

Annexure 2

New Zealand Commerce Commission

**Standard Terms Determination for the designated service
Telecom's unbundled copper local loop network**



COMMERCE COMMISSION

**Standard Terms Determination for the designated service
Telecom's unbundled copper local loop network**

Decision 609

Determination under section 30M of the Telecommunications Act 2001

The Commission: Dr Ross Patterson
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Date of Determination: 7 November 2007

**CONFIDENTIAL MATERIAL IN THIS DETERMINATION IS CONTAINED IN
SQUARE BRACKETS**

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EXECUTIVE SUMMARY¹

- i. The Unbundled Copper Local Loop (UCLL) service enables access to and interconnection with Telecom's copper local loop between the end-users premises and the Telecom local exchange. This service allows Access Seekers to provide voice and broadband services to their customers without the need to replicate the copper local loop.
- ii. On 22 February 2007, the Commission initiated a standard terms determination process in relation to the designated access service Telecom's unbundled copper local loop network service.
- iii. The Commission gave written notice to Telecom on 4 April 2007 requiring it to submit a standard terms proposal to the Commission on the non-price terms for the service and on 12 June 2007, Telecom submitted a proposal. Interested parties were invited to submit on this proposal.
- iv. On 31 July 2007, the Commission released a draft Standard Terms Determination. Submissions on the draft determination were received from Telecom, TelstraClear, Kordia/Orcon/CallPlus, Vodafone/iHug, Vector, TUANZ, InternetNZ, Rural Women NZ and the Selwyn Community Council.
- v. On 19 and 20 September 2007, the Commission held a public conference to provide an opportunity for the Commission to seek additional information on particular aspects of the submissions.
- vi. In this final Standard Terms Determination, the Commission has determined the price and non-price terms for the UCLL service. It contains sufficient terms to allow Telecom to make the service available to an Access Seeker without the need for the Access Seeker to enter into an agreement with Telecom for provision of the service. The key terms are summarised below.

Price terms

- vii. The Commission has retained its "peer group" benchmarking approach to determining the initial price as required by the Act, as described in its draft determination, and has used an "econometric" approach as a cross check. In accordance with submissions at the conference, the Commission has also reviewed its benchmarking to account for

¹ This executive summary does not form part of the Commission's Standard Terms Determination

additional price observations. This has resulted in an increase in the UCLL monthly rental price from that in the draft STD.

- viii. In benchmarking against prices for similar services in comparable countries, the Commission considers that:
- a median price point will better promote competition, static and dynamic efficiency, and the long term benefits of end-users than the 75th percentile;
 - a blended average of nominal exchange rates and purchasing power parity (PPP) rates is appropriate, with the weights reflecting constituent elements of the cost of the UCLL service (with approximately 50% of local network costs related to non-tradeable components (such as labour), and 50% related to tradeable capital inputs);
 - geographically de-averaged prices will better reflect costs for use of the UCLL service and maintain investment in associated infrastructure, compared with an averaged price; and
 - providing cross-subsidies is not the role of the Commission which is charged with promoting competition in telecommunications markets.
- ix. Accordingly, the Commission has determined that the connection and monthly rental prices for the service are:
- | | |
|---|--|
| Monthly rental | \$19.84 (urban exchange)
\$36.63 (non-urban exchange) |
| Individual new connection where a site visit is required | \$225 |
| Individual new connection or customer transfer, where no site visit is required | \$74.83 |
| Bulk new connection or customer transfer, where no site visit is required | \$56.12 |
- x. The Commission has also determined a number of other prices for the ancillary services that support the UCLL service.

Non-price terms

- xi. In determining the non-price terms, the Commission has generally adopted:
- the non-price terms that were unanimously recommended by the TCF and only made changes to those recommendations where there was a compelling reason to do so;
 - those changes to the non-price terms included in Telecom's cross submission on the draft STD which the Commission believes dealt with Access Seekers' concerns; and
 - those non-price terms where there are well established Telecom operational systems in place (e.g. fault prioritisation) which would be expensive to adjust. The Commission has only made changes where there is a clear benefit, given that Access Seekers and Telecom Retail will ultimately receive equivalent service levels through the operational separation process.

Cabinetisation

- xii. The Commission acknowledges that, during the life of this determination, copper local loops from the exchange will be replaced by copper local loops from distribution cabinets in the street. Accordingly, provision has been made for Access Seekers to receive sufficient notice of any planned cabinetisation within an exchange area, for use in their service and investment planning.
- xiii. Under the UCLL STD, Telecom is required to provide Access Seekers with:
- an initial notice of cabinetisation for the first 24 months;
 - a cabinetisation notice at least 24 months before any other cabinetisation takes place (i.e. that was not addressed in the initial notice), and,
 - a rolling three year forecast of its cabinetisation plans on each six month anniversary of the determination date.
- xiv. The notices must set out Telecom's cabinetisation plans on a per exchange basis (including the suburbs affected and the number or percentage of MPFs that will be affected) and explain the effect on any Access Seekers in receipt of the UCLL service.
- xv. In some circumstances, such as where there is a material risk to the UCLL service, Telecom may amend these notices or may cabinetise a part of its network by giving less than 24 months notice. In these events and if requested by the Access Seeker, Telecom must pay for the transfer of the Access Seeker's customers to other Telecom services.

