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COMMERCE COMMISSION

Determination on the multi-party application for determination of 'local telephone number portability service' and 'cellular telephone number portability service' designated multinetwork services

Decision 554

Final Determination under section 39 of the Telecommunications Act 2001 ('the Act') in the matter of an application for determination for designated multi-network services under section 31 of the Act by:

TELSTRACLEAR LIMITED
TELECOM NEW ZEALAND LIMITED
VODAFONE NEW ZEALAND LIMITED
CALLPLUS LIMITED
COMPASS COMMUNICATIONS LIMITED
IHUG LIMITED
WORLDXCHANGE COMMUNICATIONS LIMITED

The Commission:	Douglas Webb Donal Curtin Shaan Stevens
Summary of Application:	The Commission received two multiparty applications for determination in respect of the local telephone number portability service and the cellular telephone number portability service. TelstraClear Limited, Vodafone New Zealand Limited and Telecom New Zealand Limited jointly applied for a determination under section 31(a) of the Act. TelstraClear Limited, Callplus Limited, Compass Communications Limited, IHUG Limited and WorldxChange Communications Limited jointly applied for a determination, under section 31(b) of the Act.
Date of Determination:	31 August 2005

NO PARTS OF THIS REPORT ARE CONFIDENTIAL

CONTENTS

LIST OF TERMS AND ABBREVIATIONS[1]

Access Provider	means every person who operates- (a) a PSTN to which numbers have been allocated; and (b) a telephone service that relates to that number portability service
Access Seeker	means any person who- (a) operates a PSTN to which numbers have been allocated; and (b) operates a telephone service that relates to that number portability service; and (c) seeks access to that number portability service
the Act	means the Telecommunications Act 2001
Bilateral Agreement	means an agreement between a party to this determination and another party (who may also be a party to this determination).
Capex	means capital expenditure
Cost Allocation Application	means the application made under section 31(b) of the Act by TelstraClear Limited, CallPlus Limited, Compass Communications Limited, IHUG Limited and WorldxChange Communications Limited on 26 March 2003.
Donor Network Operator or DNO	means the operator whose customer is porting their number to the RNO
Donor Carrier	means the Carrier that has been allocated the Number by the Numbering Administration Deed ('NAD'), or that is recognised by the NAD as having been allocated the Number.
Functions Application	means the application made under section 31(a) of the Act by Telecom New Zealand Limited, TelstraClear Limited and Vodafone New Zealand Limited on 24 December 2004.
Industry Portability Management System or IPMS	means the system described in the LMNP Terms.
LMNP	means Local and Mobile Number Portability
LMNP Code	means the draft Code for Local and Mobile Number Portability in New Zealand developed by the Telecommunications Carriers' Forum and annexed to the Functions Application

[1] Where a term or abbreviation is defined in the Telecommunications Act, the statutory definition is adopted for the purposes of this list.

LMNP Terms	means the Terms for Local and Mobile Number Portability in New Zealand (attached as Appendix 3 to this determination).
Local Number	means an 8 digit number, in the form: area code + NXXXXXX where area code equals 3,4,6,7 or 9 and 'N' equals digits 2 to 9 (excluding 50AB).
Local Number Portability or LNP	means a service that enables an end-user of a fixed telephone network service to change providers of that service but to retain the same telephone number within a local calling area.
Mobile Number	means a number in the form 02N + XXXXXX[X] where 'N' equals 1,5,7 or 9 and other cellular numbers allocated by the NAD, or recognised by the NAD as having been allocated.
Mobile Number Portability or MNP	means a service that enables an end-user of a cellular telephone network service to change providers of that service but to retain the same telephone number (including the same cellular network access code).
Network	means the system comprising telecommunication links to permit telecommunication.
Network Code	means the draft Network Code for Local and Mobile Number Portability in New Zealand developed by the Telecommunication Carriers' Forum and annexed to the Functions Application.
Network Terms	means the Network Terms for Local and Mobile Number Portability in New Zealand (attached as Appendix 4 to this determination).
Number	means a Local Number, a Mobile Number or both, as the case requires
Numbering Administration Deed or NAD	means the organisation established under the Numbering Administration Deed dated 20 December 1998, or any such successor organisation or agreement that may be formed.
Number Portability Services	means the local telephone number portability and cellular telephone number portability regulated services under Schedule 1 of the Act.
Opex	means operational expenditure
Port or Porting	means a process which achieves LMNP.
PSTN	means Public Switched Telephone Network. A dial-up telephone network used, or intended for use, in whole or in part, by the public for the purposes of providing telecommunication between telephone devices
Recipient Network Operator or RNO	means the operator whose customer has ported their number from the DNO

Service Provider	means any person providing a local service or mobile service to a customer and who has the billing relationship with the customer for that service. The same person may be both a Carrier and a Service Provider.
Short Message Service or SMS	means an alphanumeric messaging service provided by mobile networks
TCF	means the Telecommunications Carriers' Forum
Telephone Device	means any terminal device capable of being used for transmitting or receiving any communications over a network designed for the transmission of voice frequency communication

EXECUTIVE SUMMARY

(i) This determination sets out the formula for allocating the cost of delivering the Number Portability Services between the access seekers and all access providers of the service, the functions that must be performed by a system for delivering the Number Portability Services and the standard to which those functions must be performed.

(ii) The determination relates to two multiparty applications received by the Commission under section 31 of the Act for determination of local and cellular telephone number portability services.

(iii) The Commission issued separate draft determinations with respect to each application and consulted with interested parties in each case. This determination is the Commission's decision on all matters relating to both applications.

(iv) The Commission is required to make the determination it considers will best give, or is likely to best give, effect to the purpose of promoting competition in telecommunications markets for the long-term benefit of end-users of telecommunications services within New Zealand. The Commission is satisfied that this determination meets that requirement.

(v) Four classes of costs arise from the implementation of number portability: industry common system costs, per-operator set-up costs, per-line set-up costs, and additional call conveyance costs. Those costs are to be borne as follows:

- *Industry common system costs:* Allocated amongst all providers of local and cellular telephone number portability services on the basis of market share based on active numbers.
- *Per-operator set-up costs:* Each operator will bear its own costs.
- *Per-line set-up costs:* Recoverable by the donor network operator from a recipient network operator.
- *Additional call conveyance costs:* Each operator will bear its own costs.

(vi) The parties agreed on a number of matters related to the functions of the number portability system and the standard to which those functions must be performed. The Commission has considered the agreed terms in determining the functions and standards of the number portability system.

(vii) In respect of the issues on which the parties were unable to reach agreement, the Commission has decided as follows:

- The local telephone number portability service allows an end-user of a fixed telephone network service to change providers of that service but to retain the same telephone number within a local calling area. A fixed telephone network service is characterised by a connection between the local switch and a telephone device located in or on a building with which the user has some form

of relationship of occupation or use. The telephone device is not required to be physically attached to the building but should normally be located on the end-user's premises. Provided the above conditions are satisfied, the connection may be provided using any type of wired or wireless network technology (including cellular technology);

- A customer with a ported local number wishing to move premises can retain the number provided that the new premises is within the same donor carrier's local calling area. The local calling area is that geographic area defined by the donor carrier within which customers of the donor carrier have access to a local service;

- The exemptions processes set out in the Network Terms are sufficiently robust to deal with all aspects of the Network Terms and any resultant pass-through to the LMNP Terms;

- The provisions enabling an appointed enforcement agency to issue 'notices of breach' and 'public censure notices' for breaches of equivalent service and/or service levels are sufficient, given that parties can also seek enforcement of the determination through the High Court under section 61 of the Act;

- It is not necessary for the dispute resolution procedures to apply where disagreement arises regarding a decision as to whether an approved exemption exempts a carrier from meeting its obligations; and

- In respect of the termination of internationally originated SMS, providers of cellular telephone network services must provide equivalent service to end-users when cellular telephone number portability becomes available.

(viii) The date of inception for the determination is the date of the determination. The determination will expire on the earlier of 19 December 2010 or the date on which the services cease to be designated multinetwork services under the Act.

(ix) Access providers are required to provide Number Portability Services consistent with this determination not later than 1 April 2007.

INTRODUCTION

1. The Act regulates the supply of telecommunications services in New Zealand.

2. The Commerce Commission ('the Commission') has a range of responsibilities under the Act, including making determinations in respect of designated multinetwork services. An application can be made to the Commission under section 31 for a determination of all or some of the terms on which a designated multinetwork service must be supplied during the period of time specified in the determination.

3. This determination is made with respect to the local and cellular telephone number portability services, which are designated multinetwork services set out in Schedule 1 of the Act. The Commission considers that this determination on the local and cellular telephone number portability services will best give effect to the purpose as set out in section 18.

4. The local and cellular telephone number portability services are expected to promote competition for the long-term benefit of end-users by enabling customers to switch service providers while maintaining their existing telephone numbers.

5. This determination is set out as follows:

    - *The Applications* – a description of the Applications received by the Commission with respect to the local and cellular telephone number portability services
    - *The Framework of the Determination* – a description of the legislative framework under which this determination is made
    - *Cost Allocation Methodology* – sets out the formula for how the cost of delivering the service must be apportioned between the parties and every person who becomes an access provider after the determination is made
    - *Functions and Standards* – sets out the functions that must be performed by a system for delivering the service and the standard to which those functions must be performed. Terms relating to the functions and standards are attached as the LMNP and Network Terms.
    - *Date of Inception /Expiry*
    - *Terms of Implementation*

THE APPLICATIONS

6. The Commission received two multiparty applications for the determination of local telephone number portability and cellular telephone number portability services.

Cost Allocation Application

7. On 26 March 2003, TelstraClear Limited ('TelstraClear'), CallPlus Limited ('CallPlus'), Compass Communications Limited ('Compass'), IHUG Limited ('IHUG'), and WorldxChange Communications Limited ('WorldxChange') jointly filed the Cost Allocation Application. A letter supporting the Application was also received from Econet Wireless Limited ('Econet').

8. The Cost Allocation Application sought a determination by the Commission in regard to the local telephone number portability service and the cellular telephone number portability service. [2]

9. Under section 31, an access seeker of a designated multinetwork service may, subject to sections 32 and 33, apply to the Commission for a determination of:

    a. the functions that must be performed by a system for delivering the service and the standard to which those functions must be performed; and
    b. the formula for how the cost of delivering the service must be apportioned between the access seeker and all access providers of the service, ('the formula').

10. The Cost Allocation Application sought a determination in relation to section 31(b) to determine a formula for how the cost of delivering the service must be apportioned between the access seekers and all access providers of the service.

Functions Application

11. On 24 December 2004, TelstraClear, Telecom New Zealand Limited ('Telecom'), and Vodafone New Zealand Limited ('Vodafone') jointly filed the Functions Application.

12. The Functions Application also sought a determination by the Commission in regard to the local telephone number portability service and the cellular telephone number portability service[3].

13. The Functions Application sought a determination of the functions that must be performed by a system for delivering the service and the standard to which those functions must be performed.

[2] Section 31(b) Application for Determination of Multi-network services, 26 March 2003, paragraph 1.
[3] Section 31(a) Application for Determination of Multi-network services, 24 December 2004, paragraph 1.

14. The parties advised the Commission that they had reached agreement on a number of terms related to the functions that must be performed by a system for delivering the service and the standard to which those functions must be performed.[4]

15. The agreed terms were submitted as an attachment to the application in the form of two draft codes prepared by the TCF working parties.

16. The Functions Application requested that the Commission:

    a. make a determination under section 31(a) of the Act that is in the form of the Network code and the LMNP code (Subject to sub-paragraph (b) below);
    b. seek submissions from the Applicants and make a determination in respect of those issues not agreed by the TCF; and
    c. Merge the section 31(a) and 31(b) determinations into a single final determination (including the alignment of dates for submissions on the determinations).

17. On 21 February 2005, the parties submitted updated versions of the draft codes that contained further agreed terms to be considered by the Commission in preparing its determination.

18. On 2 March, the parties submitted to the Commission further agreed terms in the form of an Operational and Support Manual for LMNP.

19. On 7 April, the parties submitted an updated version of the draft LMNP Code that contained minor amendments to be considered by the Commission in preparing its determination.

20. On 1 August, the parties submitted a further set of proposed amendments to the draft LMNP Code.

21. The Functions Application requested that the Commission decide on the following key matters in particular:

    a. Porting of local telephone numbers from fixed to cellular telephone networks;
    b. Additional future services and legislative amendments;
    c. The scope of exemptions to be issued under the Network Terms;
    d. Local calling area;
    e. Ongoing Non-Compliance with Service Levels and Equivalent Service Criteria;
    f. Contesting enforcement agency[5] decisions in respect of exemptions; and
    g. Internationally originated SMS.

22. In preparing this determination, the Commission has considered the agreed terms jointly submitted by the parties, and the submissions received.

[4] Section 31(a) Application for Determination of Multi-network services, 24 December 2004, paragraph 1.
[5] The meaning of enforcement agency in this context is taken from the Network Terms definitions, page 9.

FRAMEWORK FOR THE DETERMINATION

23. This section sets out the legislative framework under which the determination is made.

24. Section 18 provides that the purpose of Part 2 and Schedule 1, under which this determination is made, is to promote competition in telecommunications markets for the long-term benefit of end-users[6].

25. Section 39 requires that as soon as practicable after completing any consultation, conferences, or any public hearing under section 38, or if there is no consultation, conferences, or public hearing, after the closing date for submissions under 36(1)(d)(i), the Commission must,-

    a. prepare a determination; and
    b. give a copy of the determination to all the parties to the determination; and
    c. give public notice of the draft determination.

26. Section 40 sets out the matters to be included in a determination. Section 40(1) requires that, subject to sub-section 2, the determination must include –

    a. the functions that must be performed by a system for delivering the service and the standard to which those functions must be performed; and
    b. the formula for how the cost of delivering the service must be apportioned between the parties to the determination and every person who becomes an access seeker; and
    c. the requirement that all the parties to the determination provide the service by means of a system that is consistent with the functions and the standards set out in the determination; and
    d. the requirement that any party to the determination make payments to an access provider of amounts calculated in accordance with the formula set out in the determination; and
    e. the reasons for the determination; and
    f. the terms and conditions on which the determination is made; and
    g. the actions (if any) that a party to the determination must do or refrain from doing; and
    h. the expiry date of the determination.

27. Section 40(1)(a) applies only to the extent that the matters referred to in that paragraph have not already been provided for in an approved code. There are no approved codes relating to the multi-network services that are the subject of the Functions Application. Accordingly, section 40(2) does not apply.

[6] 'The end-user is the ultimate user or consumer of telecommunications services. It is not restricted to subscribers, but extends to telecommunications' users generally', Commerce Commission Determination on the TelstraClear Application for Determination for Designated Services, Decision 477, 5 November 2002, p.10.

Single Determination

28. The Commission has received separate applications for the local and cellular telephone number portability services. The Cost Allocation Application sought a determination in relation to section 31(b) to determine a formula for how the cost of delivering the service must be apportioned between the access seekers and all access providers of the service. The Functions Application sought a determination under section 31(a) of the functions that must be performed by a system for delivering the service and the standard to which those functions must be performed. The Commission has issued a separate draft determination for each application.

29. The applicants requested that the Commission's processes for the two applications be synchronised.[7]

30. The Commission decided on 5 April 2005 to release a single final determination under section 39 in relation to both applications.

Relevant Access Seekers and Access Providers

31. For the purposes of this determination, the Commission is required to determine the eligibility of both the access seekers and access providers of the Number Portability Services. An access seeker and access provider are persons who operate a PSTN to which numbers have been allocated and a telephone service that relates to the number portability service. An access seeker must also seek access to the number portability service.

32. The access providers of the Number Portability Services are consistent across both the Functions Application and the Cost Allocation Application.

33. The access seekers in relation to the Cost Allocation Application are TelstraClear, CallPlus, Compass, IHUG and WorldxChange.

34. In the Functions Application, the access seekers are Telecom, TelstraClear, and Vodafone.

35. The Commission's determination regarding the eligibility of access seekers and access providers as at the date of this determination is attached as Appendix 1 and summarised as follows:

[7] Section 31(a) Application for Determination of Multi-network services, 24 December 2004.

