



TelstraClear Limited

**Submission on
Local and Mobile Number Portability**

**Response to the Commission's request for
comments on cost apportionment principles**

Public document
(TelstraClear's submission contains no Restricted Information)

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1 INTRODUCTION AND SUMMARY

1. This submission is provided in response to the Commission's request of 23 June 2004 for comments in relation to:
 - (a) relevant cost apportionment principles for local number portability services (**LNP**) and mobile number portability services (**MNP**) (together, the **Number Portability Services**); and
 - (b) any other matters relating to the application by TelstraClear for determination of the Number Portability Services as designated multinet network services under section 31 of the *Telecommunications Act 2001* (the **Act**).
2. New Zealand has fallen behind comparable jurisdictions in introducing efficient Intelligent Network (**IN**) based portability solutions, particularly for MNP:

Figure 1: International Implementation of Long Term Number Portability

Country	Date introduced LNP by call forwarding ¹	Date introduced LNP by Intelligent Network solution	Date introduced MNP
Singapore	n/a	2000	1997
Hong Kong	1995	1997	1999
UK	1996	continues to use call forwarding ²	1999
US	1996	1998	1998
Australia	1998	2000	2001

3. Although the Ministerial Inquiry identified number portability as a key competitive priority³, it is now:
 - a nearly 3 years since the *Telecommunications Act* was enacted;
 - b nearly 17 months since TelstraClear and the other applicants filed their request for a number portability determination⁴; and

¹ As discussed below, in other countries which continue to utilise call forwarding solutions for LNP, the incumbent, unlike Telecom, is not permitted to recover its additional call conveyance costs in order to provide the incumbent with an incentive to move to an IN solution: e.g. Ireland, ODTR, Introducing Number Portability in Ireland, Decision Notice D1/99, April 1999.

² See discussion below in para 44 that original UK approach of allowing incumbent to recover additional call conveyance is seen as having contributed to slowness in moving to IN solution.

³ Ministerial Inquiry into Telecommunications, para 704.

⁴ 26 March 2003.

- c a year since the Commission's decision to proceed with the number portability investigation⁵,
- yet the availability of number portability to the fixed and mobile end users of New Zealand still seems some time off⁶.
4. Determination of the cost apportionment principles will remove a substantial barrier to the introduction of number portability. Accordingly, TelstraClear welcomes the Commission's intention to proceed with the determination of the cost apportionment principles⁷:
- "The Commission has decided that the most efficient way of dealing with the cost allocation issue is for the Commission to consider the general principles for cost allocation prior to the completion of the codes. The alternative approach of waiting for the codes to be completed and approved before the Commission begins its work has the disadvantage that it will stretch out the time for completion of the entire project."*
5. As set out in this submission:
- a the Commission clearly has the legal power to determine the cost apportionment principles prior to finalisation of the technical solution or quantification of the costs of that solution;
- b determining the cost apportionment principles in advance of the technical solution and the quantification of costs would be consistent with international experience in achieving the most efficient outcome;
- c the cost apportionment issues have been well traversed overseas and regulators have required that each operator should bear its own operator-specific costs of number portability and contribute to common industry costs in proportion to its share of the potential porting population; and
- d such an approach to cost apportionment is consistent with the objects of the New Zealand *Telecommunications Act*. Allowing large incumbent fixed or mobile operators to shift their number portability costs to competitors would impede entry, raise barriers to customers switching to take advantage of better services and prices and encourage inefficient operator systems and procedures.
6. TelstraClear considers that apportioning number portability costs in the manner set out in figure 2 will best promote competition to the long term benefit of end users:

⁵ 29 July 2003

⁶ Telecom executive Simon Moutter has been quoted as saying that fixed network portability is some years off, <http://www.computerworld.co.nz/news.nsf/UNID/C890E62E499ECC34CC256FEB001E2E7>. Teresa Gattung has been quoted as stating that mobile number portability is not a priority and that Telecom has not committed to a timetable and would not say whether she thought mobile number portability would even come about, 2 August 2004 <http://stuff.co.nz/stuff/0,2106,2989242a13,00.html>

⁷ Commission letter to TelstraClear, 23 June 2004, para 3

Figure 2: TelstraClear Proposed Apportionment of Number Portability Costs

Cost category	System Set up	Ongoing maintenance costs	Additional call conveyance costs	Per line costs
Operator specific costs	Each operator bears own costs	Each operator bears own costs	Each operator bears own costs where it is the originating operator and additional call conveyance is within its own network. Originating operator bears costs of additional call conveyance in donor operator's network where donor operator provides re-routing service	Each operator bears own costs
Industry common costs	All participants contribute based on active numbers	All participants contribute based on active numbers	Not applicable	Not applicable

7. The rest of this submission is structured as follows:

Part 2 addresses the Commission's statutory powers to issue a determination before the industry technical process is finalised;

Part 3 identifies the categories of number portability costs which the Commission must decide how to apportion in this determination, discusses the approach taken in other countries to apportioning these costs, and reviews consideration within the Number Administration Deed (NAD) body of cost apportionment issues;

Part 4 discusses why TelstraClear's proposed approach for apportioning number portability costs on the basis of **each operator bearing its own costs** is consistent with the objects of the New Zealand *Telecommunications Act*; and

Part 5 sets out TelstraClear's conclusions.

8. This submission contains no confidential information. TelstraClear is happy for the submission to be made publicly available.

2 THE COMMISSION'S POWERS TO ISSUE A DETERMINATION

9. Telecom makes two related jurisdictional arguments about the Commission's power to make a determination apportioning number portability costs⁸:
 - a the Commission does not have jurisdiction to make a determination on the apportionment of costs independently of the technical solution; and
 - b it is impracticable and inappropriate for the Commission to make a determination on apportioning costs in the absence of a quantification of those costs.
10. The Commission has already decided that it has legal power to make a cost apportionment determination prior to finalisation of the detailed technical solution. TelstraClear agrees with the Commission's interpretation of its powers under section 31(1):⁹

"The Commission has considered the application requirements of section 31 in the context of the general scheme and purpose of the Act and disagrees with Telecom's argument that the Commission must interpret sections 31(a) and (b) on a conjunctive basis. The Commission considers that the Act is sufficiently flexible to allow the Commission to address a number of possible scenarios arising in relation to applications for determinations on multinet network services.

The Commission considers that it is possible to develop a workable cost apportionment formula, which promotes competition in telecommunications markets for the long term benefit of end-users of telecommunication services in New Zealand, although the specifics of a technical solution have yet to be developed. The Commission notes that in other jurisdictions such as Australia, cost apportionment formulas have been developed independently from the technical solution."

11. Telecom's second argument - that the Commission cannot decide the apportionment of costs until it knows the actual costs - is similar to the first argument already rejected by the Commission. The full costs will not be known until the technical solution is finalised, if not even later after the agreed common industry platform has been acquired and installed and each operator has provisioned and installed its own number portability infrastructure. Therefore, given the Commission has determined that it can make a cost apportionment determination prior to the finalisation of the technical solution, it follows that the Commission can make a determination on apportionment of costs prior to the quantification of those costs.

2.1 Statutory Interpretation

12. Section 31(1)(b) requires the Commission to determine "the **formula** of how the cost of delivering the service must be apportioned between the parties to the determination and every other person who becomes an access provider after

⁸ Telecom letter to Commission, 30 May 2003, at paras 6-10.

⁹ Commerce Commission, Decision Whether to Investigate an Application for Determination for Designated Multinet Network Services, 29 July 2003, para 32

the determination is made” (emphasis added). Section 31(1)(b) requires only that the Commission establish “how” the relevant costs are apportioned and not “how much” is actually apportioned (contrary to Telecom’s view that the “how” of cost allocation is somehow contingent on quantification of the “how much”).