Implementation plan

- xvi. The Commission has determined a 15 month implementation plan commencing from the determination date which comprises;
 - an eight week period during which Telecom and Access Seekers prepare their networks and systems;
 - a 13 week soft launch period to test and refine the service; and
 - a 10 month period during which Telecom is required to meet certain roll-out performance objectives relating to the service.
- xvii. During the implementation period, Telecom is required to roll-out at least 15 co-located exchanges per quarter. The selection of these exchanges is based on the priorities of Access Seekers, thereby ensuring the promotion of competition. There are no limits on the number of unbundled copper local loops which Access Seekers can order at a co-located exchange during this implementation period.
- xviii. At the end of the implementation period, Telecom will have unbundled up to 75 exchanges, provided Access Seekers have placed firm orders.
- xix. The service levels determined by the Commission will apply during the implementation period, but the associated monetary performance penalties will apply only from the completion of the soft launch.

Commercially sensitive information cited in this determination was provided subject to an order made under section 15(i) of the Act and section 100 of the Commerce Act 1986. The confidentiality order in relation to the standard terms determination process for Telecom's unbundled copper local loop network (the Order) is dated 14 June 2007 and is available on the Commission's website.

Information in relation to Telecom's restricted information is denoted as [TNZRI]. Access seeker's restricted information is denoted in a similar way, for example, TelstraClear restricted information is labelled [TCLRI]. Commission only information is denoted as [COI].

All restricted and Commission only information is subject to the Order and has been extracted from the public version of this determination.

Key documents are available on the Commission's website at:

<http://www.comcom.govt.nz/IndustryRegulation/Telecommunications/StandardTermsDeterminations/UnbundledLocalLoopService/DecisionsList1.aspx>

THE DETERMINATION FRAMEWORK

1. This standard terms determination ('STD') for Telecom's unbundled copper local loop network ('UCLL') comprises this decision report and the appended:
 - UCLL Terms comprising:
 - (a) UCLL General Terms
 - (b) Schedule 1 - UCLL Service Description
 - (c) Schedule 2 - UCLL Price List
 - (d) Schedule 3 - UCLL Service Level Terms
 - (e) Schedule 4 - UCLL Operations Manual
 - (f) Schedule 5 - Interference Management Plan
 - Implementation Plan.

Purpose

2. In making a STD, the Commission must consider the purpose set out in section 18 of the Telecommunications Act 2001 ('the Act'). Section 18 describes the purpose of Part 2 and Schedules 1, 3, and 3A as follows:

18 Purpose

- (1) The purpose of this Part and Schedules 1 to 3 is to promote competition in telecommunications markets for the long-term benefit of end-users of telecommunications services within New Zealand by regulating, and providing for the regulation of, the supply of certain telecommunications services between service providers.
- (2) In determining whether or not, or the extent to which, any act or omission will result, or will be likely to result, in competition in telecommunications markets for the long-term benefit of end-users of telecommunications services within New Zealand, the efficiencies that will result, or will be likely to result, from that act or omission must be considered.
- (3) Except as otherwise expressly provided, nothing in this Act limits the application of this section.
- (4) Subsection (3) is for the avoidance of doubt.

3. Section 19 of the Act directs the Commission to consider, when making a determination under Part 2, to satisfy itself that the determination best gives, or is likely to best give, effect to the purpose set out in section 18. Section 19 states:

19 Commission and Minister must consider purpose set out in section 18 and additional matters

If the Commission or the Minister (as the case may be) is required under this Part or any of Schedules 1, 3, and 3A to make a recommendation, determination, or a decision, the Commission or the Minister must—

- (a) consider the purpose set out in section 18; and
- (b) if applicable, consider the additional matters set out in Schedule 1 regarding the application of section 18; and
- (c) make the recommendation, determination, or decision that the Commission or Minister considers best gives, or is likely to best give, effect to the purpose set out in section 18.

Determination process

4. On 22 February 2007, the Commission initiated a STD process in relation to UCLL (the designated access service “Telecom’s unbundled copper local loop network”) under section 30C of the Act.
5. The Commission conducted a scoping workshop on 22 March 2007. The workshop was open to all parties to the STD. The purpose of the workshop was to provide the Commission with information to assist it in specifying:
 - a reasonable period of time within which Telecom must submit a standard terms proposal (‘STP’) under section 30F: and
 - any additional requirements for that STP under 30F(2).
6. The Commission gave written notice to Telecom on 4 April 2007 requiring it to submit to the Commission, an STP by 12 June 2007 that complied with section 30G of the Act. In the notice, the Commission specified a number of additional requirements that Telecom was required to provide in its STP. The Commission also stated that did not require the STP to address the supply of sub-loops between an end user’s building (or building distribution frame) to the handover point in a distribution cabinet (or equivalent facility).
7. On 12 June 2007, Telecom submitted a STP for this designated access service and interested parties were invited to submit on this STP.
8. On 28 June 2007, five submissions on the STP were received from Telecom, Orcon/CallPlus, TelstraClear, Vodafone/ihug, InternetNZ, MediaLab, and Vector Communications.
9. On 31 July 2007 the Commission issued its draft STD in accordance with section 30K of the Act. Submissions were received on 29 August 2007 from Telecom, Orcon/Kordia/CallPlus, TelstraClear, Vodafone/ihug, InternetNZ, MediaLab, Rural Women NZ, Selwyn Community Council, TUANZ and Vector Communications. On 12 September 2007 cross-submissions were received from Telecom, Orcon/Kordia/CallPlus, TelstraClear, Vodafone/ihug, InternetNZ, TUANZ and Vector Communications.