COMPANY	Access Provider eligibility		Access Seeker eligibility			
			Cost Allocation Application		Functions Application	
	Local telephone number portability service	Cellular telephone number portability service	Local telephone number portability service	Cellular telephone number portability service	Local telephone number portability service	Cellular telephone number portability service
Telecom	Yes	Yes	-	-	Yes	Yes
TelstraClear	Yes	Yes	Yes	Yes	Yes	Yes
Vodafone	No	Yes	-	-	No	Yes
CallPlus	Yes	No	Yes	No	-	-
Compass	Yes	No	Yes	No	-	-
IHUG	Yes	No	Yes	No	-	-
WorldxChange	Yes	No	Yes	No	-	-

Note: a dash (-) means that the company was not a party to the application.

36. For ease of reference, 'parties to the determination' refers to access seekers, and access providers from time to time, including any person that becomes an access provider subsequent to the determination being made.

37. There is potential for entry into and exit from the local and cellular telecommunications markets throughout the term of the determination. The Commission will continue to monitor the eligibility of access providers throughout the term of the determination in order to ensure that an accurate register of access providers is maintained. Where necessary, the Commission will issue an updated statement which will serve as an authoritative record of the eligibility of access providers in relation to the Number Portability Services.

38. Any party that is determined by the Commission to be an eligible access provider after the date of this determination is bound by this determination from the date at which they are determined to be an eligible access provider.

Cost Allocation Formula

39. In this determination the Commission has provided a formula for how the cost of delivering the Number Portability Services must be apportioned between the parties. For the industry common system costs and the per-line set-up costs, the parties are required to use the formula and the inputs provided by the Commission to calculate the portion of these costs which each party is required to pay, and to make payments accordingly.

LMNP Terms and Network Terms

40. The LMNP Terms and Network Terms are attached as Appendices 3 and 4 respectively and form part of this determination. Also attached as Appendices 5 and 6 are marked up versions of the LMNP Terms and Network Terms respectively as

guidance to the amendments made by the Commission to the Draft LMNP and Network Terms in the Functions Draft Determination. The marked up versions in Appendices 5 and 6 are for information purposes only and do not form a part of this determination.

TECHNICAL SOLUTIONS FOR NUMBER PORTABILITY

41. Number portability requires a method of determining, every time a customer makes a call, whether the called customer has switched to an alternative provider and, if so, to which provider. This requires a modification to the underlying network infrastructure and, depending on the chosen solution, additional conveyance of calls.

42. The technical solutions used for effecting number portability can be grouped into either 'on-switch' or 'off-switch' solutions.

43. Implementing an on-switch number portability solution requires less up-front infrastructure investment than implementing an off-switch solution.[8] However, an on-switch solution may require considerable network capacity for additional conveyance of calls to ported numbers, particularly where a large proportion of numbers have been ported, depending on the type of on-switch solution used.

44. Off-switch solutions using intelligent network techniques will allow the network to terminate calls using the most direct route. Accordingly, the additional costs associated with call conveyance are considerably less where off-switch solutions are utilised.

45. In some cases, a network operator may adopt a combination of different technical solutions that result in the efficient delivery of number portability on that particular network.

46. Number portability has been introduced in various countries at different times and using various technologies. A range of countries, including the UK, the US, Australia and Hong Kong, have introduced local number portability, initially using on-switch solutions. Subsequently, some have sought to move to off-switch intelligent network solutions.

The New Zealand Solution

47. Under this determination, an IPMS will be established to provide coordination and management of the porting process. The IPMS will allow the parties to implement on-switch or off-switch solutions in their networks.

48. Accordingly, the solution selected by a given party will depend on the characteristics of the network operated by that carrier. The cost allocation formula determined by the Commission is intended to provide appropriate incentives for network operators to adopt the most efficient solution to effect number portability.

[8] Europe Economics and ARCOME SA, *Study on the Cost Allocation for Number Portability, Carrier Selection, and Carrier Pre-Selection, Final Report for DGXIII of the European Commission, Volume II,* October 1999.

COST ALLOCATION METHODOLOGY

Costs Associated With Number Portability

49. The development of a formula for allocating the cost of delivering the Number Portability Services requires a classification of the costs associated with number portability. The costs associated with number portability fall into a limited number of categories, each of which can be analysed and allocated separately. Some costs are fixed and do not vary with the take-up of number portability, while others vary directly with the number of porting customers.

50. In determining the cost categories defined, the Commission has considered the submissions received from parties on the Cost Allocation draft determination. The submitting parties were generally in agreement with the cost categories adopted by the Commission.

51. Telecom argues that the common costs category should include the operator-specific system costs.[9] The Commission considers however that the separation of industry common costs and operator-specific costs is necessary to reflect the different characteristics of these two cost categories.

52. For the purpose of this determination, the Commission has adopted the following cost categories:

- industry common system costs;
- per-operator set-up costs;
- per-line set-up costs; and
- additional call conveyance costs.

Industry common system costs

53. Industry common system costs are the costs associated with developing the technical specifications for and the design and build of the IPMS and other common systems. These costs also include the cost of implementation services and ongoing management services. Industry common system costs include both Capex and Opex.

Per-operator set-up costs

54. Per-operator set-up costs are the costs incurred by an operator in developing its network to provide number portability including the switches, systems and processes. These costs also include the costs of establishing and maintaining routing databases, upgrading network switches, modifying existing software, and building and operating links to access the IPMS. Per-operator set-up costs include both Capex and Opex.

[9] Telecom New Zealand: *Submission on Number Portability*, 18 August 2004.

They do not include additional call conveyance costs which are covered separately below.

Per-line set-up costs

55. Per-line set-up costs are the incremental costs that are efficiently incurred when customers port their number from one operator to another, and include the costs associated with modifying customer data in the corresponding databases. Per-line set-up costs are incurred mainly by the DNO rather than the RNO.

56. In the case of subsequent porting, the original DNO does not incur any cost while the new DNO (i.e. the original RNO), incurs the same type of costs as those associated with first-time porting.

Additional call conveyance costs

57. Additional call conveyance costs are the additional costs incurred by the originating operator as a result of the processing and routeing of a call to a number which has been ported, over and above the cost of processing and routing a call to a non-ported number. Additional call conveyance costs do not include the costs incurred by an originating operator in conveying calls to the interconnection handover point and the costs of terminating calls on the terminating operator's network.

Objectives and Principles in Allocating Costs

58. The Commission has considered the impact of allocating costs incurred in the provision of number portability to the various market participants on:

- the incentives of operators to compete with each other for customers; and
- the switching costs faced by customers, i.e. the cost to a customer of porting a number.

59. A cost allocation methodology determines which costs are borne by each market participant, which may differ from how costs are incurred in the first instance.

60. In the Cost Allocation Draft Determination, the Commission proposed the following principles as guidance in allocating the costs of number portability:

- Cost minimisation
- Cost causation
- Alignment of costs with benefits
- Practicality

61. Telecom submitted that the Commission should justify the chosen principles with respect to section 18 of the Act, and argued that dynamic efficiency is most relevant to the cost allocation. Telecom considered that dynamic efficiency is best achieved through a focus on the 'cost causation' and the 'alignment of costs with benefits' principle.[10]

62. Vodafone requested that the Commission include two additional principles - 'reduction of switching costs' and the 'widest spread of fixed cost' (in the case where cost causation offers no guidance).[11] TelstraClear agreed with the principles adopted by the Commission and supported Vodafone's proposed principle that the 'widest feasible spread of costs is likely to be most efficient'[12].

63. The Commission considers that the additional principles suggested by Vodafone overlap with the cost allocation principles adopted by the Commission, and therefore provide no additional value as guiding principles in this cost allocation exercise.

64. In determining a cost allocation formula, the Commission is required under section 18(2) to consider the efficiencies that are likely to result from various cost allocation methodologies. The Commission has interpreted efficiencies in the Act as referring to allocative efficiency, productive efficiency and dynamic efficiency.[13]

[10] Telecom Submission, 7 February 2005, pg 9.
[11] Vodafone submission, 7 February 2005.
[12] TelstraClear Cross-submission, 4 March 2005.
[13] *Commerce Commission*, A Guide to the role of the Commerce Commission in making Access Determinations under the Telecommunications Act, 28 May 2002.

65. The Commission has sought to strike a balance between these three forms of economic efficiency in order to maximise the benefits to end-users through the promotion of competition.

66. Accordingly, the Commission has adopted the following principles in determining the cost allocation formula:

- *Cost minimisation*: the cost allocation mechanism should provide an incentive to operators to minimise the cost of providing number portability. This principle is consistent with productive efficiency

- *Cost causation*: the cost allocation mechanism should result in charges to porting customers that send the appropriate price signals on how much porting should be consumed. In other words, cost causation implies that those customers who cause costs should pay those costs. Cost causation is consistent with both allocative efficiency and dynamic efficiency

- *Alignment of costs with benefits*: the cost allocation mechanism should provide for the recovery of costs from all beneficiaries. The cost allocation mechanism should recognize that customers who port their numbers are not the only beneficiaries. It is not related to fairness since allocative efficiency requires that porting customers face prices that reflect the additional benefit to customers generally. Beneficiaries will include porting customers, non-porting customers, and parties to the determination. The principle is consistent with allocative efficiency.

- *Practicality*: the cost allocation mechanism should be both straightforward to implement and to enforce. If an impractical cost allocation solution is adopted, resources would be diverted away from their most efficient use (i.e. to resolve disputes, procedural issues, etc.), leading to productive and allocative inefficiencies. Inefficiencies could raise the cost of number portability and diminish the benefits.

67. The principles may in some cases provide conflicting guidance with regards to the optimal cost allocation mechanism. In such cases, the Commission seeks to strike an appropriate balance between these principles in a way that best promotes the purpose of the Act.

68. The principles serve only as operational guidance in determining the cost allocation formula. The Commission's primary purpose in determining the cost allocation formula is to promote competition for the long-term benefits of end-users.

The Benefits of Number Portability

69. The purpose of Part 2 of the Act is to promote competition in telecommunications markets for the long-term benefits of end-users. The absence of number portability hinders the competitive process by raising the switching costs that customers must incur in order to change their service provider. Switching costs are generally detrimental to welfare because they make entry more difficult and markets less competitive.[14] The ability for consumers to retain their telephone numbers when switching between telecommunications providers removes an impediment to the development of competitive telecommunications markets by lowering switching costs.

70. Economic literature shows that markets where switching costs are significant generally perform less efficiently when compared to markets with low switching costs, and that high switching costs adversely affect competitive pressures.[15] The literature also suggests that in markets where the proportion of locked-in customers relative to 'unattached' customers is high and where firms cannot perfectly price discriminate between old and new customers, switching costs lead to higher prices. Thus, lower switching costs can be expected to lead to more intense competition and to efficiency gains.

71. It is worth noting, however, that the percentage of customers porting their numbers is only a partial indicator of the benefits and effect of number portability. The pro-competitive effect of number portability may not be reflected in high switching rates. For example, because number portability facilitates switching, operators may lower prices, improve their quality of service, and expand the range of services offered. To the extent that they do so, switching rates may not increase dramatically following the introduction of number portability.

72. Number portability brings benefits to porting customers, non-porting customers and telecommunications operators. Those benefits fall into three broad categories[16]:

- **Type 1 Benefits:** These benefits accrue to customers who port their numbers. These benefits include:
  - The benefits to customers who switch supplier as a result of number portability being available. For these customers, the benefits are defined as the benefits derived out of improvements in price, quality, and features that are provided by the competing service provider, less the cost of switching when number portability is available.
  - The benefits to customers who would have switched service providers even in the absence of number portability. For these customers, the benefit of

[14] See Motta, M. 2004, *Competition Policy. Theory and Practice*. New York: Cambridge University Press, p81 and Klemperer, P. 1995 Competition When Consumers Have Switching Costs: An Overview, *Review of Economic Studies*, pp. 515-539.

[15] See Klemperer, (1995) above Farrell, J., Klemperer, P., 2004, Coordination and Lock-In: Competition with Switching Costs and Network Effects, December, Forthcoming in *Handbook of Industrial Organization vol. 3*, edited by Armstrong, M., Porter, R.H.; and NERA, 1993, Switching Costs, Economic Discussion Paper 5, A Report prepared for the Office of Fair Trading and the Department of Trade and Industry.

[16] This categorisation of the benefits of number portability is derived from Monopolies and Mergers Commission, *Telephone Number Portability: A Report on a reference under section 13 of the Telecommunications Act 1984*, 1995.

number portability is the difference between the switching costs when moving to another service provider on a new number and the switching cost when moving to another service provider on a ported number.

Thus, depending on the type of customer, the benefits of number portability accruing to porting customers will include savings to business users through avoiding change in stationery and advertising, lower tariffs, and enhanced quality and features that competing service providers may offer.

- **Type 2 Benefits:** These benefits correspond to efficiency improvements, price reductions and greater variety of products and services resulting from increased competitive pressures induced by the introduction of number portability. Because number portability facilitates switching and lowers its cost, it reinforces market competition. These types of benefits accrue to all users in those markets. Additionally, all operators also derive benefits from number portability as it makes customers more contestable.

- **Type 3 Benefits**: These benefits correspond to the convenience and cost savings enjoyed by all users as a result of fewer numbers being changed (e.g. fewer misdialled calls, directory enquiry calls, updates to directory information and changes to information stored in customer equipment).

73. The relative magnitude of the different types of benefits depends to a certain extent on the level of competition in the market when number portability is introduced. Where the market is not effectively competitive, external benefits are likely to be greater than internal benefits. The increased competitive pressure might bear on prices and service quality even without much actual switching and porting.[17] Type 1 and Type 3 benefits depend on the number of lines ported, and might therefore be higher in a competitive market where customers face more choice and where switching is likely to be more common.

74. The Commission notes that quantifying the net benefits of number portability, and in particular external benefits (Type 2 benefits), is a difficult task. Equally difficult is the task of assessment of the distribution of the benefits. The Commission has not attempted to quantify the net benefits of number portability.

75. A cost benefit analysis carried out for the UK regulator found that Type 2 benefits were by far the largest, accounting for 69 per cent of total benefits, whereas Type 1 benefits accounted for 30 percent and Type 3 benefits for only one per cent of the total.[18] By contrast, for cellular number portability in Hong Kong, the Type 1 benefits were high relative to the Type 2 and Type 3 benefits, accounting for 93% of total benefits (with Type 2 benefits accounting for only 2% and Type 3 benefits for 5% of

[17] The Type 2 benefits associated with number portability should take into account only the increase of competition (and hence efficiency and innovation benefits associated with number portability) rather than the impact of competition as a whole.

[18] NERA (1994), *Cost-Benefit Analysis of Number Portability*, a Report for OFTEL, London: NERA. See also the discussion on the results and methodology of the study in the Monopolies and Merger Report (1995), above n16.

the total).[19] This distribution of benefits may be explained by the fact that the mobile market in Hong Kong was already very competitive at the time when number portability was contemplated.[20]

76. Telecom disagrees with the Commission's analysis of the benefits of number portability. In particular, Telecom disagrees with the Commission's views on:[21]

    a. the beneficiaries;
    b. the magnitude and distribution of benefits amongst beneficiaries;
    c. external benefits.

77. Telecom notes that in the Cost Allocation Draft Determination, the Commission's definition of Type 1 benefits includes 'improvement to price and service features that may be provided by competing service providers.' Telecom argues that this statement treats reductions in transaction costs for a porting customer as if it was a reduction in the cost of service providers.

78. The Commission disagrees with Telecom's argument, and notes that the statement makes no such assumption. The only assumption underlying this statement is that porting customers will benefit as a result of favourable price and/or service features being provided by competing service providers. It is these benefits (net of switching costs) that will entice a customer to switch to a competing service provider.

79. Telecom argues that benefits are best measured in terms of the change in switching costs faced by customers where number portability is available. The Commission disagrees, and notes that in the case of a customer who switches supplier as a result of number portability being available, the benefits are not equal to (and are in fact less than) the change in switching costs. The Commission has amended its definition of Type 1 benefits in order to clarify its view on the nature of this category of benefits.

80. Telecom also argues that the magnitude of Type 2 benefits resulting from the introduction of number portability will only be marginal. Further, Telecom argues that it is not clear that Type 2 benefits will follow from number portability, or that they will accrue to all users in the market.