13. A “formula” for apportioning costs can be determined without actually knowing the input values or the output value. The formula can be constructed by identifying what costs are relevant, prescribing how those costs inputs are to be calculated, such as by using TSLRIC; and then specifying the method to calculate the apportionment of cost, such as by specifying the numerator and denominator used to calculate each operator’s share.
14. The word “formula” is used in other parts of the Act, in relation to which Parliament clearly did not know, and did not need to know, the actual quantum of the costs involved when specifying the formula. This assists in interpreting the Commission’s task in determining a formula for how the costs of number portability services are to be apportioned. Section 93 requires the Commission, in apportioning the net costs of the TSO, to calculate “the amount payable by a liable person ... by using the ... **formula**” (emphasis added) specified either in section 93(a) or (b). Similarly, the designated access services which deal with supply of bundles also use the terminology “formula”. The fifth designated access service, for example, provides that “the wholesale price for the bundled services is the amount calculated in accordance with the ... **formula**” (emphasis added) specified in the initial pricing principle or the final pricing principle.
15. Whereas Parliament itself has specified the formulae to be used in these other provisions, Parliament has tasked the Commission with responsibility for developing the “formula” to be used for multinet network services. Therefore, the Commission would satisfy the minimum requirements of section 37(1)(b) if it determined a formula apportioning number portability costs in the absence of visibility (or legislative specification) of the actual costs involved.
16. In TelstraClear’s view, Parliament authorised the Commission to make its costs apportionment decision by way of a formula precisely to overcome the problem of having to wait for the cost quantification before determining the contribution to be made by each party. If Parliament intended that the Commission should wait until it could quantify the number portability contributions of each party, section 31(1)(b) would have required that the Commission’s determination not only specify the formula it used but also that the determination specify the input values the Commission used in that formula, much as required by sections 92(a), (c), (d) and (e), and then set out “the amount payable” calculated from applying the formula using those input values, as section 92(f) requires for the TSO.
17. In TelstraClear’s view, the issue is not whether the Commission has legal power to determine cost apportionment prior to cost quantification but whether, as a

¹⁰ emphasis added

¹¹ emphasis added

¹² As section 31(1) only sets a minimum list of requirements for a multinet network determination, the Commission could decide to go on to apply its formula and calculate each party’s contribution. The Commission could do so in its determination or, as discussed below, could provide in its determination for disputes over application of the formula to be referred back to the Commission.

matter of discretion, it should wait until the costs are quantified. The overseas experience of number portability provides useful guidance for the Commission in making this decision indicating that the Commission need not and should not wait until the costs are quantified.

2.2 Overseas experience

18. TelstraClear's section 34 submission set out decisions of overseas regulators which discussed the importance of determining cost apportionment principles in parallel with the technical solution¹³.

19. The ACCC considered that early specification of pricing principles would provide incentives for development of an efficient technical solution:

*"Encouraging [Carriage Service Providers] to adopt efficient technology is important given the size of the system set-up and call conveyance costs of LNP. Providing incentives to make inefficient choices will impose substantial additional costs, which in the end will be to the detriment of the long-term interests of end-users."*¹⁴

20. The UK Monopoly and Mergers Commission also recognised in its review of number portability cost apportionment issues that¹⁵:

"Incentives for cost minimization would be improved if charges were determined in advance and not altered in light of the actual costs incurred."

21. The overseas experience also shows that, contrary to Telecom's assertion, the Commission will have a sufficient basis on which to make a determination of costs apportionment without waiting for finalisation of the technical solution and quantification of the costs:

a. The cost apportionment principles adopted overseas have been applied to the range of IN solutions which might be adopted in New Zealand as an outcome of the current industry process. Awaiting finalisation of the technical solution would not reveal any technical or design issues which would lead to a different approach to cost apportionment. The principle of each carrier bearing its own costs has been applied to distributed database solutions, such as apply in Hong Kong and Australia, and to a centralised database solution, such as applies in the US; and

b. The impact on competition and consumer welfare of apportioning number portability costs in different ways can be adequately understood in the absence of the actual costs. Awaiting the quantification of the costs is unlikely to reveal additional issues which would lead to the conclusion that a different approach to cost apportionment better promotes competition to the long term benefit of end users.

22. While the Commission has stated its intention to proceed to make a cost apportionment determination in its 23 June letter, TelstraClear is concerned by

¹³ TelstraClear response to Request for comment: Application for Number Portability, 30 May 2003, para 12

¹⁴ ACCC, Pricing Principles for Local Number Portability – A guide (June 1999) at para 6.2

¹⁵ Telephone Number Portability, A report on a reference under section 13 of the Telecommunications Act 1984, November 1995, at para 7.43.

the Commission's apparent qualification in the same letter¹⁶:

"We recognise that the finalisation of the Commission's determination will need to await the completion of the code process."

23. The Commission's qualification seems inconsistent with the Commission's reasoning in its determination to investigate the cost apportionment application. The Commission concluded, as set out above, that section 31(1)(a) and 31(1)(b) are not conjunctive, so that "where there is agreement between the access seeker and the access providers on the functions and standards of the system but not on the cost apportionment formula, an access seeker may apply for a determination on the cost apportionment formula"¹⁷ and vice versa. The industry process of agreeing the technical solution, while substantially advanced, might end in disagreement, but there is no jurisdictional reason why the Commission cannot now proceed to finalise its determination.
24. The reasoning in the Commission's section 35 determination must mean that if industry agreement is not reached on the technical solution, one or more access providers can make a separate application under section 31(1)(a) for the Commission to determine the functions and standards of the number portability solution. Further, if a subsequent section 31(1)(a) determination was needed, any technical solution required by the Commission is unlikely to alter or undercut its earlier section 31(1)(b) cost apportionment determination because, as noted above, the same cost apportionment principles have been applied across the range of technical solutions for number portability and, in particular, the different IN solutions which are likely to be the subject of the section 31(1)(a) determination.
25. In TelstraClear's view, the requirements of section 37(1)(a) can be satisfied if the final cost allocation determination refers to the output which may emerge from the parallel industry process which is developing the functional specification, otherwise the effect of treating sections 31(1)(a) and 31(1)(b) disjunctively is largely cancelled out. It is not necessary for the Commission to wait for the output from the industry to meet section 37(1)(a), otherwise this comes close to the original Telecom argument rejected by the Commission. The Commission can refer to the functional specification as being developed by the TCF or as determined by the Commission if it cannot be agreed (under separate disjunctive section 31(1)(a) application). The reference in section 37(2) to approved codes is only intended to prevent a section 37 determination overriding an existing code and is not direction to the Commission to wait until a code is approved if the current application before it does not directly request that the Commission determine the functional requirements.
26. Delaying the cost apportionment determination to await completion of the code process could itself create further opportunities for delay. A party to a multinet network service determination can seek judicial review or can appeal under s. 60 of the Act. Telecom has already raised a number of issues of legal interpretation and jurisdiction, including whether some of the applicants meet the criteria of "access seeker" for either or both of the LNP and MNP services. Any legal challenge to the Commission's number portability decision would

¹⁶ Commission letter to TelstraClear, 23 June 2004, para 3

¹⁷ Commerce Commission, Decision Whether to Investigate an Application for Determination for Designated Multinet Network Services, 29 July 2003, para 29.

involve complex legal, economic and factual issues and could take 12-18 months to finalise (without allowing for appeals from a High Court decision).

27. If the Commission's cost apportionment decision runs up against finalisation of the technical solution, and Telecom (or another party) challenges, it is unlikely that implementation of the technical solution would proceed until the legal proceedings were finalised.
28. The lack of a cost apportionment formula is already causing problems in finalising the technical documents. A number of Telecommunications Carrier (TCF) members have said that the Industry Portability Management System (IPMS) technical specification must be completed before they will proceed with planning and costing of their own internal systems. But in the absence of cost apportionment principles, some members also are reluctant to outlay the funds required to engage a third party to write the technical specifications. Pending the Commission's cost apportionment determination, TelstraClear is proposing interim funding by Telecom, TelstraClear and Vodafone, with a "washback", so that the specification writing can be progressed. If the parties are unable to agree an interim funding arrangements, all development work on the IPMS technical solution will cease until the Commission makes its determination. Even if the parties agree on interim funding, this will only take the TCF to December and, in the absence of the Commission's determination, it is unlikely that the next stage of vendor selection will proceed because the costs are larger and interim funding will be more difficult to agree.
29. This demonstrates the circularity of Telecom's proposed approach to cost apportionment. If the Commission accepts Telecoms' view that the Commission should not decide cost apportionment until the actual costs are known, the specifications will never be written, number portability will not be implemented and the Determination will never be issued. Even if the Commission takes the view that it does not need to know the actual costs but only a reasonably accurate estimate, the parties are unlikely to ever get to this point because, in the absence of cost apportionment principles, the specification work required to make a reasonable estimate of costs will not be completed.
30. Accordingly, TelstraClear proposes that these proceedings should continue in parallel with the industry code processes and if the Commission's processes are completed before the industry's, the Commission should make its final determination without awaiting the finalisation of the codes or information on the actual costs.