10. From 19-21 September 2007 the Commission held a conference, pursuant to section 30L of the Act, for the Commission to seek additional information on particular aspects of the submissions and to provide interested parties with an opportunity to give a brief overview of their position, by presenting opening and closing submissions.
11. Key documents (including transcripts) are available on the Commission's website at:

<http://www.comcom.govt.nz/IndustryRegulation/Telecommunications/StandardTermsDeterminations/UnbundledLocalLoopService/DecisionsList1.aspx>

The service description

12. This STD concerns the designated access service of "Telecom's unbundled copper local loop network" as set out in subpart 1 of Part 2 of Schedule 1 of the Act. This service is defined as follows:

Telecom's unbundled copper local loop network

<i>Description of service:</i>	A service (and its associated functions, including the associated functions of Telecom's operational support systems) that enables access to, and interconnection with, Telecom's copper local loop network (including any relevant line in the exchange or distribution cabinet)
<i>Conditions:</i>	Nil
<i>Access provider:</i>	Telecom
<i>Access seeker:</i>	A service provider who seeks access to the service
<i>Access principles:</i>	The standard access principles set out in clause 5
<i>Limits on access principles:</i>	The limits set out in clause 6
<i>Initial pricing principle:</i>	Benchmarking against prices for similar services in comparable countries that use a forward-looking cost-based pricing method
<i>Final pricing principle:</i>	TSLRIC
<i>Requirement referred to in section 45 for final pricing principle:</i>	Nil

Additional matters that must be considered regarding application of section 18

The Commission must consider relativity between this service and Telecom's unbundled bitstream access service (to the extent that terms and conditions have been determined for that service)

Statutory requirements for an STD

13. The Commission makes this STD in accordance with sections 30M, 30O, 30P and 30Q of the Act.
14. In this determination, section 30P(1)(a) and (b) do not apply and, therefore, the Commission has determined the prices in accordance with the applicable initial pricing principle for the designated access service of “Telecom’s unbundled copper local loop network” (section 30P(1)(c)).
15. Section 30O specifies the matters to be included in the final STD as follows:

30O Matters to be included in STD: general

- (1) A STD must—
 - (a) specify sufficient terms to allow, without the need for the access seeker to enter into an agreement with the access provider, the designated access service or specified service to be made available within the time frames specified under paragraph (b); and
 - (b) state the time frames within which the access provider must make the service available to—
 - (i) every person who is already an access seeker when the STD is made; and
 - (ii) every person who becomes an access seeker after the STD is made; and
 - (c) specify the reasons for the STD; and
 - (d) specify the terms and conditions (if any) on which the STD is made; and
 - (e) specify the actions (if any) that a party to the STD must take or refrain from taking.
- (2) To avoid doubt, a STD may also include, without limitation, terms concerning any or all of the following matters:
 - (a) dispute resolution procedures:
 - (b) the consequences of a breach of the determination (including provision for set-off or withholding rights, or liquidated damages):

- (c) suspension and termination of the service:
 - (d) procedures for, or restrictions on, assignment of the service.
- (3) The Commission must identify which of the terms (if any) specified in a STD are allowed to be varied, on an application made under section 30V by a party to that determination, under a residual terms determination.

Timeframe for supply to access seekers

16. The Commission is required by section 30O(1)(b) to specify in the STD, the timeframes within which the access provider must make the service available to:
- every person who is already an access seeker at the time the STD is made; and
 - every person who becomes an access seeker after the STD is made.
17. The timeframes within which Telecom must make the service available are contained in the Implementation Plan in Appendix A.

Telecom as Access Seeker

18. In its draft STD the Commission indicated its preliminary view that, in respect of Telecom² as the Access Provider of the UCLL designated access service, the Act does not contemplate that the Access Provider and Access Seeker are intended to be the same organisation.
19. Telecom submitted that its business units qualify as eligible Access Seekers under the Act and that in the absence of such status, Telecom Wholesale will have no voice to amend STDs whilst Access Seekers do have a 'voice'.
20. Orcon, Kordia and Callplus agreed with the Commission's preliminary view. TelstraClear agreed with the Commission's preliminary view in its submissions and then disagreed in its cross submissions.
21. While the Commission notes that it is not required by the Act to give a view on this issue as it is ultimately a matter of statutory interpretation, the Commission maintains its preliminary view and in the interests of clarity makes the following points:
- The Access Provider, in addition to Access Seekers has a 'voice' in respect of any changes to an STD. Telecom, defined broadly as the Telecom Corporation of New Zealand (which includes Telecom Wholesale) is the Access Provider.

² Defined as Telecom Corporation of New Zealand and includes any of its subsidiaries, section 5 Telecommunications Act 2001.