81. The Commission notes that Telecom's assessment of Type 2 benefits is not consistent with available evidence from other jurisdictions related to the presence of external benefits of number portability.[22]

82. The number of porting customers serves only as a partial indicator of the benefits of number portability. Type 2 benefits can exist in the absence of high customer churn rates.

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[19] NERA and Smith System Engineering (1998) *Feasibility Study & Cost Benefit Analysis of Number Portability for Mobile Services in Hong Kong,* A Report for OFTA, London.
[20] The Hong Kong mobile telecommunications market is one of the most competitive in the world and at the time of the MNP introduction (1999) there were seven network operators and eleven digital networks.
[21] Telecom Submission on Cost Allocation Draft Determination, 7 February 2005, Page 11.
[22] Europe Economics and ARCOME SA, *Study on the Cost Allocation for Number Portability, Carrier Selection, and Carrier Pre-Selection, Final Report for DGXIII of the European Commission, Volume II,* October 1999.

83. Telecom argues that Type 2 benefits will be marginal since the introduction of number portability is unlikely to produce price cuts in already competitive markets that are characterized by infrastructure-based competition.

84. The Commission disagrees with Telecom's claim that the relevant markets are highly competitive in New Zealand, and the corresponding argument that Type 2 benefits are marginal.

85. Previous assessments undertaken by the Commission have found markets to be characterised by limited competition. In its Decisions 497 and 525, the Commission found that there was limited competition in local access services markets.

86. While Telecom acknowledges that number portability will reduce switching costs to customers[23], it denies that lower switching costs will enhance competitive pressures. However, the Commission considers that lower switching costs will reduce the barriers to switch providers, and in turn, will heighten the probability that switching will occur to those service providers with a more desirable offering. The extent of the resulting competitive pressures will in turn benefit all users.

87. Telecom argues that the Commission has not accurately identified the beneficiaries of number portability and the magnitude of benefits accruing to those beneficiaries. Specifically, Telecom claims that the Commission has failed to recognise network operators as beneficiaries of number portability. It submits that the Commission's assessment of benefits should begin with:

> 'a recognition that the ability to port a number is an option for customers and competing network operators.'

Telecom submits that the introduction of number portability increases the value of this option. Telecom argues, under this approach, that both customers and network operators derive benefit from the increased value of the option to port. In particular, Telecom asserts that the benefits to competing network operators are inversely proportional to market shares.

88. The Commission acknowledges that network operators will benefit from number portability. However, the pro-competitive effects of number portability will result in a significant share of the benefits being passed on to end-users.

89. The Commission disagrees with Telecom that the benefits of number portability will accrue to service providers inversely proportionate to market share. A service provider that is unable to establish a competitive advantage in the market will not attract customers, and therefore will not derive any benefits from number portability, irrespective of its market share.

90. The Commission considers that Telecom's assessment of the benefits to operators resulting from number portability overstates the immediate benefits relative to the benefits that will accrue over time. While entrant network operators may be in a better position to win customers from the incumbent initially, the incumbent is equally in a position to win back those customers. Accordingly, the Commission considers that

[23] Telecom submission to the Commerce Commission, 7 February 2005, paragraph 44.

Telecom's argument that network operators' benefits are inversely proportional to market share is based on a short term assessment and is, therefore, not consistent with the long-term focus on end-user benefit required by section 18.

91. Network operators must be able to offer any-to-any connectivity, regardless of whether a customer has ported his or her number. When a Telecom customer ports his or her number, Telecom loses the access and calling revenues associated with the customer but will derive interconnection revenues from calls made by the customer to other Telecom customers. Telecom will also benefit by being able to charge its customers for calls they make to ported numbers in other networks.

92. Finally, the Commission considers that Telecom's 'option' analysis is flawed, in that it fails to recognize that the option to port lies primarily with customers and not with network operators.

93. TelstraClear agrees with the Commission's description of benefits and notes that the percentage of customers porting is only a partial indicator given the presence of external benefits. TelstraClear argues that all customers benefit from lower prices, enhanced competition, and greater choice, regardless of whether they port their numbers.[24]

94. TelstraClear considers that all operators will benefit from number portability since customer bases are more contestable. Additionally, TelstraClear notes that the benefits of number portability will accrue to both DNO's and RNO's.[25]

95. In relation to the benefits that accrue from number portability, Vodafone submits that:[26]

> 'it is reasonable to think that the competition benefits from portability justify not charging porting customers or RNOs the full costs of porting, and especially not charging them directly for the fixed setup costs'

96. Vodafone's assessment of the benefits associated with number portability is consistent with the Commission's understanding of those benefits.

[24] TelstraClear submission to the Commerce Commission, 7 February 2005, page 7.
[25] Ibid.
[26] Vodafone submission to the Commerce Commission, 7 February 2005, page 8.

Allocation of Costs

97. There are no significant differences between the nature of the costs incurred in providing local telephone number portability and those incurred in providing cellular telephone number portability. Accordingly, the determination provides a single cost allocation methodology to be applied to the costs of local telephone number portability as well as the costs of cellular telephone number portability**.**

98. The cost allocation methodology will apply to future operators who enter the market at such time as they become an eligible access provider under the Act.

99. In making this determination, the Commission expects that number portability will increase incentives for operators to compete with each other for customers and incentives for customers to switch between suppliers and retain their telephone numbers. The Commission also seeks to strike an appropriate balance between the cost causation, cost minimisation, alignment of benefits with costs and practicality principles.

100. The Commission recognises that the costs incurred by, or allocated to, the various operators may ultimately be recovered in full or in part from end-users. Costs may be recovered either directly from customers who port their numbers or from the customer base of each network through a mark-up to the prices of services generally. In practice, cost recovery can be expected to be a combination of both, consistent with the benefits arising from number portability.

101. If an operator is able to pass on the costs it incurs to another operator without any effective constraint, there will be little incentive for that operator to undertake efforts to reduce the level of those costs. Through inter-operator charges, an operator would be able to raise its rivals' costs and thereby undermine their ability to compete. As a result, an allocation mechanism that did not provide incentives for cost minimisation would result in the costs passed on to other operators being higher than would be required to compensate the access provider and therefore the benefits from number portability would be lower.

102. The allocation of costs amongst parties to the determination can affect the incentives for operators to compete for customers switching from other operators. If a receiving network operator were required to bear a large proportion of the total costs of number portability, those costs would likely be disproportionate in relation to the economic benefit of attracting an in-porting customer. Such a result would in turn weaken the incentives to compete for those customers.

Industry common system costs

Commission's Draft View

103. The Cost Allocation Draft Determination proposed that allocating industry common system costs amongst operators on the basis of market share (defined by active

numbers) would best fulfil the objectives of cost allocation and the cost allocation principles.

104. Additionally, the Cost Allocation Draft Determination stated that allocating costs in line with each operator's share of the market would result in an allocation that better reflects the external benefits of number portability which accrue to all customers rather than just those porting their numbers.

105. A significant proportion of industry common system costs will be capital expenditure incurred in building the IPMS. The Cost Allocation Draft Determination proposed that these costs will be financed initially by parties to the determination in proportion to their market shares. To prevent new entrants from free-riding on the investment made at the time of the introduction of number portability, new entrants would contribute to Capex and Opex over the term of the determination.

Submissions on the Cost Allocation Draft Determination

106. Telecom disagrees with the allocation, and argues that it ignores Type 1 benefits. In particular, Telecom submits that the Commission's proposed allocation method is based on an inaccurate assumption that the benefits of the investment in number portability reflect market share.

107. Telecom considers that the Commission does not provide an effective and workable mechanism for the allocation of costs to new entrants and argues that under the Commission's proposed method, new entrants will bear only the incremental costs of porting a number for each customer acquired.

108. In contrast to the Commission's view, Telecom considers that it is more efficient to charge the RNO the incremental cost of porting a number plus an appropriate share of common costs for each customer whose number is ported.

109. Telecom proposes that existing carriers meet 100% of common costs upfront (based on subscriber numbers) and contributing carriers absorb 50% of the cost paid. The remaining 50% would be recouped as a fixed levy charged on a per port basis, paid back to original contributors in proportion to their original contribution on a periodic basis. Telecom acknowledges that the mechanism is not exact in allocating the costs to relevant beneficiaries but argues that it is more efficient than the Commission's proposal.

110. TelstraClear agrees with the philosophy behind the Commission's methodology for allocating industry common system costs, but notes that under the Commission's proposal, an entrant's contribution towards the costs would be negligible since it would not have many customers[27]. The Commission acknowledges that under the approach described in the Cost Allocation Draft Determination, an entrant with very few customers would only contribute a small amount to the industry common system cost. However, the Commission considers that this outcome is consistent with the objective of promoting competition for the benefit of end-users.

[27] TelstraClear submission, 7 February 2005, page 12.

111. TelstraClear proposes an alternative method of recovering industry common system costs. The proposed method requires that parties to the determination pay a fixed contribution when they join, plus a tariff based on market share.

112. TelstraClear identifies a number of issues related to the implementation of the cost allocation methodology for industry common system costs, and recommends that the Commission request that the parties submit agreed detailed terms for implementation for incorporation in this final determination.

113. Vodafone agrees with the Commission's method for allocating industry common system costs. However, Vodafone requests that the Commission clarify the basis upon which market share will be measured. Vodafone suggests that a possible option to measure market shares would be to assess the average active voice connection numbers over the course of each calendar year.

Conclusion

114. Industry common system costs will be incurred irrespective of the number of customers who port their numbers. Therefore, these costs are not caused by porting customers or by any particular operator. They are more properly characterised as the result of the policy that number portability should be regulated and that all operators should be required to participate. The cost causation principle therefore leads to the conclusion that industry common system costs should be shared amongst all operators. The most equitable sharing mechanism is one which reflects the size of each operator's customer base.

115. The sharing of industry common system costs across all operators is also consistent with the goal to promote competition. Spreading the cost in proportion to each operator's market share will ensure that a level playing field exists, thus nurturing competition in the market.

116. The Commission disagrees with Telecom's assertion that this approach ignores Type 1 benefits in allocating industry common system costs. All end-users (both those who port and those who do not) will benefit from the introduction of number portability. All operators have an equal opportunity to derive commercial benefits from number portability.

117. A strict application of the practicality principle would suggest that costs be allocated evenly across parties to the determination. This would, however conflict with the cost causation principle and the alignment of costs with benefits principle.

118. The following table summarises the application of the cost allocation principles to the common system costs.

Table 1

Summary of the Cost Allocation for Industry Common System Costs

Principle	**Cost allocation suggested by principle**
Cost Causation	Split amongst operators based on market share
Cost Minimisation	No guidance
Practicality	Equal split but conflict with other objective/principles
Alignment of Costs with Benefits	Split amongst operators based on market share

119. The Commission considers that Telecom's proposed solution is arbitrary in its methodology and impractical. Further, Telecom's methodology fails to appropriately take into account external benefits. Telecom's proposal would impose a significant cost on porting customers and RNO's. Additionally, it would create a high barrier to switching that would undermine the benefits of number portability, and mitigate incentives for operators to compete for customers.

120. Allocating a large portion of the industry common system costs to entrants would conflict with the cost causation principle, the distribution of benefits principle and the objective of promoting competition for the benefit of end-users.

121. The Commission rejects Telecom's argument that the Commission's approach will result in new entrants bearing only the incremental costs of porting a number for each customer acquired. The Commission's cost allocation method provides for the recovery of capital contributions in respect of the IPMS, and ongoing operation and maintenance costs.

122. The Commission concludes that industry common system costs should be allocated on the basis of market share, based on the quantity of active numbers used by each party. An active number means a local or cellular telephone number that has been allocated to a customer for use with a local or cellular telephone service.

123. The formula for allocating industry common system costs between the parties to the determination is set out in Appendix 2.

Per-operator set-up costs

Commission's Draft View

124. In the Cost Allocation Draft Determination, the Commission considered that each party should bear its own set-up costs of delivering number portability. Requiring each party to bear its own set-up costs is consistent with the objective of promoting competition and the principles adopted for cost allocation.

Submissions on the Cost Allocation Draft Determination

125. Telecom submitted that if set-up costs are allocated on this basis, the burden of providing number portability will fall most heavily on Telecom and that allocating costs on these grounds will not reflect the benefits arising from number portability.[28]

126. The Commission disagrees with this view and considers that requiring operators to bear their own set-up costs takes into account the Type 2 and Type 3 benefits associated with an efficient number portability service. All operators will incur these costs, which vary approximate to the size of each operator's customer base**.**

127. Telecom argues that if it is not compensated for its costs, it will be induced to do the minimum required to satisfy regulatory criteria. However operators are bound by this determination to the functions that must be performed by the system for delivering the service and the standard to which those functions must be performed, and each operator will bear the responsibility of ensuring that its internal systems are compliant.

Conclusion

128. Per-operator set-up costs are not driven by porting customers and will be incurred irrespective of whether customers port their numbers. Rather, these costs are part of the investment that any operator needs to incur in order to provide telecommunications services in a competitive market. The origin or cause of these costs could be traced back to the government decision to regulate number portability.

129. Accordingly, internal system costs are not caused by any end-users of local and cellular telephone services, and should therefore be borne by the operator incurring those costs.

130. The cost minimisation principle is of particular relevance in allocating operator specific set-up costs. If these costs (or a part of these costs) were to be recovered through inter-operator charges, incentives to minimise would be undermined. Requiring operators to bear their own internal system costs is a practical solution and will be easy to implement.

131. Operators should bear their own internal system costs, which will reflect the spread of benefits across all DNOs, RNOs and end-users of local and cellular telephone services.

132. The following table summarises the application of the cost allocation principles to per-operator system costs.

[28] Telecom New Zealand: *Submission on Number Portability*, 18 August 2004, pg. 4.

Table 2

Summary of the Cost Allocation for Per-Operator Set-up Costs

Principle	**Cost allocation suggested by principle**
Cost Causation	Bear own costs
Cost Minimisation	Bear own costs
Practicality	Bear own costs
Alignment of Costs with Benefits	Bear own costs

Per-line set-up costs

Commission's Draft View

133. The Cost Allocation Draft Determination concluded that a DNO should be permitted to recover the incremental per-line set-up costs that it incurs when one of its customers is porting a number to another operator. Per-line set-up costs are driven exclusively by the number of customers porting their numbers. The cost causation principle implies that individuals whose actions cause a cost should pay this cost.

134. Per-line set-up costs could be recovered from porting customers either through a porting-out fee levied directly by the DNO or by allowing the DNO to recover the costs from the RNO, which could then levy a porting-in charge. Recovery of per-line set-up costs through a transfer from the RNO to the DNO would be preferable for the following reasons:

- It would reduce the transaction costs involved in the porting process and make the switching process simpler for customers;
- It would be easier for a RNO to ensure that per-line set-up costs are not inefficiently high as RNOs are in a better position to scrutinise the level of such costs. They would also have a stronger incentive and a better ability to negotiate down payments to an efficient level than any individual customer;
- It would provide RNOs with the flexibility to choose between charging porting-in customers for the costs paid to DNOs, absorbing those costs, or passing them on to all of their customers.

Submissions on the Cost Allocation Draft Determination

135. Telecom agrees with the Commission's approach and argues that the level of the porting charge should be left to negotiation between parties against the backstop of a regulated price. Telecom considers that reciprocity will constitute an effective mechanism to reduce costs.

136. Telecom argues that the Commission has no power under the relevant legislation to prevent the DNO from charging end-users, since it claims that such an action would be tantamount to regulating prices. Telecom notes however, that it does not intend to recover the costs of per-line set-up directly from out-porting customers.

137. TelstraClear expresses concern that the Commission underestimates the implication of uneven bargaining power between operators, and notes that requiring reciprocal charges between operators will not adequately address this issue.[29] In particular, TelstraClear notes that Telecom has a strong incentive to delay agreement on negotiation of the per-line charge.

138. TelstraClear considers that the Commission should set an initial charge based on benchmarking and provide for a request by parties for the Commission to undertake a full cost analysis.

139. Vodafone agrees with the Commission's proposal and argues that there is no need for ex-ante intervention by the Commission.[30] IHUG recommends that the Commission allow only for the recovery of efficiently incurred costs and that per-line set-up charges are cost-based and reciprocal between parties. IHUG also requests that the Commission prohibit the DNO from charging out-porting customers directly.[31]

140. Callplus[32] and Woosh[33] both recommend that the Commission set a single charge applicable to all parties to the determination. Woosh argues that the maximum level of this charge should be $10.