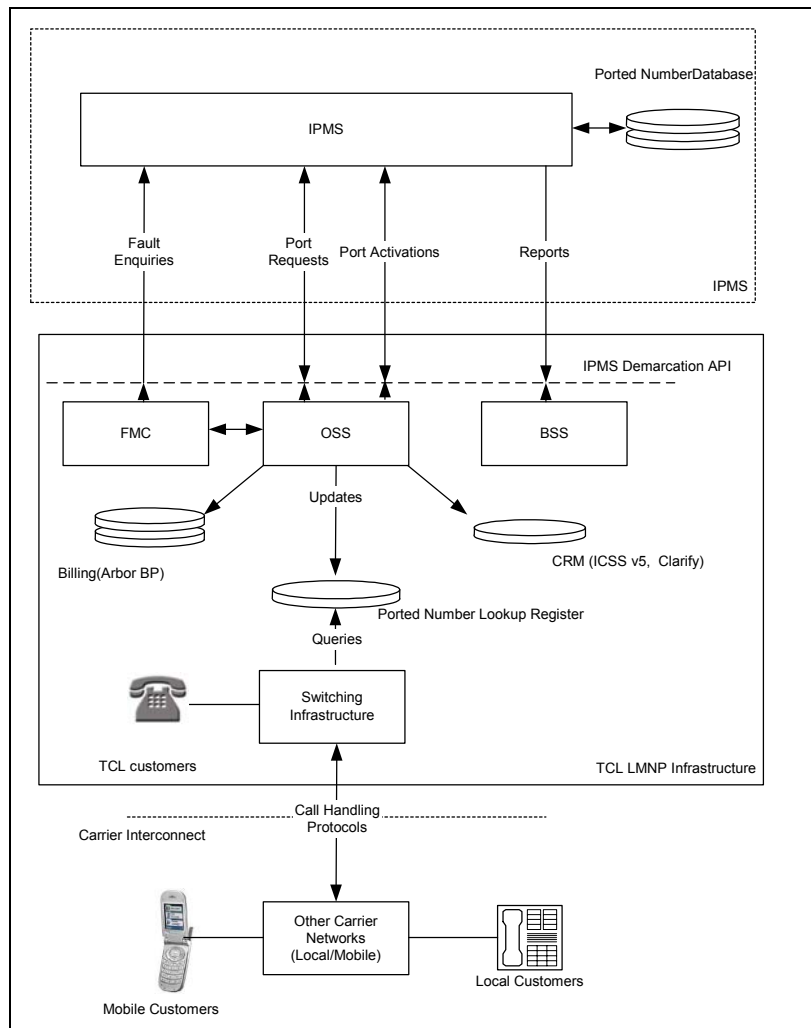
3 NUMBER PORTABILITY COSTS, INTERNATIONAL APPROACH AND HISTORY OF COST APPORTIONMENT IN NEW ZEALAND

3.1 Types of Number Portability Costs

31. There are two broad categories of costs associated with number portability:
 - a **operator-specific costs:** the costs of each operator to build, operate and administer their own number portability systems required for in-porting and out-porting numbers and to route calls originating from that operator's customers to ported numbers; and
 - b **common industry costs:** the costs of the common infrastructure established by industry to support inter-operator number portability processes.
32. The balance between operator-specific costs and common industry costs will depend on the technical solution: for example, whether the IN solution involves each operator interrogating a common industry database on a per call basis or the per call interrogation is undertaken by each operator within its own network based on porting information downloaded from a common industry database, which is the proposed solution in New Zealand. Figure 3 illustrates the proposed New Zealand solution: the common industry costs fall within the domain marked "IPMS" and the operator specific costs fall within the domain marked "TCL LMNP Infrastructure".¹⁸

¹⁸ The proposed number portability codes will not specify the solution adopted by each operator. The architecture depicted within the TCL domain may not be the solution which is adopted by other operators.

Figure 3: Proposed Number Portability Architecture in New Zealand



33. The TCF's Portability Specification Working Party has identified the individual (one-off and on-going) costs falling within the common industry cost and operator-specific cost categories:

Figure 4: TCF Working Party Number Portability Costs

Types of costs	Subcategories of costs	One-off costs	On-going costs
Operator-specific costs	System set-up and maintenance costs: These are the upfront capital costs of each operator building its own solution, including network build, the Operations Support Systems (OSS) supporting functions such as provisioning of porting requests and billing system changes, signalling links connecting to the IPMS and the ongoing operations and maintenance costs of using the solution.	<ul style="list-style-type: none"> Developing internal specifications Designing, building, testing and installing internal interface(s) with IPMS Designing building, testing and installing front office and back office functionalities; developing and implementing processes; and Training and documentation. 	<ul style="list-style-type: none"> Operator's and management of internal systems; Maintenance;

Types of costs	Subcategories of costs	One-off costs	On-going costs
	<p>Customer-specific transfer costs: These are the incremental costs incurred when customers change providers and port their number from one operator to another.</p> <p>Additional call conveyance costs: These are the costs associated with either forwarding the call within the donor network to the terminating fixed or mobile network.</p>		<ul style="list-style-type: none"> • Volume driven costs – staff and other resources; • Expansion, growth and upgrades.
Common industry costs	<p>System set-up costs: these are the upfront capital costs of the common industry platform and include the costs of any third party engaged to develop the technical specifications and build and test the common platform to those specifications. The costs of each operator's signalling links to the common industry platform are usually regarded as part of that operator's internal costs because the links are on that operator's side of the interface with the common industry platform¹⁹.</p>	<ul style="list-style-type: none"> • Portability specification working party costs; • Development of system technical specification; • Training and documentation. 	
	<p>Ongoing operations and maintenance costs: these are the annual costs of operating, maintaining and managing the common industry platform. These functions may be outsourced to a third party provider, such as in the case of the toll free number portability system in Australia and New Zealand. The Telecommunications Carriers' Forum (TCF) is proceeding on the basis that the common industry platform for LNP and MNP will be operated by an independent third party on behalf of the industry.</p>		<ul style="list-style-type: none"> • IPMS operators and management; • IPMS support (front line and backup); • Software licensing; • Maintenance; and • Expansion, growth and upgrades.

3.2 International Cost apportionment principles for Operator-Specific Costs

34. The universally accepted principles for apportionment of operator-specific number portability costs are that:
- each operator should bear its own system set-up costs; and
 - each operator should bear its own costs of any additional call conveyance, if any.
35. The approach to apportionment of the direct costs of the donor operator processing each individual porting request differs. In some countries, the donor operator meets its own costs (as does the recipient operator), such as Australia. In other countries, the recipient operator pays a small charge covering the donor operator's incremental costs of processing the porting request, such as in Hong Kong and Ireland.

¹⁹ Under TNAS, the links each operator installs to connect to the TNAS database are at its cost.

36. The approach to apportionment of **operator-specific costs** in a number of comparable countries is set out in figure 5:

Figure 5: International Approaches to Apportionment of Operator-Specific Costs

Country	Set-up costs	Additional conveyance and other costs	Per port admin costs
Australia	Each bears own costs	Each bears own cost	Each bears own costs
Netherlands	Each bears own costs	Each bears own costs	Each bears own costs
Ireland	Each bears own costs	Each bears own costs	Recipient pays per port charge
UK	Each bears own costs	If call transits from originating operator to recipient operator across donor operator, recipient pays incremental cost based transit charge to donor	Recipient pays per port charge
Hong Kong	Each bears own costs	Fixed operators bear own costs Mobile operators contribute to fixed incumbent's costs	Recipient pays a per port charge
US	Each carrier bears own costs	Each carrier bears own costs	Each carrier bears own costs
Singapore	Each carrier bears own costs	Each carrier bears own costs	Recipient pays a per port charge

37. Regulators have applied the same cost apportionment principles between LNP and MNP. The “each carrier bears its own costs” principle was originally developed for LNP, as MNP was introduced later in most countries. But as Oftel has noted, the “each carrier bears its own costs” principle is as relevant to the costs of MNP as to LNP, if not more so given the more symmetrical nature of the mobile industry²⁰:

“The MMC based its conclusions [in the fixed number portability review] on a set of principles which can be universally applied to any form of portability. Oftel considers that the main difference between fixed and mobile portability

²⁰ Number Portability in the Mobile Telephony Market, July 1997, at paras 4.19 and 4.20.

is in terms of symmetry. In fixed portability there was an imbalance in the magnitude of the relevant costs incurred by BT compared to other operators. ...In contrast, there is a considerable degree of symmetry in the mobile networks. The development costs required to support portability should be roughly similar in all networks.