- Operational Separation does not establish Telecom business units as separate legal entities. This would only be achieved by structural separation or subsequent sale of a business unit.
- The scheme and purpose of the Act support the view that in respect of UCLL and Co-location, an Access Seeker and Access Provider cannot concurrently be the same legal entity.
- Telecom's draft Separation Undertakings exclude Telecom from the definition of Access Seeker.³

Access principles and limits on those principles

22. Clauses 5 and 6 of Schedule 1 to the Act apply in relation to this designated access service. They provide:

5 Standard access principles for designated access services and specified services

The following standard access principles apply to designated access services and specified services:

- principle 1*: the access provider must provide the service to the access seeker in a timely manner;
- principle 2*: the service must be supplied to a standard that is consistent with international best practice;
- principle 3*: the access provider must provide the service on terms and conditions (excluding price) that are consistent with those terms and conditions on which the access provider provides the service to itself;
- principle 4*: the access provider must, if requested, provide an access seeker with information about a designated access service or specified service at the same level of detail, and within the same time frame, that the access provider would provide that information had it been requested by one of its own business units.

6 Limits on application of standard access principles set out in clause 5

- Principles 1 to 4 set out in clause 5 are limited by the following factors:
 - reasonable technical and operational practicability having regard to the access provider's network;
 - network security and safety;
 - existing legal duties on the access provider to provide a defined level of service to users of the service;
 - the inability, or likely inability, of the access seeker to comply with any reasonable conditions on which the service is supplied;
 - any request for a lesser standard of service from an access seeker

³ Telecom Draft Separation Undertaking, 25 October 2007, clause 1.1.

- (2) Principle 4 set out in clause 5 –
- (a) does not extend to any information about identifiable individual customers of the access provider; and
 - (b) is subject to the requirement that any confidential information provided to the access seeker, in accordance with that principle, must be kept confidential to that access seeker.
23. The Commission has taken these principles and limits into account when making the STD along with sections 18 and 19.

Compliance with standard access principle 3

24. Clause 2.3 of the UCLL General Terms incorporates the access principles and the limits on those access principles from clauses 5 and 6 of Schedule 1 to the Act.
25. Access principle 3 requires that Telecom provide the UCLL service on terms and conditions (excluding price) that are consistent with those terms and conditions on which it provides the service to itself.
26. Telecom provided a high level explanation in its submissions as to how it would ensure consistency under this principle.
27. On 26 September 2007 the Minister of Communications made the Telecommunications (Operational Separation) Determination 2007 (**Operational Separation Determination**). This provides further requirements with which the separation plan under Part 2A of the Act must comply and are in addition to those requirements in section 69D of the Act. Clause 9 of the Operational Separation Determination states that:

In this determination, unless the context otherwise requires, **equivalence of inputs or EOI**—

- (a) means that, if Telecom is required to provide a relevant service to an access seeker,—
 - (i) Telecom must provide the access seeker and Telecom itself with the same service; and
 - (ii) Telecom must deliver that service to the access seeker and to Telecom itself on the same timescales and on the same terms and conditions (including price and service levels); and
 - (iii) Telecom must deliver that service to the access seeker and to Telecom itself by means of the same systems and processes (including operational support processes); and
 - (iv) Telecom must provide the access seeker and Telecom itself with the same commercial information about those services, systems, and processes; and
- (b) includes, if Telecom is required to provide a relevant service to an access seeker, the use by Telecom of services, systems, and processes that access seekers must be able to use in the same way, and with the same degree of reliability and performance, as those services, systems, and processes are used by Telecom; and
- (c) is subject to clause 8.

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28. Accordingly, the Commission considers that the implementation of full equivalence of inputs (EOI) under Part 2A will largely subsume the operation of access principle 3. That is, when services are provided on an EOI basis, it follows that those services will be provided on the basis of consistent non-price terms.
29. As outlined in the Operational Separation Determination (and Telecom's draft Separation Undertakings), there will be a staged approach towards full EOI. During this transition before full EOI, access principle 3 - the requirement for consistent terms and conditions (excluding price) remains relevant. As such, there may be occasion to compare Telecom's internal service provision with the service provided to Access Seekers to check for consistency in the non-price terms and conditions, for example in relation to SLAs.
30. The Commission therefore does not consider that arguments made by Telecom that there may be inconsistent application of the UCLL STD and operational separation are sound.

Information disclosure

31. Clause 2.3 of the UCLL General Terms incorporates the access principles as the guiding principles. As such, the Commission may require Telecom, in accordance with section 69ZC, to prepare and disclose information about the operation and behaviour of any part of its business that provides prescribed designated or specified services.
32. In addition, the Commission may require Telecom to adopt, in the preparation or compilation of that information, any methodology that the Commission requires. The Commission may also require other information disclosure as further set out in section 69ZC of the Act. The purpose of such disclosure is specified in section 69ZC(1)(b) as follows:
- (b) for the purpose of enabling monitoring of , and facilitating compliance with, prescribed access principles –
- (i) that are incorporated in any determination, approved code, or registered undertaking; and
- (ii) with which the access provider is required to comply.
33. At this stage the Commission does not intend to seek information disclosure pursuant to section 69ZC as part of this determination, but may do so in the future.

Relativity

34. The Commission must, as an additional matter regarding the application of section 18, consider relativity between this service and Telecom's unbundled

bitstream access service (to the extent that terms and conditions have been determined for that service).