Conclusion

141. Per-line set-up costs are driven by an individual customer's decision to port his or her number. Accordingly, cost causation is particularly relevant in allocating this category of cost. In allocating per-line set-up costs, the cost causation principle requires that the porting customer and the RNO should incur the cost of porting. Accordingly, the DNO should be allowed to recover the incremental cost incurred by it in out-porting.

142. Additionally, the benefits of an individual porting occurrence are likely to be enjoyed to a large extent by the porting customer. Accordingly, the 'alignment of costs with benefits' principle requires that the porting customer and the RNO should incur the per-line set-up costs.

143. Allowing the DNO to recover the incremental cost of out-porting a customer is consistent with the promotion of competition and provides appropriate incentives for customers to port their number between providers.

144. The following table summarises the application of the cost allocation principles to the per-line set-up costs.

[29] TelstraClear submission to the Commission 7 Feb 2005 pg. 13.
[30] Vodafone submission to the Commission 7 February 2005.
[31] Ihug submission to the Commission 7 February 2005.
[32] CallPlus Submission on Number Portability Draft Determination 2 February 2005.
[33] Woosh submission to the Commission 7 February 2005.

Table 3

Summary of the Cost Allocation for Per-Line Set-up Costs

Principle	**Cost allocation suggested by principle**
Cost Causation	Cost recovery from RNOs/porting customers
Cost Minimisation	Bear own costs (but conflicts with cost allocation methodology suggested by cost causation)
Practicality	Bear own costs (but conflicts with cost allocation methodology suggested by cost causation)
Alignment of Costs with Benefits	Cost recovery from RNOs/porting customers

145. Recovery by the DNO of its per-line set-up costs will be consistent with the cost minimisation principle so long as the DNO recovers only its efficiently incurred incremental costs.

146. Overseas evidence suggests that the level of the per-line charge has a significant effect on the take-up of number portability.[34] Where the per-line set-up charge exceeds the incremental cost of porting the number, the benefits arising out of number portability will be adversely affected as a result of fewer customers porting their number (Type 1 benefits will be mitigated).

147. A DNO may choose not to seek recovery of per-line set-up costs and instead to retain those costs for its own account. Should a DNO require recovery of those costs, once the amount of that cost has been fixed in accordance with this determination, the costs shall be borne by the RNO.

148. In order to ensure that the DNO has the appropriate incentives to impose only an efficiently incurred charge, the amount of the charge will be reciprocal between parties to this determination.

149. The parties are required to negotiate the per-line set-up charges to be applicable from the commencement of the Number Portability Services. These charges must be based on the DNO's efficiently incurred incremental cost. If the parties be unable to do so, the dispute resolution procedure set out in the LMNP Terms may be used.

Additional call conveyance costs

Commission's Draft View

[34] Commission of the European Communities, *Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions, European Electronic Communications Regulation and Markets 2003, Report on the implementation of the EU Electronic Communications Regulatory Package* [SEC(2003) 1342], 19.11.2003.

150. The Cost Allocation Draft Determination concluded that each operator should bear the additional call conveyance costs it incurs. The Commission noted that call conveyance costs were not likely to be significant and are incurred by operators in proportion to their relative size (in terms of call origination and termination).

Submissions on the Cost Allocation Draft Determination

151. Telecom argues that the Commission's proposal is largely based on the incorrect assumption that additional call conveyance costs are negligible and says that it will incur costs of approximately $4 million p.a. (based on an off-switch solution and 5% of calls are to ported numbers).

152. Telecom argues that additional call conveyance costs are exclusively driven/caused by the number of customers porting. Telecom therefore argues that the Commission should maintain consistency between its treatment of per-line set-up costs and its treatment of additional call conveyance costs. Telecom argues that additional call conveyance costs should also be subject to commercial negotiation.

153. TelstraClear agrees with the Commission's proposal and submits that access seekers should not be exposed to additional call conveyance costs as a result of the DNO using an inefficient network solution.

154. TelstraClear notes that in some cases an operator may choose not to directly interface with the IPMS and may use other arrangements for determining the destination of a call made on its network. For example, where donor re-routing is relied upon as a means of delivering a call to the destination number, the originating service provider would commercially contract another party to perform queries on its behalf.

155. TelstraClear requests that the Commission states explicitly that the proposed cost allocation does not apply when the originating operator does not interface with the IPMS.

156. TelstraClear draws a parallel with the interconnection principles to justify the Commission's proposal, noting that an access seeker is responsible for its costs of getting the call up to the point of interconnection and, therefore, 'an access provider cannot logically be required to pay the access seeker to buy termination from the access provider'.

157. Vodafone agrees with the Commission's proposal and notes that call conveyance costs should be minimal given that an intelligent network solution has been adopted. Vodafone considers that donor re-routing arrangements should be left to commercial negotiations between parties.

Conclusion

158. The Commission notes that the accuracy of Telecom's assertions regarding the significance of additional call conveyance costs cannot be assessed as Telecom has not submitted the underlying cost information. Further, this assertion is not consistent with available evidence in other jurisdictions. The report by Europe Economics &

Arcome for the EC[35](1999) notes that additional conveyance costs are only significant under number portability solutions that utilise the tromboning method to deliver calls to ported numbers.

159. In its report to the Director General of Telecommunications (1995), the Mergers and Monopolies Commission (the 'MMC') recommended that BT be allowed to recover additional call conveyance costs from RNOs only for a set period leading up to the adoption of the call drop back solution. Once call drop back had been implemented, the report recommended that BT was no longer allowed to recover additional call conveyance costs from the RNO. This recommendation was partly justified on the basis that under a call drop back solution, the additional call conveyance costs were not significant.

160. While the Commission makes no assumption as to the particular solution adopted by operators, it seeks to provide incentives that will encourage efficient investment decisions. The Commission notes that the existence of an IN solution will allow any operator to use a number of solutions in delivering calls, including the call drop back solution. Given that the implementation date of this determination is 1 April 2007, the Commission considers that parties to the determination have a sufficient time period over which to develop and implement an efficient number portability solution that will not incur significant additional call conveyance costs.

161. Allowing the originating operator to recover additional call conveyance costs will adversely affect any incentive that operator has to minimise those costs. A negative relationship will exist between the level of expenditure involved in upgrading the network to deliver number portability (per-operator set-up costs), and the level of additional call conveyance costs incurred by an operator. Requiring the originating operator to bear its own additional call conveyance costs will provide appropriate incentives for network operators to adopt the most cost efficient solution overall.

162. Where operators are required to bear their own additional call conveyance and internal system costs, an operator will be incentivised to implement the most efficient strategy. Conversely, allowing an operator to recover one or both types of cost may skew the investment strategy of that operator in such a way that the rational strategy of the operator is not likely to match the efficient outcome.

163. Requiring that an originating operator should bear its own additional call conveyance costs is a practical cost allocation methodology. If originating operators were allowed to recover these costs from RNOs, there is a risk that operators would set arbitrary and excessive charges for additional call conveyance.

164. The cost causation principle provides inconclusive signals with regard to how additional call conveyance costs should be allocated. The proximate cause of those costs is the making of calls to people who have ported their number. The applicable charging principle in the industry is that the caller pays the full cost of the call. This

[35] Europe Economics and ARCOME SA, *Study on the Cost Allocation for Number Portability, Carrier Selection, and Carrier Pre-Selection, Final Report for DGXIII of the European Commission, Volume II,* October 1999.
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implies that the calling party is the party deciding to make a call and is therefore the party responsible for paying the costs of that call.

165. However, when number portability is in place, the caller may not know that the number has been ported and therefore should not face higher charges nor should the cost fall on the originating operator.

166. The 'alignment of costs with benefits' principle also provides inconclusive signals with respect to the allocation of additional call conveyance costs. Calling customers derive benefits from having their call connected to the person who has ported his or her number to another operator (Type 3 benefits). The benefit to the calling party is acknowledged in standard interconnection pricing principles which typically involve the originating operator paying an interconnection fee to the terminating operator for terminating the call on its network

167. The ported customer and the RNO both benefit from being able to receive calls without difficulties (Type 1 benefits).

168. The ability to route a call to a ported number in a competitive market should be regarded as a normal feature of such a market and not as a facility that requires specific arrangements. Further, interconnection between competing networks is mandatory in order to preserve network externalities, maintain a level playing field between networks and allow any-to-any calling. Accordingly, standard interconnection pricing principles should be retained in order to ensure that these benefits continue to be realised by end-users.

169. The charging principle applicable in the industry for calls to local and cellular numbers is 'calling party pays'. Under the 'calling party pays' principle, the calling party's operator would bear the additional call conveyance costs.

170. Allowing the recovery of additional call conveyance costs from the RNO would conflict with the 'calling party pays' principle. If the RNO was to pass on the charge to its customers, this could deter people from porting and would also effectively impose a charge on customers to use what they may consider to be their own number.

171. Further, allowing the originating operator to recover additional call conveyance costs from the RNO would expose the RNO to an uncertain level of on-going charge that may in turn make the service less attractive to the RNO and could as a result undermine the incentives for operators to compete for customers.

172. A departure from the 'calling party pays' principle is not justified by the introduction of number portability and would be unlikely to promote competition for the benefit of end-users.

173. The following table summarises the application of the cost allocation principles to additional call conveyance costs.

Table 4

Summary of the Cost Allocation for Additional Call Conveyance Costs

Principle	Cost allocation suggested by the principle
Cost Causation	Inconclusive
Cost Minimisation	Bear your own costs
Practicality	Bear your own costs
Alignment of Costs with Benefits	Inconclusive

174. The Commission concludes that each operator should bear the additional call conveyance costs it incurs. The extent of the additional call conveyance costs incurred by an operator will depend on the number portability solution adopted by that operator. Requiring the originating operator to bear its own additional call conveyance costs will provide appropriate incentives for network operators to adopt the most cost efficient solution overall to affect number portability.

175. Telecom's proposed solution conflicts with the principle of cost minimisation, and the principle of practicality, and is not consistent with the promotion of competition for the benefit of end-users.

176. The Commission understands that in some cases, an originating operator may choose not to directly interface with the IPMS, but to use other arrangements for the delivery of a call to the destination operator. For example, this may involve the originating operator using donor carrier re-routing or contracting a transit carrier to perform the call termination.

177. The Commission's findings with respect to the allocation of additional call conveyance costs do not prevent commercial arrangements being put in place to cover donor re-routing or call transit. For example, when donor re-routing is used by an originating operator, the donor is not prevented from charging the originating operator for that service. However, the originating operator cannot recover costs from the RNO.

178. Similarly, when a transit carrier or contracted service deliverer is used by the originating operator, the determination does not prevent the transit carrier or contracted service deliverer from charging the originating operator for that service. However, the transit carrier or contracted service deliverer cannot recover costs from the RNO.

Summary of Cost Allocation Conclusions

179. In allocating the costs associated with the Number Portability Services, the Commission is guided by the promotion of competition for the long-term benefits of end-users by lowering the switching costs incurred by customers when changing service providers. The Commission has adopted four guiding principles to allocate costs, namely: cost minimisation, cost causation, alignment of costs with benefits and practicality. On this basis, the Commission has concluded that:

- *Industry common system costs:* Allocated amongst all providers of local and cellular telephone number portability services on the basis of market share based on active numbers.

- *Per-operator set-up costs:* Each operator will bear its own costs.

- *Per-line set-up costs:* Recoverable by the donor network operator from a recipient network operator.

- *Additional call conveyance costs:* Each operator will bear its own costs.

FUNCTIONS AND STANDARDS

180. The Functions Application requested that the Commission: [36]

> a. make a determination under section 31(a) of the Act that is in the form of the Network code and the LMNP code (Subject to sub-paragraph (b) below);
> b. seek submissions from the Applicants and make a determination in respect of those issues not agreed by the TCF; and
> c. make this requested determination under section 31(a) of the Act in conjunction with the determination under section 31(b) of the Act, which the Commission is currently investigating, including aligning the dates for submissions on the determinations.

181. The applicants submitted two draft codes as attachments to the Functions Application. The draft LMNP and Network Codes were the product of industry negotiation on the development of a technical solution for delivery of the Number Portability Services.

182. The applicants requested that the Commission make a determination on the following specific issues upon which the parties could not reach agreement:
   a. The scope of the local telephone number portability service;
   b. Porting of local numbers within a local calling area;
   c. Additional future services and legislative amendments;
   d. The scope of exemptions issued under the draft Network Code;
   e. Ongoing non-compliance with Service Levels and Equivalent Service Criteria;
   f. Contesting enforcement agency decisions in respect of exemptions;
   g. Internationally originated SMS.

183. The Commission provided its views in relation to the above matters in the Functions Draft Determination. Additionally, the Commission's views were incorporated into the Draft LMNP Terms and Draft Network Terms attached to the Functions Draft Determination.

184. The Commission has subsequently reviewed submissions from Telecom, TelstraClear, Vodafone, and Woosh on the Functions Draft Determination. The Commission notes that an additional issue has arisen resulting from submissions concerning equivalent service requirements for local numbers used on wireless networks.

185. The LMNP Terms and Network Terms attached to this determination are consistent with the determination framework under Part 2 of the Act, and the requirements of the section 18 purpose statement. The LMNP Terms in Appendix 3 and the Network Terms in Appendix 4 form part of the determination under section 40(1)(a) and (f) of the Act.

186. The LMNP Terms and Network Terms attached as part of this determination are not identical to the 'agreed terms' submitted by the applicants in the draft LMNP and Network Codes attached to the Functions Application. Various clauses have been altered or omitted to best give effect to the purpose of the promotion of competition for the long-term benefit of end-users.

[36] Application for Determination of designated multinetwork services, 24 December 2004.

The scope of the local telephone number portability service

187. One of the key issues that had not been agreed by the applicants was the scope of the 'local telephone number portability service'. In particular, the applicants could not agree on whether the local telephone number portability service would allow for the porting of local telephone numbers between a fixed and a cellular telephone network.

188. Determining the scope of the local telephone number portability service description requires the consideration of two constraints. The description of the service allows for 'an end user of a *fixed telephone network service* [emphasis added] to change providers of that service but to retain the same telephone number *within a local calling area* [emphasis added]'. The Commission has considered these constraints separately, in order to determine the scope of the service description.

Interpretation of 'fixed telephone network service'

The Functions Draft Determination

189. In the Functions Draft Determination, the Commission determined that a 'fixed telephone network service', as referred to in the 'local telephone number portability service description' was intended to mean:

- a service provided over a wire-line network; and
- a fixed wireless service (including a service which is configured from a fixed wireless or cellular network). The Commission asserted that in order to qualify as a 'fixed telephone network service', a fixed wireless service:
  - must be limited to a service where calls are made, and received, in a geographic area that is bounded by a single transmission tower (or cell site); and
  - does not include a service that allows the end-user's telephone device to perform call hand over between transmission towers or to calls made (and received) on that device which require the involvement of more than one transmission tower in the wireless network.

190. In examining the text, context, and purpose of the Act and the submissions from the parties, the Commission has revised its view with regard to the scope of the term 'fixed telephone network service', and, therefore, the scope of the 'local telephone network service'.

The Legislation

191. The description of service for local telephone number portability is as follows:

> A service that enables an end-user of a **fixed telephone network service** to change providers

of **that service** but to retain the same telephone number within a local calling area. [Emphasis added]

192. There are various defined terms in the Act which refer to the term ‘fixed’. Under Part 1 of Schedule 1, ‘fixed telecommunications network’ is defined as follows:

> ‘fixed telecommunications network’ means—
>
> (a) any lines between a user's premises and the local telephone exchange or equivalent facility:
> (b) any fixed PSTN:
> (c) any telecommunications links between fixed PSTNs:
> (d) any fixed PDN:
> (e) any telecommunications links between fixed PDNs:
> (f) any value-added telecommunications services associated with telecommunications services provided by those assets

193. Section 5 of the Act also defines various terms referring to ‘fixed’:

> ‘fixed PDN’—
> (a) means a PDN, or that part of a PDN, that connects an end-user's building (or, in the case of commercial buildings, the building distribution frames) to a data switch or equivalent facility; and
> (b) includes the data switch or equivalent facility and that part of the overall telecommunications link within the building that connects to the end-user's equipment
>
> ‘fixed PSTN’—
> (a) means a PSTN, or that part of a PSTN, that connects an end-user's building to the local switches or equivalent facilities; and
> (b) includes those local switches or equivalent facilities.
>
> ‘fixed radio station’ means radio apparatus comprising transmitters or receivers, or a combination of transmitters and receivers, installed at a fixed location, for the purposes of carrying on a radiocommunications service

194. The ‘description of service’ for cellular telephone number portability is as follows:

> A service that enables an end-user of a cellular telephone network service to change providers of that service but to retain the same telephone number (including the same cellular network access code)

195. The ‘access provider’ and ‘access seeker’ for the purpose of both the local and cellular telephone number portability services are defined as follows:

> Access provider: Every person who operates—
>
> (a) a PSTN to which numbers have been allocated; and
> (b) a telephone service that relates to that number portability service
>
> Access seeker: Any person who—
>
> (a) operates a PSTN to which numbers have been allocated; and
> (b) operates a telephone service that relates to that number portability service; and
> (c) seeks access to that number portability service.

