected discount rate, and sum over the discounted values from Year 10";
- Ovum advise that they used this approach in 1999 in three CBAs for the UK regulator Oftel. The approach was accepted by both Oftel and the UK industry;
- As Ovum's sensitivity analysis shows (in Figure 2.10 of its report), increasing the discount rate used from 10% to 15% greatly reduces termination values, but leaves the ratio of the net present values of SMNP and FMNP virtually unchanged. In other words, FMNP remains of significantly greater economic value to Ireland than SMNP.

The Director concludes that:

- it is important to include termination values in any CBA to take full account of ongoing cost or benefit streams;
- the Ovum approach offers a rational and robust way to do this.

3.4 Estimating the Type 1A benefits

One operator believes that Ovum overstates the Type 1A benefits² from number portability in the CBA, quoting three main reasons for this belief:

- the costs avoided by an SME in using number portability are an over-estimate. For many SMEs the avoided costs are significantly lower than those used by Ovum in its cost benefit analysis;
- the average costs are estimated for **SMEs** but applied to **all post-pay subscribers** who currently use SMNP. This overestimates the benefits, since post-pay subscribers include personal subscribers - for whom avoided costs are significantly lower;
- the avoided costs will reduce over time as users take steps to reduce them in other ways³. Ovum assumes that these costs are constant over time.

The Director's response to these points is as follows:

- the estimates of avoided costs are based on surveys carried out by Ovum in the UK. As such, they represent the average cost avoided by a mobile subscriber working in an SME. By definition, the average includes both users for whom the avoided costs are significantly below the average and users for whom they are significantly above the average;
- the Director accepts the view that Ovum's estimates of the average avoided costs of post-pay number portability users are too high. Ovum discounted the average costs per SME mobile user by 25% from the UK levels⁴ but the Director considers that a higher degree of discount is more appropriate. Fifty percent of post pay customers are SME or SOHO users, who avoid costs through NP at the full UK level and the remaining 50% is assumed to avoid costs at just 20% of the UK level – thus placing total cost avoidance at 60% of UK levels. This represents a revised discount of 40% (instead of 25%) from UK levels;
- the Director also accepts that avoided costs will reduce over time but believes that these reductions will be modest. Users will still need to carry out major exercises to change signage and inform their customers. She has therefore asked for an additional discount of 10% to be added to allow for this factor.

Given this analysis the Director has had the CBA re-run by OVUM with the Type 1A benefits discounted from the UK levels by 50% (rather than the 25% used in the original CBA). Figure 3.2 shows the results and indicates that:

- the economic gains of moving to FMNP are reduced, but remain substantial;

² See Section 7 for explanation of benefit types.

³ For example by producing letterheads and brochures in-house or by informing customers and suppliers of number changes via email.

⁴ As estimated in the Oftel report on mobile number portability in the UK, July 1997.

- the cost of delaying FMNP remains substantial when compared with the one-off implementation cost of FMNP.

Figure 3.2 Impact of discounting Type 1A benefits by 50%

| Item | Base case scenario | Type 1A benefits of post-pay users at 50% |
|--|--------------------|---|
| NPV of SMNP | £83 M | £52 M |
| NPV of FMNP | £129 M | £84 M |
| Cost of one year delay in implementation of FMNP | £5 M | £2.9 M |

3.5 Estimating the Type 2 benefits

Both incumbent operators question the scale of Type 2 benefits² shown in the CBA. They raise a number of objections to Ovum’s estimates, which the Director considers in turn below.

3.5.1 The price competitiveness of the Irish mobile services industry

One operator questions whether there is scope, as Ovum asserts, to make the Irish mobile industry more price competitive. Based upon its own study, this operator claims that its post-pay prices are fifth cheapest and its pre-pay prices seventh cheapest in the EU. At the same time it questions the source of Ovum’s assertion that mobile service prices in Ireland have fallen only 7% per annum in the last two and a half years, whilst those in the UK fell 13% per annum.

The Director has investigated these points. She finds that:

- the international ranking of mobile prices varies considerably according to which studies are consulted and what methods are used to compare prices. Independent studies, which used different comparison methodologies from that of the Irish mobile operator’s own study, rank Ireland as one of the more expensive countries in the EU⁵;
- Ovum’s assertion that mobile prices in Ireland are falling at only 7% per annum is based on figures supplied by Eircell, for both Eircell and Digifone services, in its response to the consultation document on the regulatory framework for access to the mobile market, ODTR 00/32 published in May 2000;
- at \$500 p.a. the average revenue per user for Irish mobile operators is, according to Ovum⁶, 2% above the average for operators in Western Europe. Strategy Analytics believe the gap is rather wider, at 7%⁷.