35. As no terms and conditions have been determined for UBA at the time the UCLL Determination takes effect, the Commission is not required to consider relativity. However, given that a draft of the UBA STD has been released and the final UBA STD is expected in the near future, the Commission has considered relativity to the extent that it is appropriate at this interim stage. For example, the Commission has had regard to the need for consistency between equivalent provisions in the UCLL General Terms and the UBA General Terms. Relativity will be considered in the final UBA STD at which time the terms and conditions of the UCLL Service will have been determined.

Amendments to an STD

36. The Act provides a range of mechanisms to amend an STD including:
- a review under section 30R;
 - an RTD under section 30ZB;
 - a pricing review determination under section 51;
 - a clarification under section 58; and
 - a reconsideration under section 59.
37. Section 30R allows the Commission, on its own initiative, to commence a review at any time of all or any of the terms of an STD. After review, the Commission may replace an STD, or vary, add, or delete any of its terms, if it considers it necessary to do so. The review can also address aspects of a service not covered in an initial STD and update the terms of an STD to reflect regulatory or technological change.
38. Apart from the requirements in section 30R, the Commission may conduct the review in a manner and within a timeframe as the Commission thinks fit. This enables the Commission to assess the appropriate form and degree of consultation on a case by case basis.⁴ However, the Commission will give notice in the Government Gazette. The Commission expects that if there is unanimous agreement in the Telecommunications Carriers Forum for a particular change, the consultation process is likely to be very short and completed quickly.

Variation of terms under a residual terms determination

39. The Commission is required by section 30O(3) of the Act to identify which of the terms (if any) specified in a STD are allowed to be varied on an application for a residual terms determination (RTD) made under section 30V.

⁴ This can be contrasted with the process under section 59(3) of the Act which requires that a reconsideration determination follow the same process as followed for the initial determination.

40. An RTD is an alternative to a private bilateral agreement or to generic changes to an entire STD.⁵ It is only in respect of a RTD that there is a limit on which terms may be varied. All terms may still be varied by parties as part of a private commercial agreement⁶ or by the Commission when clarifying or reviewing an STD.
41. In the draft UCLL STD, the Commission proposed that the terms in the following schedules should not be variable for the purposes of an RTD:
- Schedule 1 Service Description;
 - Schedule 2 Price List;
 - Implementation Plan.
42. Submissions from Telecom and Access Seekers indicated a preference for variability of *all* terms or variability of *no* terms. The key reason to support this view was the relationship between service levels (Schedule 3 Service Level Terms) and the prices (Schedule 2 Price List).
43. The Commission has considered these submissions and what is likely to give best effect to section 18. Its starting point is that consumers would be best served with maximum flexibility, and accordingly all terms should be variable for the purpose of an RTD unless there is good reason otherwise.
44. In some areas certainty outweighs flexibility. For example, as the Implementation Plan has immediate effect and then falls away after a period of time, it is appropriate that no regulated variation of bilateral arrangements via the RTD process take place during that stage. In addition, terms should not be variable if to do so would undermine the scheme and purpose of the Act.
45. On this basis the Commission has determined that all terms may be varied for an RTD application made under section 30V by a party to the UCLL STD, apart from those listed below:

UCLL General Terms

- a) Section 2 - Guiding Principles
- b) Clause 8.3 – Rights not excluded
- c) Clause 8.4 - Amendment
- d) Clause 10.1 – (in section 10 - Change mechanism for UCLL Operations Manual and UCLL Service Level Terms)
- e) Section 39 – Dispute Resolution
- f) Clause 47 – Change mechanism for Interference Management Plan

⁵ Other amendments to an STD can occur via other provisions such as pricing under s42 in the Telecommunications Act 2001

⁶ However Access Seeker's may not apply a RTD if prevented by the 18 month rule. See sections 30W and 30S(2) Telecommunications Act 2001.

Schedule 1 UCLL Service Description

- g) Clause 1.2 (in section 1 – The UCLL Service)

Schedule 2 UCLL Price List

- h) Service Component 1.1 – MPF New Connection
- i) Service Component 1.2 – MPF Transfer
- j) Service Component 1.3 – Other Service to MPF Transfer
- k) Service Component 1.7 - MPF Relinquishment
- l) Service Component 2.1 – MPF Service Monthly Rental Charge
- m) Service Component 2.2 – Tie Cable Service Space Rental Charge

Implementation Plan

- n) All sections and clauses in the Implementation Plan

Operational separation

46. Telecom submits⁷ that its STP was prepared amidst significant uncertainty for Telecom and the industry given pending separation in accordance with Part 2A of the Act. This submission was made on the basis that the future Telecom organisational structure and operating environment within which the service (and its associated functions) would be provided, was unknown. Telecom's submissions noted that the pending operational separation undertakings will be legally binding on it. Accordingly, Telecom proposed that, if anything in the STD proves to be inconsistent with any requirement in either of those documents, Telecom will have no option but to seek amendment to the STD in order to give effect to the separation determination/plan and that it should not be liable under the Standard terms for such inconsistencies.
47. Following Telecom's submission the Minister of Communications has made the Operational Separation Determination and Telecom has submitted its draft Separation Undertakings. As indicated in paragraph 28 above, the Commission considers that 'consistency' requirements from the operational separation undertakings are likely to subsume the requirements of the UCLL STD so that when services are provided on an EOI basis it follows that those services will be provided on the basis of consistent non-price terms.
48. The Commission also notes that there are a range of established mechanisms under the Act to allow amendments to a STD should the need arise. On this basis, therefore, it is inappropriate to provide such a broad exclusion of liability as proposed in Telecom's UCLL STP. In light of Telecom's subsequent concern as to the ambiguity of the words 'have regard' and the range of pre-existing mechanisms under the Act to amend a STD, the Commission has removed this section from the UCLL General Terms.