38. There are two exceptions to application to mobile networks of the principle of each bearing its own set-up and call conveyance costs (Hong Kong and the UK) which have not been followed in other countries.
39. In Hong Kong, mobile operators are required to contribute to the fixed incumbent's database costs for calls, which was justified by OFTA on the basis that mobile services are provided on a mobile party pays basis. Hong Kong mobile operators pay the fixed network operators a charge to originate fixed to mobile calls. As such OFTA concluded that²¹:

“Since the current interconnection charging arrangements between the fixed and mobile operators dictate the mobile operators to bear the entire interconnection costs for mobile calls originating from and terminating on the fixed networks, the MNP costs is just one of the cost components facilitating the completion of calls from the fixed to mobile networks and should be treated in the same way as interconnection costs.”

40. By contrast, consistent with the internationally accepted principle that each carrier bears its own costs, OFTA has determined that the fixed network entrants do not make any contribution to the incumbent's number portability costs because calls to fixed networks are charged on a calling party pays basis.²²
41. OFTA's approach to MNP has not been followed by other regulators, including in other mobile party pays economies, such as the US and Singapore. In both countries, the principle that each operator bears its own costs applies to both LNP and MNP set-up and additional call conveyance costs.
42. In the UK, fixed originated calls to ported fixed numbers incur additional conveyance costs under the call drop solution utilised in the BT network. BT was originally permitted to recoup these additional call conveyance costs (but not the system set-up costs) from entrants. Oftel phased out this additional call conveyance charge in 1997, in recognition of its adverse effect on competition and to provide BT with an incentive to shift to an IN solution. Oftel stated that “the cost of additional conveyance should be subsumed into the donor operator's general network costs, spreading the costs over all calls on the network”, since this “reflects the distribution of benefits: additional conveyance costs are incurred by calls to the ported number but the benefits of number portability accrue to all customers...”.²³
43. The original UK approach to additional call conveyance costs has generally not been followed in other countries, for the very reasons that Oftel subsequently abandoned it. Number portability was initially introduced in Australia by call

²¹ OFTA, Number Portability for Public Mobile Services in Hong Kong: Cost Recovery Framework, Statement of the Telecommunications Authority, 28 August 1998, page 7.

²² OFTA, Operator Number Portability: Recovery of Costs Under an Intelligent Network Solution, 13 September 1997.

²³ Oftel, Number Directive: Number Portability Requirements, A Joint Consultation Document Issued by Oftel and the Department of Trade and Industry, October 1999.

forwarding. The ACCC determined that the same principle of each carrier bears its own costs should apply to the interim call forwarding solution as applies to the long term IN solution²⁴, which meant that Telstra could not recoup its additional call conveyance costs under the interim number portability solution. The Irish regulator, the ODTR, also determined that the fixed incumbent when originating a call to a ported number should bear any additional call conveyance costs within its network²⁵. The Irish regulator considered that the risk of the original UK approach was being “stuck with the initial solution in the long term.”²⁶

3.3 Cost apportionment principles for common industry costs

44. Apportionment of common industry costs has been resolved by commercial agreement between the participants in most countries. However, the industry in New Zealand has tried and failed over many years to agree on apportionment of costs, including the common industry costs. Accordingly, the Commission’s determination of a costs apportionment formula must also cover common industry costs.
45. In the US, the FCC has addressed the issue of apportioning common industry costs. The US technical solution involves a set of regional common databases. The FCC specifically rejected apportionment of these common industry platforms based on the extent of usage made by operators (e.g. through database “dip” fees):²⁷

“Distributing the shared costs among telecommunications carriers in proportion to database use would shift these costs to telecommunications carriers that win more customers because such carriers will perform more uploads. At the outset of number portability, these carriers are more likely to be competitive LECs. Consequently, usage-sensitive distribution of the shared costs could give one service provider an appreciable, incremental cost advantage over another service provider when competing for a specific subscriber.”

46. The FCC also rejected an even split of common industry costs based on the number of participants in the portability scheme²⁹:

“If, for example, the total costs of currently available number portability are to be divided equally among four competing local exchange carriers, including both the incumbent LEC and three new entrants, within a specific service area, the new entrant’s share of the cost may be so large, relative to its expected profits, that the entrant would decide not to enter the market.”

47. The FCC considered that, consistent with the principle of competitive neutrality,

²⁴ Pricing Principles for Local Number Portability, June 1999, at para 6.3.

²⁵ Introducing Number Portability in Ireland, Decision Notice D1/99, April 1999, at para 5.3.

²⁶ See discussion in supporting report “Introducing number portability in Ireland” Ovum (ODTR 99/01), January 1999.

²⁷ Third Report and Order in Matters of Telephone Number Portability, CC Docket 95-116, 12 May 1998 at paragraph 88

²⁸ Third Report and Order in Matters of Telephone Number Portability, CC Docket 95-116, 12 May 1998 at paragraph 88

²⁹ First Report and Order and Further Notice of Proposed Rule Making, Number Portability, FCC 96-286, 27 June 1996, at page 51.

any allocation needed to reflect the relative size of the incumbent's PSTN customer base³⁰:

In contrast, recovering the costs of currently available number portability from all carriers based on each local exchange carrier's relative number of active telephone numbers would not violate this criterion, since the amount to be recovered from each carrier would increase with the carrier's size, measured in terms of active telephone numbers or some other measure of carrier size. In addition, allocating currently available number portability costs based on active telephone numbers results in approximately equal per-customer costs to each carrier. We also believe that assessing costs on a per-telephone number basis should give no carrier an advantage, relative to its competitors".

48. As discussed in Part 5, TelstraClear believes that apportioning common industry costs on the basis of the active numbers is the fairest and most efficient approach for New Zealand.

3.4 Previous Consideration of Number Portability Cost Apportionment in New Zealand

49. The LECG cost benefit study commissioned by the NAD concluded that the net social benefits of number portability "depends critically on the price structures adopted for charging customers for porting services..."³¹. LECG assessed the net benefits of number portability on two scenarios: first, costs would be fully recovered from porting customers (linear pricing) and alternatively porting customers would only pay the incremental costs of porting (i.e. the per line costs) and the other costs would be recovered by operators across their customer base, such as through higher line rental charges (non-linear pricing)³²:

"Full LTNP yields a net social benefit for New Zealand if customers are charged only for the marginal costs of porting, and LTNP removes rationing of fixed-line residential customers... with the present value of net social benefits ranging from \$43 million to \$192 million."

"Full LTNP is likely to impose a negative net social benefit (i.e. net social cost) on New Zealand if the full costs of LTNP without rationing are recovered through charges on ported customers... with the present value of net social benefits ranging from -\$54 million to \$21 million."

50. In practice, non-linear pricing means that each carrier bears its own costs (and contributes to the common industry costs). As summarised in figure 6 prepared by the NAD administrator, NAD members other than Telecom endorsed the principle that operators should bear their own set up costs and that industry costs should be apportioned across all operators³³:

³⁰ First Report and Order and Further Notice of Proposed Rule Making, Number Portability, FCC 96-286, 27 June 1996, at page 51.

³¹ LECG, Report on Long Term Number Portability, 19 November 2001 at p.6.

³² LECG, Report on Long Term Number Portability, 19 November 2001 at pp.6 and 7.

³³ MCo, LTNP Implementation Cost Allocation, 20 February 2002, at p.2.

Figure 6: NAD Members' Views on Cost Apportionment

NAD party	Cost Elements ³⁴		
	Own network system	Intra-industry system	Per-customer porting costs (incl. per call conveyance cost)
CallPlus	✓ ³⁵ Bear own costs	✓ Apportioned according to number blocks	✓ Porting charge for each ported number
Econet Wireless	x	x	x
IHUG	✓ Bear own costs	✓ Apportioned according to number blocks	✓ Porting charge for each ported number
TeamTalk	x	x	x
Telecom	✓ Borne by access seekers	✓ Borne by access seekers	✓ Borne by in-porting carrier
TelstraClear	✓ Bear own costs	✓ Apportioned according to number blocks	✓ Porting charge for each ported number ³⁶
Vodafone	✓ Bear own costs	x Should be answered after the technical solution has been scoped etc	x No view given, as consider it outside scope of clause 5.4 of the Deed
Zip Internet	x	x	x
TUANZ	✓ Bear own costs	✓ Bear appropriate share of common costs of IPMS	✓ Non-linear

³⁴ The cost categories used by LECG are broadly similar to the cost categories discussed above, with the exception of additional call conveyance. Where additional call conveyance occurs with the originating network because it is the donor network, the additional call conveyance costs are typically considered part of the "own network" cost category. Where the additional call conveyance is performed by the donor network as a transit operator, the additional call conveyance may be a cost which is recoverable by the donor network from another party – the recipient mobile network in the UK and the originating network in Australia.