Submissions on the Functions Draft Determination

196. The Commission received submissions and cross submissions from Vodafone, TelstraClear, Telecom, and Woosh on the scope of the local telephone number portability service.

197. Telecom agrees with the Commission's view that a 'fixed telephone network service' may include a fixed wireless service. However, Telecom argues that it does not include the particular fixed wireless service described by the Commission in the Functions Draft Determination.[37]

198. Telecom submits that while the term 'fixed telephone network service' is not defined in the Act, all terms using the word 'fixed' which are defined in the Act make reference (directly or through other defined terms) to the fact that the network must be connected to the end-user's building or user's premises. Accordingly, Telecom argues that in using the term 'fixed', Parliament intended the term only to apply to services that were offered via a fixed network connection to an identifiable, fixed physical premises used by the user/end-user.[38]

199. Telecom notes that the Commission's interpretation of the term 'fixed telephone network service' is inconsistent with the acknowledged industry meaning of the word 'fixed' (including fixed-wire copper or cable networks). Telecom notes that on a 'plain meaning' interpretation, the word 'fixed' is defined as attached or positioned securely.[39]

200. Accordingly, Telecom argues that a 'fixed telephone network service' is a service which is provided via a network connected to an identifiable, fixed physical premises used by the user/ end-user.[40]

201. Telecom argues that fixed to cellular portability would create problems related to the charging of calling customers. Telecom notes that the dialed number (as indicated by the numbering plan) currently indicates the type of service that is being called and is relied on by the carrier in setting and signaling retail charges to customers and that if fixed to cellular portability was introduced, the dialed number could no longer be relied on to inform the caller of the applicable charge. Telecom notes that this would create substantial customer confusion and possibly even Fair Trading Act issues.[41]

202. Vodafone submits that there is no logical basis to exclude the provision of a fixed telephone network service that uses cellular mobile handset devices which, by definition, permit call hand over. Accordingly, Vodafone argues that the Commission should not limit the meaning of a 'fixed telephone network service' by reference to the technical capabilities of the end-user's telephone device.[42]

[37] Telecom submission, 10 June 2005, page 7.
[38] Ibid.
[39] Telecom submission, 10 June 2005, page 9.
[40] Ibid.
[41] Telecom submission, 10 June 2005, page 11.
[42] Vodafone submission, 10 June 2005, page 6.

203. Vodafone considers that the artificial restriction imposed under the Functions Draft Determination would introduce competitive distortions into the market and overlook the technology underlying some commercial products already in the market that allow users to receive calls away from their home or office. Further, Vodafone argues that the 'fixed telephone network service' described by the Commission is unworkable in practice as the architecture of a cellular network requires that a particular location will frequently be within the coverage area of more than one cell site with calls being carried over different cell sites depending on strength of signal and demand for coverage in the area at the time of a call.[43]

204. Vodafone disagrees with the assertion made by Telecom that porting of local numbers to mobile networks will create customer confusion. Vodafone notes that mobile operators offering a local service would not seek to charge a termination rate for calls to local numbers on their network that is any different to the rate that fixed operators charge for that service.[44] Accordingly, Vodafone expects that fixed networks will charge their customers the same tariff when calling a local number on a mobile network as when calling a local number on any other network.[45]

205. However, Vodafone acknowledges that the TSO Deed does not prevent Telecom from charging their residential customers for calls to a cellular network that is providing a local service. Accordingly, Vodafone argues that the TSO Deed should be amended so that Telecom is prevented from charging residential customers for calls to local numbers on cellular networks.[46]

206. Vodafone considers that the only distinction that should be made between the local and cellular telephone number portability services is that the local service has a geographic dimension.[47] Vodafone submits that the logical geographic area for the Commission to define in the context of number portability is the local calling area. Vodafone notes that the local calling area is the only geographic area contemplated by the number portability service description in the Act and should be the only restriction associated with the local telephone number portability service.

207. TelstraClear endorses the principle of portability of numbers between fixed and mobile networks and argues that the approach taken by the Commission in the Functions Draft Determination would be impractical for operators and confusing to end-users.[48] TelstraClear notes that the Commission's approach has the unintended consequence of artificially constraining valid uses of local numbers and limiting the ability of a cellular network operator to provide competition in the local calling market.[49]

208. TelstraClear argues that the definition of a 'fixed telecommunications network' in the Act does not include any express or implied requirement for a geographic boundary at a cell site level rather than a local calling area level, and considers that the

[43] Vodafone Submission, 10 June 2005, page 5.
[44] Vodafone Submission, 10 June 2005, page 7.
[45] Vodafone Cross-submission, 24 June 2005, page 3.
[46] Vodafone Submission, 10 June 2005, page 7.
[47] Vodafone Submission, 10 June 2005, page 5.
[48] TelstraClear Submission, 10 June 2005, page 5.
[49] TelstraClear Submission, 10 June 2005, page 7.

Commission should leave it to the donor carriers to define the geographic boundaries for number portability between fixed and cellular networks.[50]

209. TelstraClear notes that 'if the NAD allows for the use of local numbers in a wireless PSTN with a geographic structure based around LICAs, then there is no logical reason why such numbers should not be portable between fixed and mobile networks on the same basis'[51].

210. Woosh notes that call handover is necessary in their network in order to ensure that a high quality of service is maintained. In particular, Woosh points out that call handover allows the network to manage call traffic so that if the number of customers served by one transmission tower becomes so large as to degrade the service, some of those customers can be handed over to another transmission tower with spare capacity.[52]

Conclusion

211. In considering the meaning of the term 'fixed telephone network service', the Commission has had regard to the meaning of the word 'fixed' in the definitions of 'fixed PDN', 'fixed PSTN' and 'fixed telecommunications network' under the Act.

212. All of these terms refer (directly or through other defined terms) to the fact that the network must 'connect' to the end-user's building or user's premises. The Commission considers that by using the term 'fixed', it was intended that the 'local telephone number portability service' would only apply to services that are offered via a connection between the local switch or equivalent facility and the end-user's building or the user's premises. A connection is a circuit between the local switch or equivalent facility and a telephone device located in or on a building with which the user has some form of relationship of occupation or use[53]. This connection could be provided over wired or wireless technology.

213. Telecom considers that a fixed wireless service is a 'fixed telephone network service' for the purpose of local telephone number portability, where a fixed receiver is attached to an end-user's building, and transmits a wireless signal between two fixed points[54].

214. The use of the word 'fixed' in the Act does not imply that the telephone device must be physically attached to the end-user's building or user's premises. It is sufficient if the telephone device is normally located on the premises.

215. The Commission acknowledges that limiting calls on a wireless network to those bounded by a single transmission site is not likely to be a useful or workable solution, given the architecture of certain types of wireless network.

[50] Ibid.
[51] TelstraClear Submission, 10 June 2005, page 9.
[52] Woosh, Submission on Number Portability Draft Determination, 10 June 2005.
[53] Refer Newton's Telecommunication's Dictionary.
[54] Telecom submission, 10 June 2005, page 8.

216. Under a wireless solution, the end-user's telephone device may be capable of connecting to more than one transmission site. The transmission site to which the telephone device is connected could depend on the relative signal strength from the surrounding sites and the demand for coverage in the area at the time of the call.

217. Further, the meaning of the word 'fixed' as taken from the Act requires only that the end-user's building or the user's premises be connected to the local switch or equivalent facility, and is therefore not related to the type of technology used to provide the fixed telephone network service. For example, a 'fixed telephone network service' may be provided using cellular technology, as long as the service is provided over a connection between the end-user's building or the user's premises and the local switch or equivalent facility.

218. Accordingly, the Commission has removed the limitation made in the Functions Draft Determination that a wireless service is bounded by a single transmission site, with no call handover capability. The fixed telephone network service may be provided using any type of network technology (including cellular technology).

219. The Commission has considered the view held by TelstraClear and Vodafone that the only distinction between the local and cellular telephone number portability services should be that one relates to the portability of local telephone numbers within a local calling area and the other to the portability of cellular telephone numbers (including the same cellular network code). Under this view, there is no significance placed on the term 'fixed telephone network service' in the local telephone number portability service description.

220. The Commission disagrees with this view because if Parliament intended that the only distinction between the services is the type of numbers ported, the local telephone number portability service would not have referred to 'fixed telephone network service' in the service description. Rather, it is more likely to have stated that a local telephone number portability service is 'a service that enables an end-user of a *local telephone service* to change providers of that service …' [emphasis added].

221. In adopting this view, the Commission recognises that the types of services provided by wireline and wireless networks are converging and acknowledges that a situation may arise in which some local telephone numbers are not covered by this determination because they are associated with services that do not have a connection to the end-user's building or the user's premises.

222. The Commission considers that the issues raised by Telecom in relation to user confusion relate to the introduction of local telephone number services on cellular networks rather than to the scope of the 'local telephone number portability service'. Accordingly, the issues are not relevant to the Commission's interpretation of the local telephone number portability service description.

Summary of decision

223. The characteristics of a 'fixed telephone network service' are, for the purpose of the designated multinetwork service of local telephone number portability, as follows:

- The local switch or equivalent facility is connected to the end-user's building or the user's premises; and
- The connection is a circuit between the local switch or equivalent facility and a telephone device located in or on a building with which the user has some form of relationship of occupation or use; and
- The telephone device is not required to be physically attached to the end-user's building or the user's premises, but should normally be located on the end-user's premises.

224. Provided the above conditions are satisfied, the fixed telephone network service may be provided using any type of network technology (including cellular technology).

225. Vodafone has indicated that it wants to be able to offer a local service over its cellular network in the future and that local telephone number portability would be critically important were they to launch such a service[55]. Whether such a service qualifies as a fixed telephone network service will depend on the nature of that particular service and the means by which it is to be delivered.

226. Should Vodafone (or another party launching a local service on a cellular network) be unable to reach agreement on that issue with the relevant local telephone number portability access providers, the issue may be dealt with in accordance with the dispute resolution procedures of the LMNP Terms.

Interpretation of 'within a local calling area'

227. The local telephone number portability service as described in Schedule 1, subpart 2 of the Act enables 'an end-user of a fixed telephone network service to change providers of that service but to retain the same telephone number within a local calling area.'

228. The Commission has considered two separate issues in relation to the requirement under the Functions Draft Determination that ported numbers can only be ported within a defined local calling area. Firstly, the parties are unable to agree on a definition for the term 'local calling area'. Secondly, the parties are unable to agree on the intended meaning of the term 'within the local calling area'.

<u>The 'Local Calling Area' definition</u>

229. The local telephone number portability service description limits the use of a ported local number to within 'a local calling area'. However, the Act does not define the term 'local calling area', and provides no guidance on the intended meaning of the term.

230. Telecom proposed in its submission on the Functions Application (11 March 2005) that the 'local calling area' be defined as

[55] Vodafone submission, 10 June 2005, page 3.

> The geographic area defined by the Donor Carrier within which customers have access to a local service with a consistent set of attributes

231. In the Functions Draft Determination, the Commission noted that a requirement that services within a local calling area have a 'consistent set of attributes' is not a clear or a useful limitation. Accordingly, the Commission did not include this requirement in the Functions Draft Determination.

232. Telecom noted in its submission on the Functions Draft Determination that removing this requirement from the 'local calling area' definition would not materially alter its effect.[56] However, Telecom noted that the term 'consistent set of attributes' was intended to denote a common geographic routing location, or exchange service area.

233. Additionally, Telecom noted that:[57]

> The words serve to clarify the purpose of the definition – which is to allow the Donor Carrier to define the geographic area within which a ported number from its network must physically remain. This is imperative for three reasons:
>
> - If a number is allowed to be ported outside of the donor carrier's local calling area', this will threaten the integrity of the donor carrier's call routing rules and outcomes and may prevent equivalent service being provided to the ported customer under the Network Terms;
> - Allowing a number to be ported outside of the donor carrier's 'local calling area' will in many cases preclude that carrier from winning that customer back, as its network and systems will have a hard-wired assumption that that number is located within the 'local calling area'. This will not be to the long term benefit of end-users; and
> - To prevent customer confusion as to when a call to a local telephone number will be free, and when it will be charged as a toll call. If a number out-ported from a given Telecom toll area is allowed to serve a customer who moves geographically outside the Telecom toll area boundary (eg from the Wellington calling area to Kapiti) this immediately raises the question of whether a call dialled to it from inside the Telecom toll boundary is to be a free call or a toll call.

234. Telecom proposed the following definition as an alternative to its original proposal:[58]

> The geographic area defined by the donor carrier which is serviced by the donor carrier's local exchange.

235. The Commission notes that the local calling area will not necessarily correspond with the geographic area served by a particular exchange. Therefore the defining constraint must be the local calling area, as distinct from the exchange service area as suggested by Telecom. The Commission notes that a local calling area could be a single exchange service area, a combination of exchange service areas or part of an exchange service area.

236. The Commission remains of the view that a requirement that a local calling area must have a 'consistent set of attributes' is not consistent with the service description in the Act and could potentially restrict customers from porting their numbers to or from a provider that would otherwise qualify as an access seeker or access provider under Schedule 1 of the Act. The Commission notes that the term 'attributes' is not defined

[56] Telecom submission, 10 June 2005, page 16.
[57] Telecom submission, 10 June 2005, page 16.
[58] Telecom submission, 10 June 2005, page 16.

in the draft LMNP or Network Codes. Therefore, a requirement that a local calling area have a 'consistent set of attributes' is not clear or useful.

237. The Commission considers that authorising the donor carrier to define the geographic boundary of the 'local calling area' will ensure that:

- the integrity of the DNO's network is not threatened;
- a number is not able to be ported outside of the donor carrier's local calling area;
- customer confusion does not arise with respect to call charges.

238. The Commission's view is that Telecom's proposed definition is not consistent with the local telephone number portability service description and should therefore not be included in this determination. Accordingly, the Commission considers that a local calling area is:

> The geographic area defined by the DNO within which customers of the DNO have access to a local service

The use of ported local telephone numbers within a local calling area

239. In the Functions Draft Determination, the Commission considered that Clause 4.1.8(a) of the draft LMNP Code (submitted as an attachment to the application) was consistent with the local telephone number portability service description in Schedule 1 of the Act. Accordingly, the clause was incorporated into the Draft LMNP Terms.

240. Clause 4.1.8(a) of the Draft LMNP Terms required that

> A ported number must physically remain within the donor carrier's relevant local calling area. A customer with a ported number wishing to move premises can retain that local number provided that the new premises is within the same donor carrier's local calling area.

241. Vodafone disagrees with the view that ported local numbers must physically remain within the relevant local calling area.[59] Vodafone considers that the requirement that a ported number 'must physically remain within a donor carrier's relevant local calling area' is unnecessary and could be a barrier to entry for Vodafone participating in local number portability. Further, Vodafone considers that it cannot be required that a number physically remain in any defined location, given that numbers do not physically exist anywhere.

242. Vodafone proposes that the wording of Clause 4.1.8(a) be amended as follows: [60]

> The premises of a customer with a Ported Local Number must be within the Donor Carrier's relevant Local Calling Area. A customer with a Ported Local Number wishing to move premises can retain that Local Number provided that the new premises are within the same Donor Carrier's Local Calling Area

243. TelstraClear notes that:

[59] Vodafone Submission to the Commission on Functions Draft Determination, 10 June 2005, page 9.
[60] Ibid.