⁷ Telecom's Standard Terms Proposal, 12 June 2007, paragraphs 37 and 38.

Breach of an STD

49. The UCLL STD provides a range of dispute resolution procedures.⁸ However, the STD does not prevent any party from seeking remedies available to it under the Act.⁹
50. Under section 156N(b) of the Act, an STD is an enforceable matter. As such, Telecom and/or the Access Seeker may make a written complaint to the Commission alleging a breach of the STD. The Commission must then decide what action, if any, to take, including whether to take action in the High Court.¹⁰ Telecom and/or the Access Seeker may also take action High Court under section 156P(1) of the Act.
51. On the application of the Commission, the High Court may, in addition to any other remedies, order a pecuniary penalty if there has been a breach of the STD and that the amount of any compensatory damages that can be awarded will be less than the commercial gain resulting from the breach.¹¹

⁸ See section 39 UCLL General Terms

⁹ See clause 39.13 UCLL General Terms

¹⁰ See sections 156O, 156P, 156Q and 156R of the Act

¹¹ See section 156Q(2) and 156(R) of the Act.

SERVICE DESCRIPTION

52. The UCLL service is described in Appendix A of the UCLL STD, Schedule 1 UCLL Service Description as follows:

The UCLL Service is a service (and its associated functions, including the associated functions of Telecom’s operational support systems) that enables access to, and interconnection with, Telecom’s copper local loop network (including any relevant line in the exchange).

53. With the exception of the reference to “or distribution cabinet”, the wording replicates the description of service in the Act¹². The reference to “distribution cabinet” does not appear because the Commission decided, following consultation with interested parties, not to include copper local loops from distribution cabinets at that stage. The UCLL Service in Appendix A, Schedule 1 is then further expanded upon as follows:

The UCLL Service comprises the Metallic Path Facility (‘MPF’) Service, the Tie Cable Service, and various ancillary services (as described in the UCLL Operations Manual and the UCLL Price List).

The UCLL Service is an input service which the Access Seeker can use as a building block to provide services to End Users. The Access Seeker can combine the UCLL Service with network transport services offered by Telecom (or with the Access Seeker’s own network or wholesale network transport services provided by other providers) and service level functionality to deliver services to End Users.

54. The UCLL service specifically excludes:¹³
- access to, or interconnection with, Telecom’s copper local loop network at any cabinet or at any distribution point apart from a Telecom exchange Main Distribution Frame (‘MDF’);
 - Telecom’s Co-location Service which is an optional additional service;
 - Telecom’s unbundled copper local loop network backhaul service which is an optional additional service;
 - provision or maintenance of End User premise wiring;
 - configuration, monitoring, operation, support or maintenance of Access Seekers' or End Users' applications, equipment or networks;
 - configuration or on-going support of the End User’s applications;
 - control of access to the UCLL Service end points through any network beyond the UCLL Service handover points;
 - any active Telecom analogue telephone service (‘POTS’) on the same MPF and any service over the MPF such as lawful intercept and 111 service;

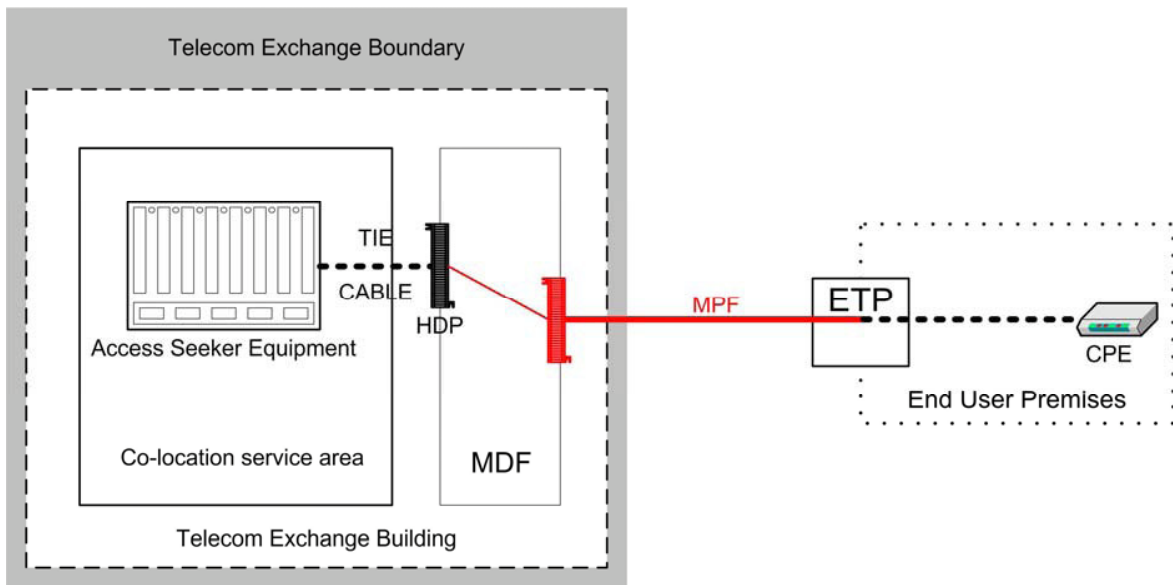
¹² as set out in the Determination Framework Chapter above

¹³ Note this is not intended to be an exhaustive list of exclusions or to limit what is excluded from the UCLL Service.