³⁵ Ticks and crosses identify whether the party provided a view to the NAD administrator.

³⁶ As discussed in Part 5, TelstraClear has given further consideration to this issue and believes that the position advanced by ATUG of non-linear charges, which is essentially the ACCC's position, is more consistent with the objects of the Act.

4 COST APPORTIONMENT PRINCIPLES APPROPRIATE FOR NEW ZEALAND

4.1 TelstraClear's Position on Cost Apportionment

51. TelstraClear considers that apportionment of number portability costs in the manner set out in figure 6 would best achieve the objective of the New Zealand Act to promote competition to the long term benefit of end users:

Figure 7: TelstraClear Proposed Apportionment of Number Portability Costs

Cost category ³⁷	System Set up	Ongoing maintenance costs	Additional call conveyance costs	Per line costs
Operator specific costs	Each operator bears its own costs	Each operator bears its own costs	Each operator bears its own costs where it is the originating operator and the additional call conveyance is within its own network. Originating operator bears costs of additional call conveyance in donor operator's network where donor operator provides re-routing service	Each operator bears its own costs
Industry common costs	All participants contribute based on active numbers	All participants contribute based on active numbers	Not applicable	Not applicable

52. Apportionment of the costs of number portability is considered below in terms of allocative, productive and dynamic efficiency:
- a. **Allocative efficiency requires consideration of number portability cost causation and benefits:** those who cause number portability costs to be incurred at the margin should bear them. Equally those who benefit from number portability, which may be a wider group than those causing the costs to occur, should contribute to the relevant costs. This ensures that resources will only be allocated to producing the good or service if the purchaser or beneficiary obtains sufficient value to justify that apportionment;
 - b. **Productive efficiency requires cost minimisation of number portability solutions:** those who influence the size of number portability costs should face strong incentives to minimise them, for a given level of quality. This will lead to operational efficiency, in particular, adoption of the most technically efficient solution; and

³⁷ We have broken out the ongoing costs from the set-up costs for the purposes of this table, although as discussed in Part 4, the operator specific capex and opex costs tend to be addressed together.

- c. **Dynamic efficiency requires consideration of competition objectives:** costs should be apportioned so that operators can compete on a neutral basis and attract customers based on their relative merits. By enhancing competition, number portability will promote innovation and investment.
53. We will first discuss each of these efficiency principles and then turn to consider how they apply to each category of the number portability costs. While cost apportionment principles are generally discussed in terms of operator-specific costs, they are also relevant, as we discuss below, to apportionment of the common industry costs.

4.2 Cost Causation and Benefit

54. This principle implies that those who cause the costs, or who benefit from number portability, should face a price signal that reflects those costs. Although operators may initially bear number portability costs, end users will ultimately fund those costs through retail charges. So, it is a question of which group of customers, given cause and benefit, should be responsible for number portability costs.
55. Incumbents typically argue, using the analogy of interconnection charging, that entrants (as a recipient operator) “cause” the number portability costs faced by the incumbent (as donor operator), that porting customers are the sole beneficiaries of number portability and, therefore, the entrants should pay the incumbent’s long run incremental costs of its number portability system. However, application of the cost causation and benefits principles are not this straightforward because number portability costs are caused by a number of players and benefits are widely spread.

4.2.1 Benefits for All End Users

56. All customers, not just ported customers, benefit from number portability. Where number portability is in place, each customer has the ability to port. Allowing a customer to take his or her number substantially reduces the barriers to switching and makes more of each operator’s customer base, in practice, more contestable. As operators will have difficulty price discriminating between potential porting customers and those who are less inclined to port, pricing designed to forestall porting inevitably flows through to all customers. All customers also will benefit from the greater range of services offered as a result of the enhanced competition that would result from cost effective and efficient number portability.
57. The FCC considered that non-porting customers benefited from number portability in several ways³⁸:

“Additional economic and policy considerations also support our decision not to follow strict principles of cost causation. First all customers benefit from number portability because number portability promotes competition, lower prices, increased choices and greater innovation. In addition, other customers will benefit to the extent that they need not search for a customer’s new number when that customer switches carriers. Since number portability generates an externality from which all customers benefit, the porting

³⁸ FCC, *Fourth Report and Order in the Matter of Telephone Number Portability*, 16 July 1999, at 9936

customers should not pay the full economic costs.”

58. The cost benefit study undertaken for Oftel found substantial efficiency improvements and price reductions from increased competitive pressure which would accrue to all telecommunications customers³⁹. While acknowledging that the size of these benefits to all consumers can be difficult to quantify, the MMC considered that “..like most of those who contributed to this debate, our judgment is that such effects are very likely to emerge and to be significant.”⁴⁰
59. The ACCC looked at number portability cost apportionment principles from the perspective of the end user’s “right” to his or her telephone number. The ACCC noted that customers make an investment in their telephone numbers by, for example, advertising them, and that porting charges diminished that investment⁴¹:

“Once MSNs [mobile service numbers] have been allocated, customers have the right to port their number(s) to another provider of mobile services. The interests of customers include allowing them to reap the rewards of their investments in their MSNs and not be unduly restricted in their choice of PSD/CSP. As a result, pricing principles for MNP should not allow the appropriation of the good will or capital that customers have invested in MSNs.”

4.2.2 Role and Benefits for Donor Operators

60. The incumbent’s number portability costs are not caused by entrants but are a necessary part of the costs of any operator participating in a competitive market in which number portability is a feature (and required by regulation). As the UK Monopoly and Mergers Commission noted⁴²:

“..[the] costs are not caused by the provision of number portability to any particular customer [but] they are part of the investment which any operator needs to make to enable it to provide telecommunication services in today’s circumstances.....It follows that the routing of calls to ported numbers should be regarded as a normal part of a telecommunication service and not as a facility requiring special charging arrangements, particularly as telephone numbers are now a national resource and no longer ‘owned’ by individual operators”.

61. Incumbents benefit from number portability. Like any other operator, the incumbent is both a recipient operator as well as a donor operator. While the balance of “in-ports” and “out-ports” for each network will change over time reflecting the operator’s relative success in the market, this does not diminish the two-sided character of number portability for all operators.
62. Even in its capacity as the donor operator, an operator benefits from number portability functionality for calls to numbers which have been ported away from the donor operator. The key feature of the direct connect service which

³⁹ Cost-Benefit Analysis of Number Portability” NERA, January 1994.

⁴⁰ Telephone Number Portability, A report on a reference under section 13 of the Telecommunications Act 1984, November 1995, at para 2.154.

⁴¹ ACCC, Pricing Principles for Mobile Number Portability, May 2001, para 4.3.

⁴² Telephone Number Portability, A report on a reference under section 13 of the Telecommunications Act 1984, November 1995, at paras 2.130 and 2.200.

each operator provides to its customers is the ability to call any other PSTN number, whether the called customer is connected to the originating network or another network. This applies as much to calls to ported numbers as to calls to non-ported numbers, especially as the calling customer usually will not know the network location of the called customer or even that the number is ported.