⁵ Although there are other references, the EC’s “Sixth Report on the Implementation of the Telecommunications Regulatory Package”, adopted on 7 December 2000, presents very recent graphical information ranking Ireland as the most expensive country, based on average mobile monthly business profile and second most expensive, based on average mobile monthly personal profile.

⁶ Ref the mobile@Ovum service.

⁷ See Strategy Analytics publication “Western European Cellular Market Forecasts – 2000 to 2005”, August 2000.

Based on this, and evidence gathered from other consultations, the Director remains convinced that there is considerable scope to increase price competitiveness in the Irish mobile services industry beyond its current level.

3.5.2 The scope to cut mobile prices in Ireland

Another operator makes a related point. It argues that there is less scope to cut mobile service prices in Ireland than in most other countries of the EU because population density is lower and hence unit costs are higher in Ireland.

The Director accepts that population density does affect the unit costs of provision. But she also notes that mobile prices in Finland, with a population density at less than 30% of that in Ireland, are significantly lower than Irish prices⁸.

3.5.3 The user base for estimating Type 2 benefits

Another operator argues that Ovum should calculate the economic benefits of price reductions only across post-pay subscribers and not across all users. The Director has confirmed that this is, in fact, what OVUM did.

3.5.4 The link between a move to FMNP and price reductions

The same operator argues that “there appears to be no link between a move to FMNP and a reduction in the price of calls”. The Director believes, based on the following analysis, that such a link exists:

- a significant number of post-pay mobile users do not consider changing operators because, even with SMNP, this would incur major costs in terms of informing callers and lost business. A number of studies⁹ show that only 10% of businesses are prepared to change service providers for a 10% price reduction if there is no number portability but that this proportion rises to 40% with full number portability. Much of this difference reflects the high cost of signage changes and lost calls. SMNP offers only a partial solution to these problems;
- users in this segment of the market rely heavily on mobile phones and generate high volumes of mobile traffic and consequently mobile operators are especially keen to retain them as customers;
- on the other hand, introducing FMNP significantly reduces the barriers to such users changing mobile operators and as a result mobile operators fight harder to retain these users as customers and - as part of that process - offer lower prices.

3.5.5 The rate of decline of prices and costs

The same operator argues Ovum is wrong to assume, in estimating Type 2 benefits, that post-pay prices and costs will continue to decline at 7% per annum. It argues that such reductions result from economies of scale and once the market is saturated reductions will cease.

⁸ See for example *Cellular Mobile Pricing Structures and Trends*, OECD, May 2000.

⁹ For example, Ovum’s ‘Number Portability – Strategies for Market, Technical and Regulatory Success’ 1996. Ovum quote figures from studies conducted in 1994/95 by OFTA, MCI Worldcom, Pacific Bell and the UK Consumer Association.

The Director believes it is reasonable for Ovum to use the 7% per annum reduction in its costs benefit analysis, given that:

- the rate of decline in prices in other countries, like the UK, is significantly higher than it is in Ireland;
- the rate of decline in costs is driven by competitive pressures and the price performance improvements in equipment as well as economies of scale.

It is also worth noting that the effect of reducing the 7% pa price and cost decline assumption is to increase the Type 2 competitive benefits. For example a 3% pa decline rate leads to an increase in the NPV of Type 2 benefits from £43m to £58m

3.5.6 Conclusions on Type 2 Benefits

Overall the Director believes that Ovum's estimates of the Type 2 benefits of a move to FMNP are not unreasonable. In particular she notes that:

- Expectation of a 3% price cut, directly or indirectly resulting from a move to FMNP, is also not unreasonable given that:
 - the UK saw a 40% cut in prices in the year when the duopoly there was broken;
 - Hong Kong saw a 60% cut in prices in the year FMNP (and new entrants) were introduced there;
- the Ovum estimates of Type 2 benefits only considered the impact of price reductions, whereas increases in innovation or cost efficiency can also be expected from fiercer competition.

3.6 Incentives for lower call termination prices

One of the operators argues that a move to FMNP will reduce incentives for mobile operators in Ireland to lower their call termination prices. This argument is based upon analysis carried out by UK mobile operators when the competition authority there¹⁰ investigated the price of fixed to mobile calls two years ago. It relies on the way in which interconnect charging for calls to mobile services is currently carried out in the UK.