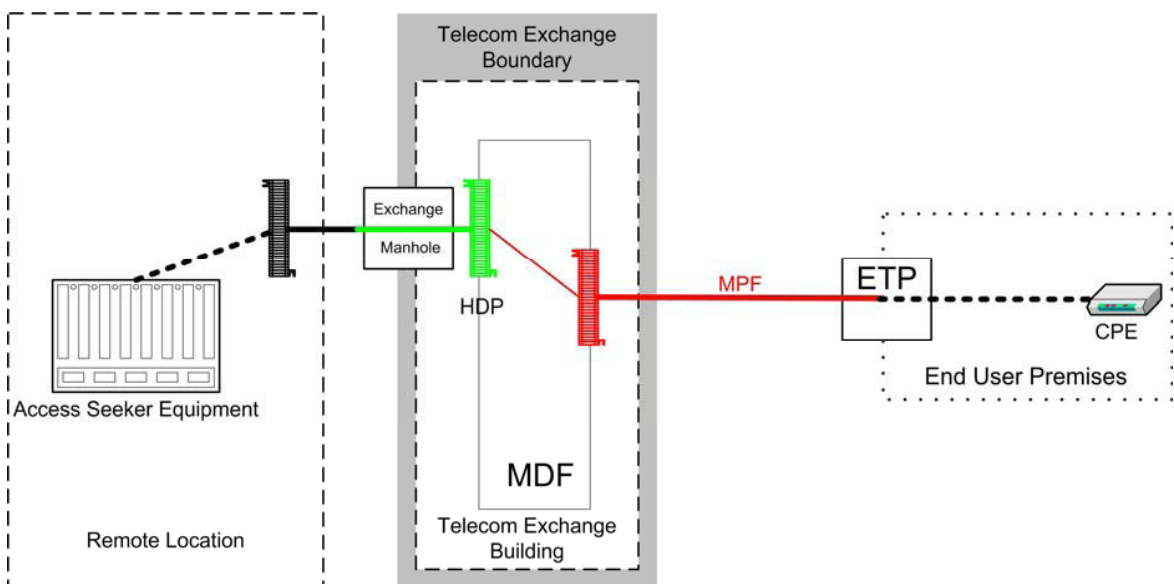
- installation of new copper loops between the Telecom exchange and an End User's premises or installation of new service leads at an End User's premises; and
- access to MPFs that support a pair gain system and where there is no other suitable pair available onto which the pair gain system can be transferred, if still required.

55. Diagrams of the MPF service are shown below:

(i) MPF Service



(ii) MPF Service and Tie Cable Service



Standard terms determination for Telecom's unbundled copper local loop network

HDP – handover distribution point
MPF – metallic path facility

MDF – main distribution frame
ETP – external termination point

PRICE TERMS - THE DRAFT STD

Introduction

56. A two-part tariff structure applies to the UCLL service. There is a one-off price for connection of the UCLL service (where such connection may either refer to the transfer of an existing UCLL service from one Access Seeker, or to the connection of a new UCLL service that is not currently in use), and a recurring monthly price for the UCLL service. The connection element reflects the one-off costs of setting up the service (e.g. switching the local loops from the incumbent to the Access Seeker network), while the on-going monthly rental charge reflects the costs of maintaining and running the network.
57. The Commission is required to set the monthly rental and connection prices for the UCLL service. These are calculated using the initial pricing principle (IPP) and, if applicable, using the final pricing principle of TSLRIC.
58. The Act directs that the IPP for the UCLL service is:
- “Benchmarking against prices for similar services in comparable countries that use a forward looking cost-based pricing method”*
59. The following sections summarise the approach taken by the Commission in the draft STD, and the submissions from parties on the draft STD.
60. The Commission then sets out the approach it has taken, in light of submissions, to benchmarking UCLL core charges in this determination. The Commission’s analysis focuses on benchmarking, selection of a price point, and de-averaging of prices.

Summary of the draft STD

UCLL Service Monthly Rental Rates

61. In applying the IPP in the draft STD, the Commission applied a series of filters or screening criteria to overseas countries where local loop unbundling had been introduced. The first set of screening criteria were to ensure that the services provided in the overseas jurisdiction are similar to those being considered by the Commission, and that the pricing of regulated access to those services occurs on a forward-looking cost basis. The Commission identified those jurisdictions where updated and recent information is available on UCLL rates, and where unbundling was operational and loops had been unbundled.