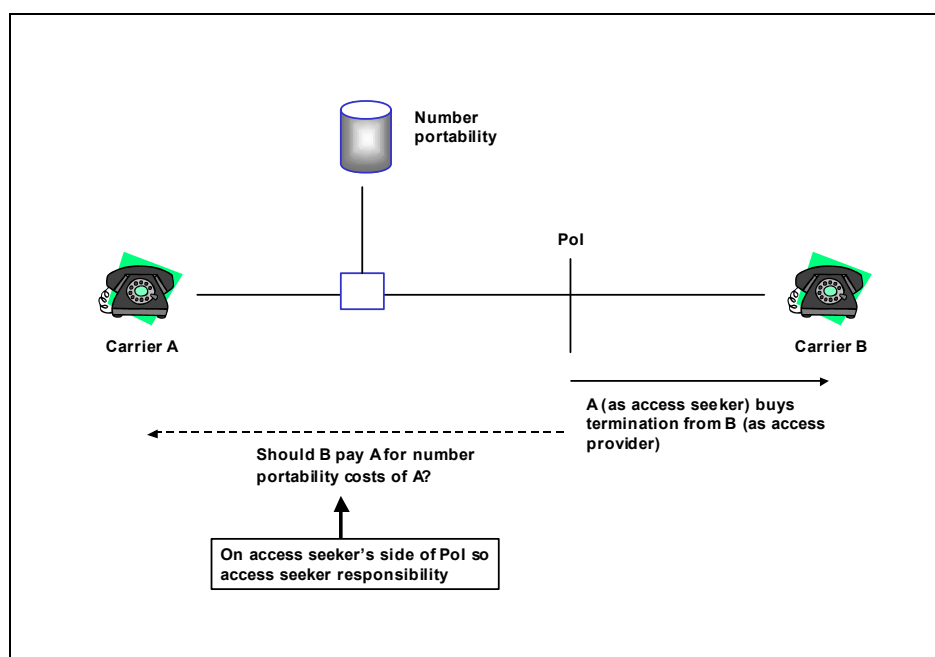
63. Number portability functionality allows the donor operator to route the call to the new network location, allowing the donor operator to charge its own calling customer for a completed call if answered at the new network location. The former Australian regulator, AUSTEL neatly described the nature of number portability as follows⁴³:

“...a service within the donor network to support and complete calling services provided by the donor network to its customers; that is, it is a service Telstra supplies to itself in order to route a call to a ported number.”

64. Further, the analogy between interconnection and number portability advanced by incumbents would, if correctly applied, result in each operator being solely responsible for its own costs. It is a cardinal principle of interconnection that the party acquiring access services is responsible for all its costs on its side of the Point of Interconnection (**POI**). The access seeker undertakes the switching and carriage necessary to deliver the call to the access provider's network and then pays for switching and carriage provided by the access provider on its side of the POI so the call can be terminated. For example, whether TelstraClear switches local calls terminating to a Telecom number inside or outside that local area is irrelevant to the termination service Telecom provides to TelstraClear.
65. For this reason, treating inter-network number portability as a service supplied by the donor operator to the recipient operator views the issue from the “wrong end of the telescope”. When the donor operator routes a call to a number which has been ported to the recipient operator, the donor operator acquires terminating access from the recipient operator, in the same way as for a call to a non-ported number. As figure 8 shows, applying the standard interconnection paradigm, the number portability functionality which the donor operator uses on the originating side of the POI should be its sole responsibility.

⁴³ AUSTEL, Arbitration Determination, Commercial Arrangements for Local Number Portability, 1997 at paragraph 3.5

Figure 8: Correct Application of the Interconnect Model to Number Portability



66. Accordingly, the MMC rejected BT’s argument that “the conveyance element of portability was a form of interconnection and that the normal principles of interconnection charging should apply” because⁴⁴:

“With interconnection the originating operator (BT for this purpose) collects all the revenue from the caller and pays over part of it to the other operator to complete the call to its subscriber. BT’s proposal for dealing with portability conveyance costs is that it should retain a greater proportion of the revenue from a call to a ported number by, in effect, deducting an amount from the termination payment which it would otherwise make to the other operator. This is a reverse of the normal flow of interconnection charges.

To explore the comparison further we observe that, when BT makes an interconnection payment to another operator to complete a call, its loss of revenue is greater than its saving in costs from no longer having to deliver the call. The position is essentially the same with a call to a ported number, although such a call is likely to be even less profitable than one to another operator’s subscriber who has changed number because it normally gives rise to extra costs as well as a loss of revenue. In both cases the normal principles of telephony charging would lead BT either to charge its own subscribers a higher rate for such calls or, more likely, to average the extra costs and loss of revenue over all its outgoing calls. We therefore think that the parallel between portability and normal interconnection is not close.”

67. Even if there is a causal link between the recipient operator and the costs of the donor operator, the other principles discussed below, especially the competition principle, mean that those costs should not be apportioned in full or part to the recipient operator. The FCC, for example, noted that application of cost causation principles applied to interconnection services would undermine

⁴⁴ Telephony number portability, or report on a reference under section 13 of the Telecommunications Act, November 1995, at paras 2.136 to 2.138.

competitive neutrality and, therefore, promotion of competition between incumbents and entrants⁴⁵:

“Ordinarily the Commission follows cost causation principles, under which the purchaser of a service would be required to pay at least the incremental cost incurred in providing that service. With respect to number portability, Congress has directed that we depart from cost causation principles if necessary in order to adopt a “competitively neutral” standard, because number portability is a network function that is required for a carrier to compete with the carrier that is already serving a customer. Depending on the technology used, to price number portability on a cost causative basis could defeat the purpose for which it was mandated.”

4.3 Cost Minimisation

68. Strong incentives to minimise the costs of number portability are essential to achieving productive efficiency, and ultimately to achieving dynamic efficiency. This requires incentives for the operators to implement number portability in the most efficient way possible and to keep ongoing number portability costs down. Incentives for cost minimisation are particularly important in telecommunications because fixed costs form such a significant part of total costs.
69. Incentives to minimise costs are strongest where each operator bears the entire cost that it incurs in meeting the service requirements for number portability. If a donor operator on-charges its costs to recipient operators there is little incentive to introduce portability efficiently. This is because the donor operator will not face the costs of selecting an inefficient technology. The donor operator might also choose an inefficient solution to raise rivals’ costs and gain a competitive advantage, especially where the donor operator has a substantial existing customer base to protect against entrants.
70. The ACCC noted that these efficiency considerations lead to a different outcome on cost apportionment than applies to interconnection because, unlike with number portability systems, interconnection uses common infrastructure with the access provider’s own retail services and therefore the access provider has other incentives to be efficient in the provision of interconnection⁴⁶:

“If each CSP is responsible for their own system set-up, call conveyance and customer transfer costs of providing LNP, they have the appropriate incentives to select the most efficient technologies to minimise these costs. If the donor CSP recovers these costs from the recipient CSP, the incentives are reversed. The donor CSP has the incentive to gain an advantage over its competitors (recipient CSPs), by selecting the technology that maximises the costs of LNP. These incentives are magnified as the donor CSP will not have to bear any of the costs of selecting an inefficient technology and the recipient CSPs must bear all these costs. This differs from the incentives faced by providers of many declared services under Part XIC of the Trade Practices Act 1974 (such as PSTN originating and terminating access). For access services, the incentives to adopt inefficient technologies are far weaker, as the access provider usually

⁴⁵ First Report and Order and Further Notice of Proposed Rule Making, Number Portability, FCC 96-286, 27 June 1996, at paras 154 and 155.

⁴⁶ ACCC, Pricing Principles for Local Number Portability – A Guide – June 1999, at para 6.2.

provides the same services to its own downstream operations as well as access seekers. Unlike the donor CSP, the access provider will have to bear a proportion of the costs of adopting an inefficient technology.”

71. On the other hand, the risk of requiring each operator to bear its own number portability costs is that operators will introduce low cost systems which adversely affect the quality of number portability services and, therefore, discourage number portability. Where operators are likely to win as many customers as they lose, such as between mobile operators, the risks are lower. But quality issues, particularly in customer churn systems, can be a major concern for LNP given that the incumbent accounts for most of the current base and therefore is likely to be a net loser of customers, at least in the initial stages of number portability.
72. However, this risk is addressable under section 31 because the Commission has power not only to determine the formula for number portability cost apportionment but also to determine the functionality required of number portability. While each operator has an incentive to minimise the costs of its number portability system if it cannot recover those costs from other operators, the technical solution it chooses must still meet the functional requirements determined by the Commission (or agreed by the industry itself). Section 31(1)(b), therefore, ensures that an incumbent is unable to raise rival's costs by either shifting costs of an expensive number portability solution to them or by adopting a technical solution which degrades the service they can provide using ported numbers.
73. Pricing for number portability also should send appropriate price signals to end users to ensure their number portability decisions are efficient. However, it does not follow that only porting customers should face porting charges. Each customer has the ability to port their number and that capability forms part of the functionality which is provided by the customer's current service provider (and originally by the donor operator from which the customer obtained their telephone number). As noted above, each customer also benefits from the porting capability which they have even if never exercised by them.
74. Accordingly, the appropriate nexus between number portability costs and the end user's decision is not the decision to use the number portability functionality to port away from the current service provider but the decision which the end user makes to their providers in the first place. If the end user chooses a provider which has implemented a high cost number portability solution, the costs that customer faces in porting should be higher than the costs which an end user faces who chooses a provider which more efficiently provides number portability functionality. Therefore, efficient porting behaviour by end users is best achieved if end users bear the costs of each donor operator's number portability costs through subscription fees paid to the donor operator. As the ACCC has said⁴⁷:

“Pricing for MNP should include price signals to enable efficient choice for customers between [competing suppliers] and that these price signals reflect the underlying cost of providing mobile services (including the costs of MNP). In this regard, the relevant costs are again the additional call conveyance costs

⁴⁷ ACCC, Pricing Principles for Mobile Number Portability, May 2001, para 6.5.

and the customer transfer costs.”⁴⁸

4.4 Promoting Competition

75. The benefits of competition are likely to be greatest where operators can easily enter and exit the market. Number portability cost apportionment, therefore, should enable operators to enter and attract customers based on their relative merits. The cost apportionment formula should not unreasonably hinder operators from achieving economies of scale and scope. It should also not inhibit competition or reduce the competitive benefits that number portability can bring. Equally, cost apportionment should not encourage inefficient entry or allow inefficient high cost operators to remain in the market in the long run.

76. As the ACCC has said⁴⁹:

“Competition and its consequent constraints on the behaviour of CSPs is likely to be greater where CSPs can easily enter and exit and can compete on their relative merits based on price (cost), quality and the range of services they provide. One factor that will influence the extent to which CSPs can compete on their relative merits is the degree to which customers are ‘locked-in’ to their current CSP ... It follows that pricing principles for LNP should allow CSPs to enter, attract customers and remain viable in the long-term based on their relative merits, which in turn depends upon their costs (including their costs of providing LNP), and the quality and range of services they supply. In this regard, pricing of LNP should allow for efficient entry and exit in the provision of local services and other telecommunications services.”

77. By contrast, the benefits of number portability in promoting competition will be weaker if the donor operator is able to recover its costs from the recipient operator. If the recipient operator is more efficient in providing number portability, it will be unable to signal this to its customers. Further, if an incumbent can recover its costs from entrants, it will be able to raise its rivals’ costs. The incumbent is, in effect, loading up its rivals’ cost basis and diluting any efficiency benefits of entry. As the Hong Kong regulator, OFTA, has said⁵⁰:

“The principle of effective competition also requires that one operator should not have the ability to raise its competitors’ costs or to weaken their ability to compete. For new entrants entering a market, they probably attract more customers from the incumbent than the incumbent will attract from them. Therefore, inter-operator porting charges are net cost to the new entrants and net revenue to the incumbent. If these charges are set excessively high, the ability of the new entrants to compete with the incumbent will be weakened. Realisation of the benefits of effective competition would then be inhibited.”

78. The FCC considered that, consistent with the principle of “competitive neutrality”, the cost recovery mechanism for number portability “should not have a disparate effect on the incremental costs of competing carriers seeking to serve the **same customer**”⁵¹. The FCC noted that if entrants paid portability

⁴⁸ Assuming that the alternative PSD/CSP has entered the market and there is an obligation to provide MNP, MNP set-up costs can be treated as sunk and are not relevant for this comparison.

⁴⁹ ACCC, Pricing Principles for Local Number Portability, June 1999, at para 4.1.1.

⁵⁰ OFTA, Operator Number Portability: Recovery of Costs under the Intelligent Network Approach, 13 September 1997 paragraph 18

⁵¹ First Report and Order and Further Notice of Proposed Rule Making, Number Portability, 27 June

charges they would always be at disadvantage in trying to win a customer from the incumbent compared to the incumbent in trying to keep that customer⁵²:

“An example illustrates the application of this criteria. When a facilities-based carrier that competes against an incumbent LEC for a customer, the incumbent LEC incurs no cost of number portability if it retains the customer. If the facilities-based carrier wins the customer, an incremental cost of number portability is generated. The share of this incremental cost borne by the new entrant that wins the customer cannot be so high as to put it at an appreciable cost disadvantage relative to the cost the incumbent LEC would incur if it retained the customer. Thus, the incremental payment by the new entrant if it wins a customer would have to be close to zero, to approximate the incremental number portability cost borne by the incumbent LEC if it retains the customer”.

79. Competition is affected by the relative ability of customers to switch between operators. Number portability can reduce these switching costs, promote competition and enhance dynamic efficiency. The European Commission undertook a comprehensive study of the relationship between porting charges levied on end customers and the use of portability to ascertain if requiring customers to bear a substantial portion of the costs acted as a barrier to porting. The European Commission reported that⁵³:

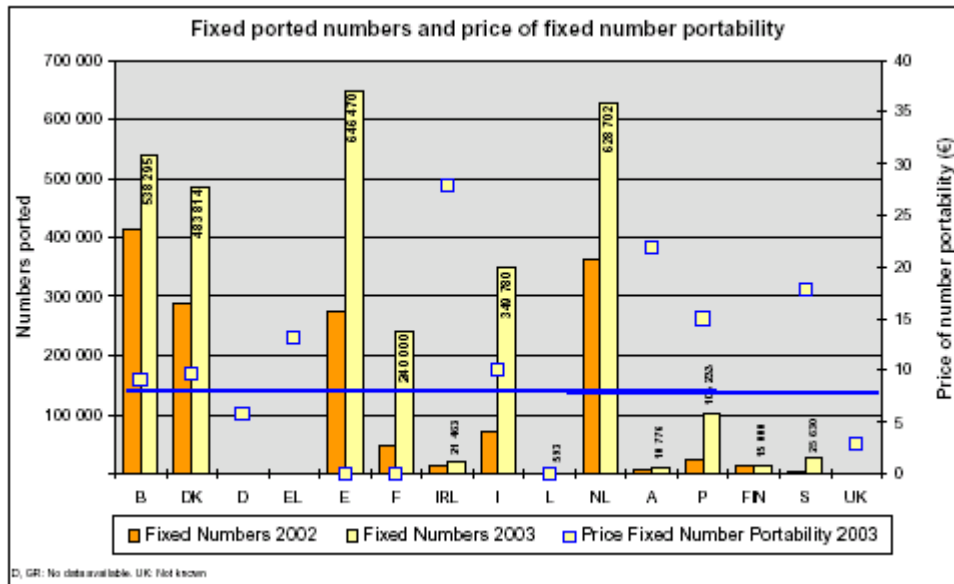
“The success of FNP seems to be directly linked to the charges imposed by the incumbent operator for porting numbers. In all member states where FNP is making significant progress, the charge does not exceed 10 euro. On the other hand, in Ireland, Austria and Sweden, where the fee is above 17 euro, very few numbers are ported.”

1996, FCC 96-286, at para 155 (emphasis added).

⁵²First Report and Order and Further Notice of Proposed Rule Making, Number Portability, 27 June 1996, FCC 96-286, at para 156.

⁵³ European Commission, 9th Report on Implementation of the New Regulatory Framework, page 22.