The Director remains unconvinced by this argument.

In the short to medium term there seems to be no overall market incentive for mobile operators to reduce their call termination charges, regardless of whether FMNP is introduced or not. It is also not clear that such an incentive will emerge in the longer term.

¹⁰ formerly the Monopolies and Mergers Commission

4. Ensuring an adequate supply of mobile numbers

Q3: Do you agree that Ovum's projections of demand for mobile subscribers and numbers are reasonable?

There is broad agreement, among the four respondents who answered this question, that the Ovum projections reflect a maximum demand scenario rather than a most likely demand scenario, and they are reasonable projections for analysing number exhaustion issues.

The Director agrees.

Q4: Do Ovum's options for relieving mobile numbering exhaustion cover all reasonable approaches?

Again there is broad consensus among the four respondents who answered this question that the Ovum analysis of options is comprehensive. However, one operator suggested that the ODTR should consider variants on the Ovum options, in which:

- the quarantine period between pre-paid numbers ceasing service and being reused is reduced from 12 to 6 months;
- the requirement to preserve SMNP for pre-pay numbers is dropped.

In the light of these responses the Director:

- wishes to proceed on the basis that there are no fundamental new options to consider;
- welcomes and endorses the idea of reducing the quarantine period on returned pre-paid numbers from 12 to 6 months;
- is reluctant to discontinue SMNP on pre-paid numbers unless it is absolutely necessary. Such a move is irreversible. In particular, she will defer making a definitive decision on abandoning SMNP for new pre pay numbers in the 0 and 1 ranges until the last moment – which is now foreseen to be 1 July 2001. In principle, she is prepared to discontinue SMNP for new pre-pay subscribers from that date, if number consumption and demand forecasts continue at their present levels.

Q5: Which of the options considered by Ovum (for relieving numbering exhaustion) offers the best solution with the lowest costs to Ireland as a whole?

Of the four respondents who answered this question, three agree that Option 7 is best. The fourth favours Option 6, arguing that this option:

- provides adequate additional capacity until FMNP is implemented;
- does not impose the unnecessary restrictions on customer porting that Option 7 imposes.

The two incumbents, although they support Option 7 as the best way forward, questioned Ovum's estimate of £65 million implementation cost for Option 2. One of them has made a revised estimate of £40 million and believes that a more detailed investigation could lead to significantly lower estimates.

In the light of these responses the Director believes that the right way to ensure an adequate supply of mobile numbers is to:

- immediately implement Option 1A, which is the first stage of both Options 6 and 7;
- review and decide whether to proceed to Option 6 or Option 7, by 1 July 2001.

She sets out her position following this consultation, and her intended path, in more detail in the next section.

5. The Way Forward

The Director has now identified that the following factors are relevant to her decision on how to proceed:

- it is the Director's duty to ensure an adequate supply of mobile numbers at all times;
- the preferred choices, Options 6 or 7, rely on the eventual implementation of FMNP to ensure adequate long term supply of mobile numbers;
- additional to the Director's powers under the Licencing Directive and the 1983 Act¹¹, the market will be aware that new regulatory legislation is being prepared both at national and EU level. The draft Universal Service and Users' Rights Directive is available and includes specific provisions for mobile number portability. It is expected therefore that mobile number portability will be explicitly mandated in Ireland in the course of 2002. This is a further reason for setting arrangements in train now so we can have a smooth introduction before the end of 2002.

Given these factors and the results of this consultation, the Director has made the following decisions:

Decision 5.1

Operators will be required to implement Option 1A immediately, so as to make the 0 and 1 mobile number ranges available by July 2001 for subscriber numbering;

Decision 5.2

She has decided that the newly released 0 and 1 ranges of mobile numbers will be brought into use from 1 July 2001. She will decide on or before that date whether they are to be used only for pre-pay subscribers, discontinuing SNMP on these ranges (Option 7), or if they may be used for all subscribers, retaining SNMP (Option 6).

Note: Given Ovum's projections of demand and the preferences expressed in the consultation, she is currently minded to implement Option 7, which involves abandoning SMNP for new pre-pay subscribers¹², rather than Option 6 which preserves this possibility. But as she is also aware that these projections represent an upper limit rather than a best estimate of demand, she will defer the definitive decision on which of these options to implement until she sees how number consumption and demand forecasts develop over the coming months.