> If local telephone number portability is to extend to the porting of a local telephone number between a fixed network and a cellular network, then clause 4.1.8(a) of the LMNP Terms should be amended to… 'A Ported Local Number must logically remain within the Donor Carrier's relevant Local Calling Area. For example, a customer with a Ported Local Number wishing to move premises can retain that Local Number provided that the number continues to logically reside within the same Donor Carrier's Local Calling Area'.

244. The purpose of this provision is to allow a customer with a ported local number wishing to move premises to retain the local number provided that the new premises is within the same DNO's local calling area. The Commission agrees with Vodafone that the focus should be on the location of the customer premises rather than the location of 'a number'. Such an approach would be consistent with the Commission's finding with regard to the meaning of the term 'fixed telephone network service'. Accordingly, the Commission has amended Clause 4.1.8(a) of the LMNP Terms as follows:

> The premises of a customer with a ported local number must be within the donor carrier's relevant local calling area. A customer with a ported local number wishing to move premises can retain that local number provided that the new premises are within the same donor carrier's local calling area.

Additional future services and legislative amendments

245. The Functions Application requested that the Commission make a determination in respect of the inclusion of additional services in the future.

246. Clauses 2.1.8 and 2.1.9 of the draft LMNP Code were originally drafted as part of an industry code under Schedule 2 of the Act, and are not appropriate in the context of a determination under Schedule 1 of the Act.

247. Amendments to a determination under Schedule 1 of the Act can be made only through an application to the Commission for clarification or reconsideration of a determination under sections 58 and 59 of the Act respectively.

Granting of exemptions to the Terms by the Commission

248. The applicants requested that the Commission make a determination in relation to exemptions from particular obligations under the draft LMNP and Network Codes.

249. Section 15 of the Draft Network Terms (Annex 2 of the Functions Draft Determination) set out the process for a carrier to apply to the TCF Management Committee to recommend that the Commission grant an exemption from complying with specific obligations under the Network Terms for a specified period of time, and set out procedures that the TCF Management Committee must follow in deciding whether or not to recommend an exemption.

250. An application for exemption from compliance with the Network Terms requires that the applicant set out specific reasons why it requires the exemption. For an exemption

to be recommended by the TCF Management Committee, a unanimous vote (of those members present and voting) is required.

251. Clause 15.8.1 of the Network Terms provides that a party may also apply directly to the Commission for a clarification or reconsideration of the determination under sections 58 or 59 of the Act.

252. Clauses 2.1.4 and 7.6.1 of the LMNP Terms allow a party that has been granted an exemption under the Network Terms to be exempted from relevant provisions in the LMNP Terms.

253. Telecom[61] agreed that there should be an exemption process, that it should be available for any aspect of the Network Terms and that the Network Terms are sufficiently robust to ensure that any exemption is restricted to the minimum scope necessary.

254. However, Telecom argues that the exemption process described in Section 15 of the Network Terms has the effect of giving the Commission the power to amend a determination, other than is permitted by sections 58 and 59 of the Act.

255. Telecom notes that the Act provides a specific process by which a determination may be clarified or amended and that for the Commission to provide itself with an additional power would subvert this process and be *ultra vires* the Act. Telecom considers that the only solution permitted by the Act is a party's right to apply for a clarification or reconsideration under section 58 or 59 of the Act.

256. Vodafone[62] and TelstraClear[63] supported the Commission's preliminary view in the Functions Draft Determination that the Commission could grant exemptions.

257. The Commission notes that the original disagreement between the applicants was with respect to clauses 2.1.4 and 7.6.1 of the draft LMNP Code. These clauses related to whether a party, having been granted an exemption under section 15 of the draft Network Code, could be exempted from the relevant provisions of the draft LMNP Code.

258. The Commission considers that a party may be exempted from the relevant provisions of the LMNP and Network Terms. Submissions received by Telecom, Vodafone and TelstraClear all support this view. Accordingly clauses 2.1.4 and 7.6.1 of the LMNP Terms remain unchanged.

259. The Commission also amended section 15 of the draft Network Code so that the Network Terms allow for any exemptions from the determination to be decided by the Commission on the recommendation of the TCF Management Committee. The Commission is empowered under section 40(1)(f) of the Act to determine the exemption process set out in section 15 of the Network Terms as a term of the determination.

[61] Telecom submission, 10 June 2005, page 14.
[62] Vodafone submission, 10 June 2005, page 8.
[63] TelstraClear cross submission, 24 June 2005, page 5.

260. Additionally, the Commission considers that the exemption process set out in section 15 of the Draft Network Terms is consistent with the scheme and purpose of the Act, and provides an appropriate and workable mechanism for the consideration of exemption applications. Accordingly, the Commission has included section 15 in the Network Terms.

Ongoing non-compliance with service levels and equivalent service criteria

261. The Application requested that the Commission make a determination in respect of on-going non-compliance with the draft LMNP and Network Codes as described in section 14.5 of the draft Network Code and section 7.4 of the draft LMNP Code.

262. Section 14.5 of the draft Network Code provided that '[i]f the Enforcement Agency considers that it has reasonable grounds to do so, it may conduct audits of the Carriers' documentation supporting compliance with the equivalent service criteria. Clause 14.5.3 deals with failing an audit as follows:

> **14.5.3** Failing an audit
> (a) If an Audit Carrier is determined by the Enforcement Agency to be in breach of the Equivalent Service criteria set out in this Code, the Enforcement Agency may issue that Audit Carrier with a written:
> (1) Caution Notice of Breach;
> (2) Warning Notice of Breach; or
> (3) Public Censure Notice

263. The draft LMNP Code contained an analogous clause that enforces the service levels in clause 7.4.1 as follows:

> If a Service Provider or Carrier does not meet the Service Levels ('Audit IPMS Client'), the Enforcement Agency may issue that Audit IPMS Client with a written:
> a) Caution Notice of Breach;
> b) Warning Notice of Breach; or
> c) Public Censure Notice

264. The Commission's preliminary view was that the agreed provisions of the draft codes enabling the enforcement agency to issue notices of breach, and in particular to publicly censure a carrier for non-compliance, provided an appropriate balance between the enforcement agency's role where a party is non-compliant, and the ability of a party to enforce the determination through the High Court.

265. Vodafone[64] and Telecom[65] were both in support of the Commission's view.

266. The Commission is not satisfied that suspension from using the IPMS to in-port numbers would be likely to best give effect to the section 18 purpose statement. If by failing to comply with the determination, a party is suspended from using the IPMS to in-port numbers, customers would be prevented from porting and therefore achieving the benefits that number portability would provide.

[64] Vodafone submission, 10 June 2005, page 9.
[65] Telecom submission, 10 June 2005, page19.

267. Accordingly the Commission has not included clause 14.5.4 of the draft Network Code or clause 7.5 of the draft LMNP Code in its Network Terms and LMNP Terms respectively.

Contesting enforcement agency decisions in respect of exemptions

268. The Application requested that the Commission make a determination on how disagreements with the decision of an enforcement agency should be dealt with. Specifically, the parties did not agree on whether the audit procedure should include the ability for the parties to use the dispute resolution procedure if there is a disagreement over the enforcement agency's view as to whether an exemption granted under the Network Terms exempts a carrier from meeting its obligations under the Terms. Section 14.5.5(b) of the draft Network Code (in dispute) notes that:

> If any interested party disagrees with a decision of the Enforcement Agency that an approved relaxation under the Network Code exempts the Audit Carrier from meeting its obligations under this Code, that party may raise this as a Dispute to be dealt with [in] accordance with clause 16.2

269. The draft LMNP Code contained an analogous clause 7.6.2.

270. The Commission's preliminary view was that the dispute resolution process is unnecessary where disagreement arises regarding a decision as to whether an approved exemption exempts a carrier from meeting its obligations. The Commission noted that the exemption approval process provided under the Network Terms should be sufficiently rigorous to ensure that the disputes mechanism is not required to deal with exemptions approvals.

271. The Commission remains of the view that if a party does not agree with an exemption that has been granted under the Network Terms, it should pursue its remedies in respect of the exemptions, rather than in the context of the application of that exemption in the audit procedure.

272. Further, the Commission considers that the TCF Management Committee's exemption recommendation process ensures that robust consultation is undertaken with all affected parties prior to the exemption being granted under section 15 of the Network Terms.

273. Vodafone[66] and Telecom[67] support the Commission's view with respect to this matter.

274. Accordingly, the Commission has not included clause 14.5.5(b) of the draft Network Code or clause 7.6.2 of the draft LMNP Code in its Network Terms or LMNP Terms respectively.

[66] Vodafone submission, 10 June 2005, page 10.
[67] Telecom submission, 10 June 2005, page 20.

Internationally originated SMS

275. The Application requested that the Commission make a determination on how the equivalent service requirements will apply to internationally originated SMS. Clause 6.7 of the draft Network Code provides the following process description [68]:

> Short message traffic destined for a New Zealand Network from a foreign operator may be delivered to a national Network based upon the number allocations by the NAD. It will be the Donor Network Carriers responsibility to determine if the destination mobile has been ported. It will then be the Donor Carrier's responsibility to determine if the short message will be terminated on their Network, transited to an alternate national Network Carrier or to discard the short message.

276. The Commission's preliminary view was that cellular operators should be required to provide equivalent service in relation to internationally originated SMS. Accordingly, Clause 6.7 of the draft Network Code was not included in the Draft Network terms.

277. The Commission noted that the current timeline for the provision of cellular number portability provides the parties with sufficient time in which to establish the necessary systems, facilities and commercial arrangements in order to meet the equivalent service requirements in the provision of international SMS services.

Submissions on the Functions Draft Determination

278. While Telecom[69] and Vodafone[70] support the Commissions view with regard to requiring equivalent service, the parties disagree on the solution under which equivalent service should be achieved. Telecom and Vodafone requested that the Commission clearly explain the solution required under the determination for providing equivalent service for international SMS traffic.

279. Telecom proposed in their submission[71] that all New Zealand cellular operators agree to open all New Zealand number ranges in their SMS interconnection arrangements with international operators and provide donor routing for all SMS to and from New Zealand. Where two or more New Zealand cellular operators agree SMS interconnection arrangements with the same international operator, Telecom considers that each operator would remove the other's number ranges from the ambit of their arrangements with the international operator (under this scenario, donor routing would be required between New Zealand cellular operators in order to ensure that each operator maintained equivalent service).

280. Additionally, Telecom expressed concern that:[72]

> International operators who open up the +64 range with Vodafone NZ will strongly resist any attempts by Telecom or other New Zealand operators to persuade them to split that traffic into multiple streams, delivering some traffic to Telecom and some to Vodafone.

[68] Network Code: Section 6.7 page 14.
[69] Telecom submission, 10 June 2005, page 21.
[70] Vodafone submission, 10 June 2005, page 10.
[71] Telecom submission, 10 June 2005, page 22.
[72] Telecom cross submission, 24 June 2005, page 12.

281. Vodafone suggested that where two operators (i.e. Vodafone and Telecom) both have arrangements in place with the same international operators, both carriers will transit SMS traffic to the ported numbers in the other's network in order to ensure that equivalent service is maintained.[73]

282. However, Vodafone considers that where Vodafone has an arrangement in place with an international operator and Telecom does not, any SMS received by Vodafone from that international operator that is addressed to a Vodafone customer will be terminated and any SMS to a number not in Vodafone's network will be dropped (unless a commercial arrangement is reached outside of this determination to provide donor routing for those SMS).

283. Vodafone does not agree with Telecom's argument that Telecom would be unable to negotiate international agreements with international operators with whom Vodafone has an existing arrangement to terminate SMS addressed to the +64 numbering range.[74]

284. Telecom notes that while both proposals will satisfy the equivalent service criteria, its own solution will give all New Zealand cellular operators, and their customer, SMS access to the same international operators. Telecom notes that such an outcome would be likely to give best effect to section 18 of the Act.

Conclusion

285. The Commission notes that ubiquitous equivalent service requirements are an integral factor in maximising the benefits of number portability. The ability to send and receive SMS, particularly nationally, has become an important function for cellular end-users.

286. Equivalent service is covered in Section 14 of the Network Terms. The specific criteria by which a technical solution for SMS would be measured was provided in Section 14.3 of the Draft Network Terms. These criteria require that:

> The LMNP solution deployed by a carrier must not prevent customers with ported numbers from being offered the same (SMS) services and features as those provided to customers on its network with non-ported numbers. This requirement applies to both incoming and outgoing (SMS) services.

287. In Section 9 of the Draft Network Terms, two approaches for the routing of calls in a number portability environment are described namely, 'originating network re-routeing' where the originating network (network upon which the call or SMS was originated) has the ability to route the call to the correct terminating network and 'donor network re-routeing' where the originating network does not have this ability and must route calls via the donor network.

288. For internationally originated SMS, it is reasonable to assume that international operators will not have the ability to route calls correctly where numbers have been ported.

[73] Vodafone submission, 10 June 2005, page 10.
[74] Vodafone cross submission, 24 June 2005, page 5.

Scenario 1 - *where both New Zealand operators have an arrangement in place with the same international operator for the termination of SMS (i.e. Telecom for SMS to 025/027 numbers and Vodafone for SMS to 021/029 numbers)*:

Under this scenario, the international operator originating the SMS to New Zealand numbers will (unknowingly) continue to route these to the donor network in New Zealand. Donor network re-routing will be required in order to ensure that the equivalent service criteria can be met.

Accordingly, the Commission requires that in this situation, the donor network reroute the SMS to the correct terminating network.

Scenario 2 -*Where Carrier A has an arrangement in place with an international operator for the termination of SMS and Carrier B does not*:

If the agreement between Carrier A and an international operator covers all New Zealand numbering ranges, any SMS that Carrier A receives from that international operator that are addressed to a customer of Carrier A can be terminated. However, where Carrier A receives an SMS that is addressed to a customer of Carrier B, the equivalent service criteria as set out in clause 14.3 of the Network Terms does not require that the SMS be re-routed to Carrier B.

Since Carrier B does not provide its customers with non-ported numbers with internationally originated SMS, it will not be required under the equivalent service criteria to provide internationally originated SMS to its customers with ported numbers.

289. The Commission considers that Telecom's proposal amounts to a donor routing service that is distinct from, and additional to, the equivalent service criteria as described in the Network Terms, and the requirements of the cellular telephone number portability service, which is described in the Act as:

> A service that enables an end-user of a cellular telephone network service to change providers of that service but to retain the same telephone number (including the same cellular network access code)

290. The service description for the cellular telephone number portability service only enables an end-user of a cellular telephone network service to change providers of that service while retaining the same telephone number (including the same cellular network access code). Whilst the end-user of the ported number must receive a cellular telephone network service from the RNO, the Act does not require the RNO to provide the same cellular telephone number portability service as the DNO.[75]

291. Telecom's proposed solution will allow Carrier B to free ride on the arrangements that exist between Carrier A and the international operator for the delivery of SMS. The Commission considers that such an outcome would not promote competition for the long-term benefit of end-users.

[75] This interpretation is consistent with the equivalent service criteria in clause 14.3 of the Network Terms.

292. Accordingly, where Carrier A has an arrangement in place with an international operator and Carrier B does not, Carrier A is not required by this determination to re-route SMS received from that international operator to Carrier B. This is no different from the situation without number portability where any SMS received by Carrier A to a number in Carrier B's network would be discarded.

293. Access to Carrier A's international SMS termination arrangements may be agreed commercially between Carrier A and Carrier B.

294. The Commission appreciates the practical difficulties involved in establishing new arrangements with international operators to correctly route internationally originated SMS to ported numbers. Additionally, the Commission recognises that there is currently no agreement in place between Telecom and Vodafone for the forwarding of SMS received to a ported number.

295. However, since the implementation date for mobile number portability is 1 April 2007, the Commission considers that cellular network operators have a sufficient time period over which to make the necessary commercial and technical arrangements in order to provide equivalent service for the delivery of internationally originated SMS.

296. The Commission notes Telecom's concern relating to the use of numbering ranges that are assigned to another New Zealand operator in international SMS agreements but considers that this is an issue relating to the administration of the NAD Rules.