Figure 9: Impact of Porting Charges on Porting Levels in the EU
 (The horizontal axis indicates countries of the EU using official EU acronyms. The bars refer to the number of ports and the squares are the per line charges)



4.5 Applying Efficiency Principles to Number Portability Cost Categories

4.5.1 Operator-Specific Costs

80. Requiring each operator to bear its own system set-up and ongoing operations and maintenance costs is consistent with the principles discussed above, for the following reasons:

Figure 10: Apportionment of System Set-Up Costs in Accordance with Principle that Each Operator Bears Own Costs

Efficiency factor	Comment
Cost causation and benefits	<p>Requiring each operator to bear its own costs is a proxy for all consumers, porting and non-porting, contributing to number portability, appropriately reflecting that all customers benefit from enhanced competition.</p> <p>The donor operator uses portability functionality to complete and charge calls made by own subscribers.</p>
Cost minimisation	<p>As each operator faces consequences of its own technology choices, requiring each operator to bear its own costs provides an incentive for operators to minimise the overall cost of number portability.</p> <p>Number portability should be regarded as a feature of each direct connect service and efficient price signals are sent to end users if each operator's prices include costs of its chosen technology solution.</p>

Efficiency factor	Comment
Promoting competition	<p>Requiring each operator to bear its own costs ensures operators are able to compete on their merits and on the basis of cost effectiveness of their own technology choices, including for number portability.</p> <p>As set-up costs are the largest cost category, requiring each operator to bear its own costs prevents incumbents substantially raising entrants' costs.</p> <p>Apportioning incumbent's costs to entrants would itself be a barrier to entry given the impact of incumbent's fixed costs across a smaller entrant customer base.</p>

81. Where calls to ported numbers originate with the donor operator and it incurs additional call conveyancing costs within its own network, the donor operator should bear those costs, for the reasons set out below:

Figure 11: Apportionment of Additional Call Conveyance Costs in Accordance with Principle that Each Operator Bears Own Costs

Efficiency factor	Comment
Cost causation and benefits	<p>Additional call conveyance is "caused" by the donor operator's technology decision to use a non-IN solution.</p> <p>Donor operator uses additional call conveyance to complete calls made by own subscribers.</p> <p>Additional call conveyance is on donor operator's side of Pol and therefore is its responsibility.</p>
Cost minimisation	<p>Allowing the donor operator to charge for additional call conveyance reduces the incentive for it to move to a more efficient IN solution.</p> <p>End users should face consequences of choosing an operator which has less efficient number portability solutions than those operators which have implemented an IN solution.</p>
Promoting competition	<p>Overseas regulators have rejected technical solutions which involve additional call conveyance for long term number portability because additional call conveyance can degrade call quality and functionality to ported numbers, affecting entrants' ability to compete against incumbent⁵⁴. Therefore, allowing incumbent to charge for its additional call conveyance costs has a double impact in raising rivals' costs by simultaneously shifting incumbent costs and degrading service quality.</p> <p>As entrants would pay incumbent on a per call basis for all inbound calls to ported customers, incumbents and entrants do not face equivalent incremental costs when the incumbent is competing to retain a customer (as a non-ported customer and hence without additional conveyance costs) and the entrant is competing to win the customer away (as a ported customer and hence the entrant faces the</p>

⁵⁴ Technical models involving additional call conveyance were seen by the ACCC as not meeting the requirement that number portability provide equivalent functionality between calls to and from ported numbers compared to calls to and from non-ported numbers, ACCC, Telecommunications (Number Portability) Directions 2000.

Efficiency factor	Comment
	cost of additional call conveyance charges) or when incumbent is trying to win back in the future.

82. There is one circumstance in which TelstraClear believes it is appropriate for a donor operator to recover its additional call conveyance costs. The New Zealand codes will not prescribe the solution which each operator must implement, and it is possible that an operator may choose to forward calls originating from its customers to the donor operator which then would route the calls to the current network location of the ported number (called donor re-routeing). TelstraClear agrees with the ACCC's approach that in these circumstances the originating network should meet the costs of the additional call conveyance incurred by the donor operator⁵⁵. While a departure from the "each operator bears its own costs" principle, the ACCC concluded this was fair as the additional call conveyance was caused by the originating operator's decision to use a call forwarding method rather than a database solution which would not require transit across the donor operator. Donor re-routeing is used in the UK as the standard solution for MNP. Oftel has determined that the recipient mobile operator is to meet half of the donor operator's additional call conveyance costs. However, the UK approach is distinguishable because the call forwarding solution is used by all mobile operators whereas in New Zealand, as in Australia, most operators are expected to reflect the IN approach at the intra-industry level within their own networks.
83. TelstraClear considers that each operator should bear its own per-line costs (i.e. the recipient operator would not pay a per port charge to the donor operator). TelstraClear acknowledges that while some overseas regulators consider the per line costs are "caused" by the porting customer, we agree with the ACCC that requiring the donor operator to bear its own per line costs is more consistent with the efficiency principles discussed above, for the following reasons:

Figure 12: Apportionment of Per Line Costs in Accordance with the Principle that Each Operator Bears its Own Costs

Efficiency factor	Comment
Cost causation and benefits	As ACCC states, "customer transfer costs...are similar to other exit costs incurred in a large number of competitive markets when customers change providers of service...in competitive markets, service providers recover these costs from their customers." ⁵⁶ Costs of each operator's portability reassignment systems should be signalled to end users through the operator's charges, just as with the costs of other systems deployed by an operator to provide service.
Cost minimisation	Requiring entrants to pay for incumbent's costly and inefficient reassignment raises entrants' costs of competing against the incumbent.

⁵⁵ ACCC, Pricing Principles for Mobile Number Portability, May 2001, para 6.3.1.

⁵⁶ ACCC, Pricing Principles for Mobile Number Portability, May 2001, para 6.3.1.

Efficiency factor	Comment
Promoting competition	On overseas evidence, individual porting charges have material impact on level of porting by raising switching barriers.

84. Finally, TelstraClear notes that requiring contribution by other operators to some categories of operator-specific costs but not others itself could be distorting. For example, if each operator is to bear its own system set-up costs yet can pass on per line costs, this may provide an incentive to adopt a technique that shifts more of the costs onto per line charges. The consistent application of one apportionment approach, such as each operator bears its own costs, across all cost categories is more likely to produce an efficient, non-distorting outcome.

4.5.2 Industry Common Costs

85. TelstraClear believes that the efficiency principles discussed above require that common industry costs be shared between all number portability participants, both donor operators and recipient operators, and in a way which reflects their share of the total pool of potential porting customers, for the following reasons:

Figure 13: Apportionment of Common Industry Costs

Efficiency factor	Comment
Cost causation and benefits	As all customers benefit from number portability, apportioning common industry costs between all operators (donors and recipients) in proportion to their customer bases ensures that all customers make an equal contribution to common industry costs. Donor operators benefit from number portability by being able to complete calls and should therefore contribute to common industry costs.
Cost minimisation	Requiring that all participants which are involved in the selection of the technical solution contribute to the common industry costs ensures that all decision makers have an incentive to choose the most cost effective common platform.
Promoting competition	Apportioning industry costs on a basis which does not reflect each operator's costs disproportionately loads portability costs onto entrants.

86. TelstraClear proposes that the industry common costs should be apportioned on the basis of the proportion of active numbers which each operator holds, for the following reasons:

- a using active numbers as the basis to apportion the costs of a number portability system is appropriate because costs are being shared on the basis of the relative use which each operator makes of numbers which are potentially portable. TelstraClear has previously proposed in the NAD apportioning common industry costs based on numbering blocks, but not numbers within blocks or all blocks themselves may be actively used by an operator; and

- b using active numbers is a better measure than number of lines because:
 - i. individual consumers may be more or less intensive users of numbering resources: residential customers may use one or two numbers per line but business customers may use 100 or more DDIs across 8-10 lines. Ports involving residential lines, therefore, will be less complex and resource intensive than ports involving DDI blocks; and
 - ii. service providers are able to use numbers without owning the associated lines or associating the numbers with lines at all; and
 - c Revenue, as the TSO proceedings show, is complex and controversial to calculate.
87. There will need to be financial and accounting procedures to implement cost apportionment of common industry costs, including to determine the period over which to assess each operator's proportion of active numbers for the initial capital contribution, any capital contributions to be made by operators who begin to use number portability after the industry platform has been funded by initial participants and when to assess each operator's proportion of active numbers for the purposes of the annual contributions. TelstraClear believes that once the Commission has established the allocation principle for common industry costs, the industry should be able to negotiate the financial and accounting procedures to implement. If agreement cannot be reached, the cost apportionment determination could provide for the Commission to resolve this.

5 CONCLUSION

88. The end of the industry process to write the technical specifications for number portability is within sight. However, TelstraClear is concerned that the industry process may come to a halt unless the issue of cost apportionment can be quickly resolved. The Commission should not wait until finalisation of the codes to make its costs apportionment determination because the industry may never get to that point unless cost apportionment is resolved now.
89. There is a strong international consensus that the competitive and consumer benefits of number portability are undermined if incumbents which currently benefit from the lack of number portability can shift most or all of the costs of number portability to entrants.
90. Accordingly, TelstraClear proposes that the costs of number portability should be apportioned as follows:
 - a. each operator should bear its own costs of number portability, including system set-up, additional call conveyance and per-line costs, with the exception of additional call conveyance where the donor network is used as the transit network for re-routing; and
 - b. each operator should contribute to common industry costs based on its share of the total pool of end-users using numbers which can be ported, such as by calculating the contribution based on active numbers of each operator as a proportion of the total number of active numbers.