Decision 5.3

She has decided to reduce the required quarantine period on returned pre-paid mobile numbers from 12 to 6 months, from July 2001;

¹¹ Licencing Directive means Directive 97/13/EEC and the 1983 Act means the Postal and Telecommunications Services Act 1983 (as amended). The Director's legal advice is that she has the statutory power to mandate FMNP under these instruments.

¹² This also removes the option of SMNP from new pre-pay customers who later switch to post-pay contracts.

Decision 5.4

In the light of the analysis set out in Section 2 she has decided that:

- there is a need to establish a specification and timetable for how best to implement FMNP in the near future;
- it is prudent and reasonable to set Q4 2002 as an indicative date for FMNP introduction;
- preparatory work should proceed on this basis.

Decision 5.5

She has decided to establish a working group, chaired by the ODTR and with members drawn from the industry, to carry out preparatory work for implementation of FMNP.

Note: The working group would, by October 2001, establish a high level specification for the porting and routing processes, define a relative timetable¹³ for possible implementation, and agree the charging principles to be used. The Director believes that such preparatory work is essential if the industry is to achieve the same speed and reliability for porting under FMNP as it already provides under SMNP and, at the same time, meet the timescales that may be imposed by the anticipated EU mandate.

To facilitate dialogue within the working group, the ODTR will provide a discussion document which will, inter alia, provide some background on the current status of Number Portability in Ireland, consider lessons to be learnt from other countries, and offer suggestions for charging and routing rules and porting procedures.

Further to these decisions, the Director will also require the ODTR to continue to monitor the number capacity that remains in existing ranges and take action as necessary, taking into account the results of this and other mobile-related consultations.

¹³ This means a manageable timetable referenced to a starting date which will be decided at a later time by the Director.

6. Conclusion

Having carefully considered all responses to this consultation, the Director has arrived at a number of decisions and a course of action in respect of mobile numbering and number portability. These decisions take into account the views expressed in the consultation, the near certainty of EU legislation mandating FMNP in the near future, the status of the mobile numbering resource and pressures on it, and the economic arguments for and against FMNP.

Her primary decision to move forward towards FMNP within a reasonable timescale and to immediately initiate the preparatory steps towards this, is a pragmatic solution intended to best meet the needs of the consumer, while also facilitating the mobile operators.

The main parties affected by the introduction of FMNP are now invited to participate actively in preparing the ground rules for introduction of FMNP as soon as possible. The Director foresees interest in the working group from all parties who expect or hope to become 3G or virtual operators, in addition to the existing mobile operators.

7. Glossary and Explanation of Terms Used

| | |
|--------------|---|
| CBA: | Cost Benefit Analysis |
| FMNP: | Full Mobile Number Portability – in which the subscriber’s complete national telephone number changes when he/she changes operator. |
| SMNP: | Subscriber Mobile Number Portability – in which the subscriber number part but not the 08X code – of the subscriber’s national telephone number changes when he/she changes operator. |

Types of Benefits: Figure 2.1 of the OVUM Report, supporting ODTR doc 00/86 is repeated here:

| Type of benefit | Applies to | Net benefit |
|-----------------|--|--|
| 1A | Users who switch operator whether or not there is NP | Avoided costs of a number change: informing users; changing signage (e.g. signs, letterhead); lost calls less Cost of porting; Additional cost of conveying calls to ported numbers |
| 1B | Users who switch operator only when there is NP | Benefits of moving to a new operator (e.g. lower prices, better service) less Cost of changing network without changing number; Cost of porting; Additional cost of conveying calls to ported numbers; Loss of profits to operators |
| 2 | All users | Benefits of fiercer competition: lower prices; greater innovation; greater cost efficiency |
| 3 | Callers to mobile users | Avoided cost of: finding changed number updating records/terminal entries |

Options referred to in this consultation:

- Option 1A: remove on-net dialling of subscriber numbers without the 08X code so that the ranges 0 and 1 can be used as 7-digit subscriber numbers
- Option 1B: remove on-net dialling subscriber numbers without the 08X code so that the ranges 0- and 1- can be used as 8-digit subscriber numbers
- Option 2: move to 8-digits for all mobile subscriber numbers
- Option 3: introduce FMNP by the end of 2001
- Option 4: abandon SMNP
- Option 5: open another 08X range from which all operators allocate new pre-pay subscribers numbers.
- Option 6: Option 1A plus, from 1/2003 or earlier, introduce FMNP
- Option 7: Option 1A, using 0 and 1 ranges without SMNP for pre-pay only; then introduce FMNP from 1/2003 or earlier.