297. Accordingly, Clause 6.7 of the draft Network Code is not included in the Network Terms of this determination.

Equivalent service requirements for local and mobile number portability

298. The equivalent service criteria contained in Section 14.2 of the Network Terms differentiates between local and cellular number portability only with respect to additional post dialling delay. The Commission understands that there is an additional post dialling delay involved in a call setup to a ported number relative to that associated with a non-ported number and that the length of the additional post dial delay may depend on whether the number being ported is associated with a local or cellular service (i.e. is a local or cellular number).

299. Accordingly, clause 14.2.1 of the Draft Network Terms set out the respective additional post dial delay equivalent service criteria for LNP and MNP. TelstraClear[76] argued that if local telephone number portability extends to the porting of a local number between fixed and cellular networks, then clause 14.2.1 of the Network Terms should be amended by adding the following:

> Where a Local Number has been Ported to a Mobile Network, the MNP Equivalent Service Criteria shall apply, and where a Mobile Number has been Ported to a Local Network, the LNP Equivalent Service Criteria shall apply.

[76] TelstraClear submission, 10 June 2005, page 10.

300. The Commission notes that the type of network used by the RNO to provide a local or cellular telephone service should not affect the length of the additional post dialling delay. The Commission considers that the maximum length of additional post dialling delay permitted should be determined based on whether the ported number is a local or a cellular number.

301. Accordingly, the Commission does not agree with TelstraClear in regard to the inclusion of the proposed paragraph.

DATE OF INCEPTION AND EXPIRY

Date of Inception

302. The Functions Draft Determination proposed that the appropriate date of inception should be the date of the determination.

303. The Commission noted that setting the date of inception at the date of the determination will ensure that parties to the determination are required to take the necessary steps after the date of the determination to ensure that they meet the implementation dates specified in the terms and conditions of the determination.

304. Telecom submitted that it is not necessary to specify a date of inception in order to ensure that parties take the necessary steps to meet their obligations by the implementation date. Telecom noted that if the Commission does specify a date of inception, it should be explicit that parties are not required to meet any of the terms of the determination, and that the terms of the determination are not enforceable under section 61 of the Act, until the implementation dates.

305. The Commission is not persuaded by Telecom's argument and remains of the view that the date of inception should be the date of the determination. The Commission notes that the terms of the determination may be enforced by the parties under section 61 of the Act in accordance with the implementation details set out below.

Date of Expiry

306. The Commission is required under section 40(1)(h) of the Act to determine the expiry date of the determination.

Legislation

307. Section 62 of the Act provides for the expiry of determinations:

> 62. Expiry of determinations—
>
> Every determination expires on the earlier of—
> (a) the expiry date stated in the determination; or
> (b) the date on which the designated service or specified service to which the determination applies ceases to have that status because it has either—
> (i) expired under section 65; or
> (ii) been omitted from Schedule 1 under section 66.

308. Section 65 is also relevant and provides that:

> 65. Expiry of designated services and specified services—
>
> (1) Every designated service or specified service expires on—

a) the expiration of 5 years from the date on which the designated service or specified service came into force unless the period is extended in accordance with this section; or
b) if the period is extended in accordance with this section, the expiration of that extended period, unless that extended period is again extended in accordance with this section.

(2) Before the expiry of the period concerned, the Governor-General may, by Order in Council made on the recommendation of the Minister, extend—

a) the period referred to in subsection (1)(a):
b) any extended period.

(3) Each extended period must not be more than 2 years.

(4) The Governor-General may exercise the power conferred by subsection (2) more than once; but not more than once in respect of a particular period.

309. The Number Portability Services came into force on 19 December 2001 and therefore are currently due to expire on 19 December 2006.

The Functions Draft Determination

310. In the Functions Draft Determination, the Commission considered that the expiry dates for the Number Portability Services should, logically, occur after the implementation date of the IPMS system and the commencement of the Number Portability Services. Furthermore, the Commission noted that investments made in the technology used to provide number portability are realised over a long period and accordingly, it is appropriate to set a term for the determination that reflects the nature of this investment.

311. The Commission noted that the availability date for both local and cellular number portability is expected to be April 2007, and that it was therefore apparent that the availability date for number portability would occur after the initial five year period of the Number Portability Services has expired. The Commission noted that setting an expiry date at the date of the initial service expiry would limit the effectiveness of the determination.

312. Accordingly, the Commission's view was that the final determination, so far as it relates to the local and cellular telephone number portability services should expire on the earlier of—

(a) 19 December 2010; or
(b) the date on which the local and cellular telephone number portability services cease to have designated multinetwork service status because they have either—
(i) expired under section 65; or
(ii) been omitted from Schedule 1 under section 66.

Submissions on the Functions Draft Determination

313. Telecom submitted that the proposed expiry date may be unworkable given that technology is likely to change significantly over the next 10 years. Telecom notes that there is a risk that a number portability determination may quickly become outdated, and that ad hoc amendments under sections 58 and 59 of the Act may be cumbersome and inappropriate.

314. Telecom notes that setting the expiry date to correspond with the sunset clauses in the Act would be more consistent with the forward looking approach that the Commission commonly adopts.

Conclusion

315. The Commission disagrees with Telecom's assertion that the proposed expiry date is unworkable. The timeframe proposed in the Functions Draft Determination only covers a period of approximately five years. As noted in section 3.3 of the Network Terms, the requirements of this determination enable parties, as far as possible, to remain in control of their switching infrastructure, implement solutions independent of specific technologies and use different solutions over time.

316. Should the Network and IPMS Terms become outdated or less relevant during the term of the determination, any party to the determination may apply to the Commission for a clarification under section 58 or a reconsideration under section 59.

317. Under Telecom's proposal, the determination would expire prior to the implementation date for local and cellular telephone number portability. Accordingly, it is unlikely that Telecom's proposal would be an effective and workable solution.

318. The determination, so far as it relates to the local telephone number portability service, will expire on the earlier of—
    (a) 19 December 2010; or
    (b) the date on which the local telephone number portability service ceases to have designated multinetwork service status because it has either—
        (i) expired under section 65; or
        (ii) been omitted from Schedule 1 under section 66.

319. The determination, so far as it relates to the cellular telephone number portability service, will expire on the earlier of—
    (a) 19 December 2010; or
    (b) the date on which the cellular telephone number portability service ceases to have designated multinetwork service status because it has either—
        (i) expired under section 65; or
        (ii) been omitted from Schedule 1 under section 66.

IMPLEMENTATION OF THE DETERMINATION

320. All parties to this determination are required to provide the Number Portability Services by means of a system that is consistent with the functions and standards set out in this determination and make payments to access providers of amounts calculated in accordance with the formula set out in this determination.

321. The provision of the Number Portability Services to end-users requires that parties, both individually and collectively, satisfy the terms and conditions of this determination.

322. The Commission has jurisdiction under section 40(1)(f) of the Act to determine the terms and conditions on which the determination is made. This may include that the Number Portability Services be provided by a specified date.

The Industry Portability Management System

323. In order to meet the timeframe for the delivery of number portability in accordance with this determination, the IPMS must be available at the appropriate time so that parties can use it to test their systems and processes and subsequently provide the Number Portability Services by the implementation date.

324. The TCF is building the IPMS on behalf of its members.

325. The responsibility for the timely completion of the IPMS lies with the parties to this determination. In particular, the parties to this determination are required to cooperate with the TCF in ensuring that the IPMS is delivered prior to the 'soft launch' date set out below.

Availability of Number Portability Services to End-users

326. The TCF has indicated on the basis of its implementation programme that the Number Portability Services will be available to end-users on 1 April 2007. The Commission understands that the TCF has requested specific information from its members on implementation in order to assess whether the availability date for local telephone number portability might be brought forward.

327. Accordingly, parties are required to provide the Number Portability Services consistent with this determination not later than 1 April 2007.

328. To be able to make payments for the industry common system costs and per-line set-up costs, the parties are required to calculate the costs of these payments in accordance with the formula set out in the determination.

329. Each party is required to undertake a 'soft launch' of the Number Portability Services with a meaningful quantity of trial customers to test the service as well as the supporting systems and processes. This trial service must be sufficiently robust to identify any faults that may prevent the parties from meeting the requirements of the

determination and must be undertaken in a timeframe that would allow for any evident faults to be rectified prior to 1 April 2007.

330. The parties are required to submit to the Commission for approval, a soft launch proposal not later than 29 September 2006. This proposal must include, but need not be limited to, information on the quantity and type of trial customers involved, the functions and standards that are being tested and measured and the methodology to be used for testing and measuring.

331. The parties are required to complete the soft launch and provide a written report on the soft launch to the Commission and to the TCF, not later than 1 February 2007.

332. To assess progress towards achieving the key implementation dates, each party is required to provide progress reports to the Commission and the TCF. The due dates for the progress reports are 29 September 2006 and 15 December 2006. Progress reports shall describe the status of the operator's system developments, completion of commercial agreements on per-line set-up costs, connection to and testing with the IPMS and any material risks to achieving the implementation dates.

DATED this 31st day of August 2005

Douglas Webb
Telecommunications Commissioner

APPENDIX 1

Eligibility of Access Seekers and Access Providers

A1 The definitions of 'access provider' and 'access seeker' for the 'local telephone number portability service' and 'cellular telephone number portability service' are:

Access provider: Every person who operates -
(a) a PSTN to which numbers have been allocated; and
(b) a telephone service that relates to that number portability service

Access seeker: Any person who -
(a) operates a PSTN to which numbers have been allocated; and
(b) operates a telephone service that relates to that number portability service; and
(c) seeks access to that number portability service

A2 Paragraph (a) of both definitions requires that an access seeker or provider must operate a PSTN to which numbers have been allocated. In order to 'operate' a PSTN, an access seeker or provider must control the working of, or manage or direct the operation of, an element of a PSTN to which numbers have been allocated.

Industry allocation of telephone numbers

A3 The number allocation rules[77] state that

> Rule 1.1.1 The Number Administrator will allocate Code Blocks for use within New Zealand public switched telephone networks under the Number Administration Deed according to these rules.
>
> Rule 1.1.2 These rules apply to the allocation of Code Blocks, and do not imply any obligation on any other party to activate allocated numbers or route calls. Nor do they imply any obligation to pass calls from one Party's network to another Party's network.
>
> Rule 1.2.1 A Code Block may only be allocated to a Service Provider. Service Providers will not be entitled to receive allocations if the Independent Chair has suspended such rights under clause 8.4(c)

A4 'Service Provider' and 'Carrier' are defined in the number allocation rules[78] as

> **Service Provider** means a person providing, or intending to provide, Public Switched Telecommunications Services in New Zealand, who qualifies under the Numbering Administration Deed for the allocation of numbers in accordance with these Rules. A Service provider may, or may not, be a Carrier.
>
> **Carrier** means any person operating a PSTN for providing services

[77] *Telecommunications Numbering Plan Number Allocation Rules*, Version 1.3 (3rd Operational Version), 12 November 2003.
[78] Ibid.

A5 Blocks of telephone numbers are provided to service providers who may or may not be a carrier operating a PSTN. The number allocation rules enable a service provider to be allocated numbers in contemplation of the future supply of a relevant service with that allocated telephone number range. It does not require that the service provider is, or intends to be, a carrier in its own right.

Eligibility of access seekers and access providers over the duration of a determination

A6 The assessment of applicants as access seekers, and other industry participants as access providers, has been undertaken as at the date of this determination.

A7 The number allocation rules enable a service provider to be allocated numbers in the expectation that these numbers may become active at a future time for use with a telephone service relating to the relevant number portability service. Until such time as a service provider activates these numbers, the service provider is not an eligible access seeker or access provider for that relevant number portability service.

A8 The eligibility status of any access provider could change during the period of this determination. The parties are required to notify the Commission when they consider their status as an access provider has changed.

Eligibility of access seekers

A9 Where an applicant is determined to be an eligible access seeker for a number portability service, that eligible access seeker is also an access provider for that service.

Status of TelstraClear as access seeker

A10 In its decision to investigate the Cost Allocation Application, the Commission decided that TelstraClear met the specified requirements of an access seeker in respect of both local telephone number portability and cellular telephone number portability.[79] In reaching its decision, the Commission noted that the Commission reserved its entitlement to undertake further evaluation and analysis during the course of the investigation in order to ascertain whether all applicants meet the access seeker criteria.[80]

A11 The Commission remains satisfied that TelstraClear operates a PSTN to which local telephone numbers have been allocated and operates a local telephone service, and accordingly is an eligible access seeker, and also an eligible access provider, for the local telephone number portability service.

A12 Following the release of the decision to investigate, Telecom restated its concern that many of the applicants fail to qualify as access seekers in relation to either or both of

[79] Application for Determination for Number Portability, 29 July 2003, paragraph 58, p. 8.
[80] ibid, paragraph 59, p. 8.

the local and cellular telephone number portability services.[81]

A13 Telecom noted that it was unable to provide a detailed view as to whether the arrangements by which TelstraClear resells Vodafone's cellular service is sufficient for TelstraClear to qualify as an access seeker for the cellular telephone number portability service. The Commission sought further information from TelstraClear on its eligibility.[82]

A14 In response, TelstraClear advised that it has been issued with 029 and 023 numbering ranges, which are designated for cellular mobile services.[83] TelstraClear notes that cellular services are provided on the Vodafone network. TelstraClear is responsible for the allocation of numbers from TelstraClear's 029 number range, allowing TelstraClear to allocate cellular numbers to its customers which match their fixed PSTN numbers.[84]

A15 Telecom submitted that a 'pure' reseller would not qualify as an access seeker primarily because, in terms of paragraph (a) of Schedule 1, Part 2, Subpart 2 of the Act, resellers do not operate a PSTN to which numbers have been allocated.[85]

A16 Telecom submitted that 'a 'reseller' that provides no additional functionality to the service 'resold' would not be the 'provider' of a 'cellular telephone network service' – rather, that 'reseller' can be said to have nothing more than a billing relationship with the end-user'.[86] Telecom also submitted that it will be crucial that the porting of all cellular number codes is achieved, including 029 codes and to achieve this, it is not necessary to hold that 'resellers' are access seekers[87]. For example, the Commission could include a condition in its determination that access providers must ensure that resellers also make their numbers portable.

A17 The Commission considers that an access seeker or access provider must exert an element of control over a PSTN in order that an access seeker or access provider can be said to operate a PSTN to which numbers have been allocated.

A18 The Commission is satisfied that TelstraClear, through the use of its 029 number range, exerts an element of control over the Vodafone network. The 029 numbers are unique to TelstraClear and are assigned by TelstraClear to customers. These numbers operate on Vodafone's network, and are specifically conditioned within the Vodafone network. TelstraClear accordingly operates a cellular telephone network service and seeks access to the cellular telephone number portability service.

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[81] Letter from Telecom (Blackett) to the Commission (Borthwick), *Number Portability: Submissions on Certain Matters relating to the Commission's decision to investigate,* October 2003.
[82] Letter from the Commission (Borthwick) to TelstraClear (Forsyth), *Number Portability Application: Eligibility of TelstraClear as an Access Seeker for Cellular Number Portability*, 20 February 2004.
[83] Letter from TelstraClear (Forsyth) to the Commission (Borthwick), *Number Portability*, 27 February 2004.
[84] Ibid.
[85] Letter from Telecom (Blackett) to the Commission (Borthwick), *Number Portability: Submissions on Certain Matters relating to the Commission's decision to investigate,* October 2003.
[86] Ibid.
[87] Telecom's submission of 19 August 2004 on number portability cost allocation principles.

A19 The Commission confirms that TelstraClear is an eligible access seeker, and also an eligible access provider, for the cellular telephone number portability service.

Status of CallPlus as access seeker

A20 CallPlus advised that it operates a fixed PSTN to which local telephone numbers have been allocated, that numbers within this allocated range are active on its PSTN and that it operates a telephone service relating to the local telephone number portability service.[88]

A21 The Commission is satisfied that CallPlus is eligible as both an access seeker and an access provider for the local telephone number portability service.

A22 CallPlus has advised that it does not operate a cellular PSTN. CallPlus has been allocated cellular number ranges. However no numbers within these ranges are currently active and accordingly CallPlus does not exert any control over a cellular PSTN to which numbers have been allocated.

A23 The Commission is satisfied that CallPlus is not an eligible access seeker or access provider for the cellular telephone number portability service.

Status of Compass as access seeker

A24 Compass submitted that it is 'an 'access provider' in respect of the designated multinetwork service local telephone number portability, and specifically that Compass does operate a PSTN to which numbers have been provided in Auckland, Wellington and Christchurch.'[89] Compass operates a local telephone service and seeks access to the local telephone number portability service.

A25 The Commission is satisfied that Compass is eligible as both an access seeker and an access provider for the local telephone number portability service.

A26 Compass has advised that it does not operate a cellular PSTN to which numbers have been allocated.[90] The Commission is satisfied that Compass is not an eligible access seeker or access provider for the cellular telephone number portability service.

Status of IHUG as access seeker

A27 IHUG advised that it 'operates a PSTN and has had allocated to it local numbers in accordance with the Number Administration Deed. At present we are operating local service only on a trial basis…'[91] The Commission notes that although IHUG offers the service on a trial basis only, it satisfies the criteria that it operates a telephone service that relates to the local telephone number portability service and seeks access to that service.

[88] Discussion with CallPlus (Cooper) and the Commission (Abbott), 11 March 2004.
[89] Letter from Compass (Hussona) to the Commission (Mosby), *Number Portability*, 10 October 2003
[90] Discussion with Compass (Hussona) and the Commission (Abbott), 15 March 2004.
[91] Letter from IHUG (Diprose) to the Commission (Borthwick), *Request for submission*, 7 October 2003.

A28 The Commission is satisfied that IHUG is eligible as both an access seeker and an access provider for the local telephone number portability service.

A29 IHUG has advised that it does not offer a cellular telephone service that relates to the cellular telephone number portability service.[92] The Commission is satisfied that IHUG is not an eligible access seeker or access provider for the cellular telephone number portability service.

Status of WorldxChange as access seeker

A30 WorldxChange considers that it is an access seeker for the local telephone number portability service. '[WorldxChange] do have local number ranges permanently assigned to us under the National Number Plan, [WorldxChange] does operate a PSTN, [WorldxChange] does have local services running over this PSTN'.[93] WorldxChange says that, although it is using local number ranges allocated under the National Numbering plan, those numbers are not WorldxChange local numbers, but TelstraClear numbers that have been assigned by TelstraClear to WorldxChange in perpetuity.[94]

A31 The Commission considers that the permanent reassignment of local numbers from TelstraClear to WorldxChange for use on WorldxChange's PSTN satisfies the criteria that it operates a PSTN to which numbers have been allocated.

A32 The Commission is satisfied that Worldxchange is eligible as both an access seeker and an access provider for the local telephone number portability service.

A33 WorldxChange has advised that it does not have any cellular services presently operating over any PSTN, and does not have a cellular number range assigned to it.

A34 The Commission is satisfied that WorldxChange is not an eligible access seeker or access provider for the cellular telephone number portability service.

Eligibility of access providers

Status of BCL as access provider

A35 BCL submitted that it is not an eligible access provider for either the local or cellular telephone number portability service.

A36 The Commission is satisfied that BCL is not an eligible access provider for the local or cellular telephone number portability service.

[92] Ibid.
[93] Letter from WorldxChange (Clarkin) to the Commission (Webb), *Submission – Eligibility to be a party to Number Portability Determination Request*, 3 October 2003.
[94] Ibid.

Status of Citylink as access provider

A37 Citylink submitted that it is not an eligible access provider for the local or cellular telephone number portability services.

A38 The Commission is satisfied that Citylink is not an eligible access provider for the local or cellular telephone number portability service.

Status of Counties Power as access provider

A39 Counties Power submits that it is not an access provider for the local or cellular telephone number portability services. [95]

A40 Counties Power advises that '[we] do operate a telecommunications network which members of the public who are contracted to one of our retail partners will be able to use for the purpose of communicating between telephone devices. While members of the public can dial their own calls across our network, we perform no voice switching on the network. We carry customer voice data to our retail partners who then switch telephone calls within our network or into the PSTN. Similarly no telephone numbers have been allocated by us on our network, however retailers operating on the network allocate telephone numbers that point to devices connected to our network'[96]

A41 In respect of the local telephone number portability service, Counties Power submits that 'we do not operate a telephone service in the ordinary meaning of the words, rather we provide a network which allows retailers to operate telephone services. Since the two legs of the 'access provider' definition are conjoined it follows that we are not an 'access provider', irrespective of whether or not our network is a PSTN to which numbers have been allocated.'[97]

A42 The Commission notes that while Counties Power operates a PSTN and numbers are used on that network, local telephone numbers have not been allocated to Counties Power. Rather, local telephone numbers have been allocated to carriers who utilise the Counties Power network.

A43 The Commission is satisfied that Counties Power is not an eligible access provider for the local telephone number portability service.

A44 In respect of the cellular telephone number portability service, Counties Power submits that the Counties Power network 'does not presently support cellular telephone services as we understand the term, that is transmissions to and from portable telephones capable of operating throughout the network area and maintaining service while moving between the local areas covered by different base stations. Consequently none of the telephones operating through our network are likely to be allocated cellular numbers so the issue of cellular telephone number portability does not arise.'[98]

[95] Letter from Counties Power (Lack) to the Commission (Borthwick), *Number Portability*, 2 October 2003.
[96] Ibid.
[97] Ibid.
[98] Ibid.

A45 Counties Power does not operate a PSTN to which cellular numbers have been allocated, or operate a telephone service that relates to the cellular telephone number portability service.

A46 The Commission is satisfied that Counties Power is not an eligible access provider for the cellular telephone number portability service.

Status of Equant as access provider

A47 Equant submited that it is not an access provider for a local or cellular telephone number portability services. Equant exited the retail switched voice market in New Zealand in January 2003.[99]

A48 The Commission is satisfied that Equant is not an access provider for the local or cellular telephone number portability service.

Status of Tangent / United Networks as access provider

A49 The Commission received a response from Tangent in respect of United Networks and Tangent, as Tangent Limited acquired United Networks telecommunications network following Vector Limited's purchase of United Networks.[100]

A50 Tangent has advised that they do not operate a PSTN to which numbers are allocated, and do not operate a telephone service that relates to local or cellular telephone number portability.

A51 The Commission is satisfied that Tangent is not an eligible access provider for the local or cellular telephone number portability service.

Status of Teamtalk as access provider

A52 Teamtalk advised the Commission that it does not meet the conditions as an access provider for the local or cellular telephone number portability services.[101]

A53 The Commission is satisfied that Teamtalk is not an eligible access provider for the local or cellular telephone number portability service.

Status of Telecom as access provider

A54 Telecom has advised the Commission that it satisfies the requirements of an access provider for both the local and cellular telephone number portability services.[102]

[99] Email from Equant (Goodchild) to the Commission (Mosby), *Number Portability: Equant Response*, 29 September 2003.
[100] Letter from Tangent (Elliott) to the Commission (Borthwick), *Number Portability*, 9 October 2003.
[101] Email from Teamtalk (Brown) to the Commission (Mosby), 8 October 2003.

A55 The Commission is satisfied that Telecom is an eligible access provider for the local and cellular telephone number portability services.

Status of Vodafone as access provider

A56 Vodafone has advised the Commission that it meets the conditions of an access provider for the cellular telephone number portability service but does not meet the conditions of an access provider for the local telephone number portability service.[103]

A57 Vodafone notes that it does not currently offer a local calling service to its customers. Telephone numbers have been allocated to Vodafone for local service. However these numbers are not currently allocated to end users. Vodafone submits that '[o]n the basis that the Act requires both numbers to be allocated to the PSTN and provision of a service that relates to local telephone number portability, Vodafone does not believe it satisfies the conditions of an access provider for local telephone number portability.'[104]

A58 Vodafone submits that it satisfies the conditions of an access provider for the cellular telephone number portability service as '(a) Vodafone operates a PSTN to which numbers have been allocated; and (b) Vodafone operates a telephone service that relates to that number portability service.'[105]

A59 The Commission is satisfied that Vodafone is an eligible access provider for the cellular telephone number portability service. Vodafone is not an eligible access provider for the local telephone number portability service.

Status of Woosh as access provider

A60 Woosh has advised the Commission that it does not consider that it meets the criteria specified in the Act to qualify as an access provider for either local or cellular telephone number portability service[106].

A61 The Commission is satisfied that Woosh is not an eligible access provider for the local or cellular telephone number portability service.

[102] Letter from Telecom (Blackett) to Telecom (Borthwick), *Number Portability: Submissions on Certain Matters relating to the Commission's Decision to Investigate*, 7 October 2003.
[103] Letter from Vodafone (Talaic) to the Commission (Borthwick), 7 October 2003.
[104] Ibid.
[105] Ibid.
[106] Letter to the Commission (Mosby) from Woosh (Powles), 23 October 2003.

APPENDIX 2

Formula for Allocating Industry Common System Costs

The Framework

B1. Capex and Opex incurred in any particular year of the determination will be financed by those who are parties to the determination at the beginning of that year based on their market share at the beginning of that year ('Financing Parties').

B2. The Financing Parties in any particular year will receive at the end of that year, a capital cost payment ('Capital Cost Payment') and an operational cost payment ('Operational Cost Payment') from those who are parties to the determination at the end of that year, including new entrants, based on their market share at the end of that year ('Liable Parties')

B3. The calculation of the Capital Cost Payment and Operational Cost Payment is described below.

B4. A Capital Cost Payment calculation will be undertaken for the assets financed as Capex in a particular year and this Capital Cost Payment will be allocated annually amongst the parties until those assets are fully depreciated. The total Capex contribution which a Liable Party is required to make in any particular year will be the sum of their allocations for that year.

B5. If a new entrant is assessed to be an eligible access provider in respect of a particular year and, therefore, becomes a party to the determination, that new entrant will be liable for a Capital Cost Payment and an Operational Cost Payment for that year based on its market share on the last day of that year.

B6. Liable Parties will be required to contribute in accordance with the following payment formula.

The Capital Cost Payment Formula

B7. The Capital Cost Payment ensures that Capex, which generates benefits beyond the year in which it is incurred, is amortized over the period of the determination and recovered annually from all parties to the determination (including new entrant access providers) based on the benefits they derive from the Capex.

B8. The Capital Cost Payment for the Capex incurred in a particular year will be calculated in accordance with the following formula:

$$Capital\ \ Cost\ \ Payment\ \ = \frac{Capex}{\left[\frac{1-\left(\frac{1}{\left(1+\frac{i}{t}\right)^{(n\times t)}}\right)}{\frac{i}{t}}\right]}$$

where: Capex: capital expenditure in that year;
i: funding rate;
n: number of years until the asset has been fully depreciated;
t: number of payments per year.

B9. The beginning of year one will be the date of this determination. Any assets financed as Capex will be depreciated using a straight line method at a rate which will result in the asset being fully depreciated after five years from the date of this determination. For example, an asset financed in year one will be depreciated at a rate of 20% whereas, an asset financed in year four will be depreciated at a rate of 50%.

B10. The funding rate reflects the opportunity cost associated with the financing of Capex. Given that the Financing Parties are likely to face minimal risk of default on payment, the funding rate will be the New Zealand Government bond rate of a maturity equal to the number of years until the asset has been fully depreciated.

B11. The bond rate used for Capex incurred in a particular year will be the bond rate published on the first day of that year (i.e. for Capex incurred in year one, the bond rate used will be the bond rate at the date of the determination).

The Operational Cost Payment Formula

B12. At the beginning of each year, the Financing Parties will prepare and finance an Opex budget, including maintenance, with each contributing towards this budgeted amount based on their market share at the beginning of that year. At the end of each year, the Financing Parties will receive from the Liable Parties, an Operational Cost Payment based on the actual Opex incurred in that year and based on their market share at the end of that year.

Worked examples

B13. The following worked examples illustrate how Capex and Opex are to be financed and recovered through the Capital Cost Payment formula and Operational Cost Payment formula.

Worked Example for Capital Cost Payment

Market Share	Beginning of Y1	End Y1/ Beg. Y2	End Y2/Beg. Y3	End Y3
Operator 1	70%	60%	55%	51%
Operator 2	30%	35%	40%	42%
Operator 3	0%	5%	5%	7%
Total	100%	100%	100%	100%

Year	1	2
Capital Cost Payment assumptions		
Capex	$1,000,000	$20,000
Funding rate	6.0%	6.0%
Number of years until asset fully depreciated	3	2
Number of payments p.a.	1	1
Annual Capital Cost Payment	$374,110	$10,909
Total Capital Cost Payment	$1,122,329	$21,817

Year	1	2	3
Financing Party contribution at beginning of year			
Capex	$1,000,000	$20,000	n/a
Operator 1	$700,000	$12,000	n/a
Operator 2	$300,000	$7,000	n/a
Operator 3	$0	$1,000	n/a
Total	$1,000,000	$20,000	n/a
Capital Cost Payment Allocation for Year 1 Capex			
Capex incurred	$1,000,000	n/a	n/a
Credit from beginning of year			
Operator 1	$261,877	$261,877	$261,877
Operator 2	$112,233	$112,233	$112,233
Operator 3	$0	$0	$0
Total	$374,110	$374,110	$374,110
Allocation at end of year			
Operator 1	-$224,466	-$205,760	-$190,796
Operator 2	-$130,938	-$149,644	-$157,126
Operator 3	-$18,705	-$18,705	-$26,188
Total	-$374,110	-$374,110	-$374,110
Net Payment/Receipt at end of year			
Operator 1	$37,411	$56,116	$71,081
Operator 2	-$18,705	-$37,411	-$44,893
Operator 3	-$18,705	-$18,705	-$26,188
Total	$0	$0	$0

Capital Cost Payment Allocation for Year 2 Capex			
Capex incurred	n/a	$20,000	n/a
Credit from beginning of year			
Operator 1	n/a	$6,545	$6,545
Operator 2	n/a	$3,818	$3,818
Operator 3	n/a	$545	$545
Total	n/a	$10,909	$10,909
Allocation at end of year			
Operator 1	n/a	-$6,000	-$5,563
Operator 2	n/a	-$4,363	-$4,582
Operator 3	n/a	-$545	-$764
Total	n/a	-$10,909	-$10,909
Net Payment/Receipt at end of year			
Operator 1	n/a	$545	$982
Operator 2	n/a	-$545	-$764
Operator 3	n/a	$0	-$218
Total	n/a	$0	$0

Liable Party Total Net Payment/Receipt for Year 1 and Year 2 Capex			
Operator 1	$37,411	$56,662	$72,063
Operator 2	-$18,705	-$37,956	-$45,657
Operator 3	-$18,705	-$18,705	-$26,406
Total	$0	$0	$0

Worked Example for Operational Cost Payment

Market Share	Beginning of Y1	End Y1/ Beg. Y2	End Y2/Beg. Y3	End Y3
Operator 1	70%	60%	55%	51%
Operator 2	30%	35%	40%	42%
Operator 3	0%	5%	5%	7%
Total	100%	100%	100%	100%

Year	**1**	**2**	**3**
Opex budget	$15,000	$20,000	$17,500
Financing Party contribution at beginning of year			
Operator 1	$10,500	$12,000	$9,625
Operator 2	$4,500	$7,000	$7,000
Operator 3	$0	$1,000	$875
Total	$15,000	$20,000	$17,500
Liable Party Operational Cost Payment Allocation (assuming no difference between budgeted Opex and actual Opex)			
Credit from beginning of year			
Operator 1	$10,500	$12,000	$9,625
Operator 2	$4,500	$7,000	$7,000
Operator 3	$0	$1,000	$875
Total	$15,000	$20,000	$17,500
Allocation at end of year			
Operator 1	-$9,000	-$11,000	-$8,925
Operator 2	-$5,250	-$8,000	-$7,350
Operator 3	-$750	-$1,000	-$1,225
Total	-$15,000	-$20,000	-$17,500
Net Payment/Receipt at end of year			
Operator 1	$1,500	$1,000	$700
Operator 2	-$750	-$1,000	-$350
Operator 3	-$750	$0	-$350
Total	$0	$0	$0

APPENDIX 3

Terms for Local and Mobile Number Portability in New Zealand (LMNP Terms)

APPENDIX 4

Network Terms for Local and Mobile Number Portability (Network Terms)

APPENDIX 5

Terms for Local and Mobile Number Portability in New Zealand (LMNP Terms) – marked up version

APPENDIX 6

Network Terms for Local and Mobile Number Portability (Network Terms) – marked up version