62. The Commission’s draft STD listed those jurisdictions that satisfied the initial screening criteria, which in the case of the UCLL service included 13 European countries, Australia, and Canada, as well as 51 states in the US where unbundled loop rates are set by state regulators.
63. Having identified an initial set of international benchmarks, the Commission then considered the question of comparability with New Zealand. Specifically, the Commission considered a range of factors that were likely to influence the costs associated with a local loop network, including total population, population density, population concentration (urbanisation), the number of main lines, teledensity, labour costs, and GDP per capita. Of these factors, urbanisation, population density, and teledensity were considered to be the most important influences on UCLL costs,¹⁴ and these three cost drivers were used to evaluate the comparability of the overseas jurisdictions to New Zealand operating conditions.
64. In order to identify comparable countries, the draft STD set out the New Zealand values for each of the three cost drivers, and placed a range around these values. These ranges are summarised in Table 1.

Table 1: Comparability Criteria used in Draft STD

Indicator	New Zealand value	Range for sample restrictions
Degree of urbanisation	86%	$X \geq 60\%$
Population density	15	$X \leq 30$
Teledensity	42.91%	$20\% \leq X \leq 60\%$

65. Relevant cost data was gathered from the overseas jurisdictions, and those whose cost data were within these ranges were selected as being comparable to New Zealand. This resulted in the following jurisdictions being considered as comparable.

¹⁴ This was based on a series of simple regressions of loop rates against each factor. Those factors that produced the highest R^2 were used as comparability criteria in the draft.

Table 2: Comparable Countries

Country	Urban Pop	Teledensity	Pop Density	UCLL rate (NZ\$)
Arizona	88%	40%	17	\$19.41
Colorado	84%	53%	16	\$25.38
Minnesota	70%	37%	22	\$20.59
Oklahoma	61%	39%	19	\$25.75
Oregon	73%	34%	13	\$24.02
Texas	85%	38%	30	\$22.93
Utah	77%	39%	10	\$20.77
Australia	88%	50%	3	\$21.82
Finland	61%	40%	14	\$20.33
Norway	77%	46%	14	\$18.93
Sweden	84%	58%	20	\$16.30

66. The median UCLL rate for the comparable countries in the draft STD was \$20.77 per month. The reason for adopting the median, rather than the 75th percentile, was that such a price will best promote competition in the market, as both Telecom and Access Seekers will face the correct pricing signals in relation to investment.¹⁵
67. The Commission converted overseas UCLL prices into New Zealand currency using a conversion rate that reflected the underlying cost components of the relevant service. Weights were attached to Purchasing Power Parity (PPP) rates and nominal exchange rates to reflect the proportion of total costs that are represented by non-tradable and tradable inputs respectively.
68. In the draft STD, the Commission adopted geographically de-averaged UCLL rates. The Commission noted that Australia, Canada, and the US had adopted a geographically de-averaged structure of UCLL prices, and concluded that a two-band pricing structure would be appropriate for the purposes of an initial pricing determination in New Zealand.
69. The draft STD derived urban and non-urban prices according to the following steps:
- For each comparable country (or jurisdictions) with de-averaged pricing (i.e. Australia and the comparable US states), the extent to which urban rates are below average, and non-urban rates are above-average, is estimated;
 - These estimates (in the form of ratios) are applied to the primary price benchmark (which in the case of the draft STD was \$20.77 per month), to

¹⁵ Draft STD, paragraphs 99-102.

derive benchmarked urban and non-urban loop rates for the UCLL service in New Zealand;

- The resulting urban and non-urban loop rates are scaled to ensure that when weighted by the proportion of lines in urban and non-urban areas, the rates are consistent with the benchmarked average loop rate.
70. The Commission set a draft UCLL rate of \$16.49 per month in urban areas, and \$32.20 per month in non-urban areas.

UCLL Service Transfer Rate

71. For UCLL transfer rates, the draft STD identified 12 EU countries that satisfied the Commission's screening criteria of having forward-looking cost-based connection charges. In the draft STD, the Commission considered all of these countries to be comparable for the purposes of setting a transfer charge, as the cost of this service is primarily driven by labour rates, differences in which can be accounted for through the use of PPP exchange rates.
72. The Commission set a transfer rate of \$83.70 per transfer, based on the median value of the benchmarks. The Commission noted that this rate applied to single transfers, and that it might be appropriate to determine a reduced rate for bulk transfers to reflect costs savings available through economies of scale when multiple connections are transferred.

UCLL Service New Connection Rate

73. The draft STD referred to new connection charges in France and the UK, which were approximately three times the charge that applied for transferring an existing connection. The Commission set a new connection charge of \$250 in the draft STD.

Other Core Charges

74. In the draft STD, the Commission set a number of charges for other core services, including where an existing retail customer is transferred to a UCLL service; MPF relinquishment; and tie cable rental rates.

Sundry Charges

75. The Commission also referred to a number of sundry charges in the draft STD. The Commission discussed the application of a common cost mark-up on the direct costs of providing sundry services, as well as the inclusion of a margin for return on capital and risk. A number of specific transactions charges were also discussed in the draft STD.

PRICE TERMS – SUBMISSIONS ON THE DRAFT STD

Telecom

76. In its initial submission on the draft STD, Telecom argued that the Commission’s approach to benchmarking leads to a biased and inaccurate estimate of a cost-based UCLL service for New Zealand. To address this bias, Telecom proposed using an econometric approach to setting benchmarked prices.
77. Telecom submitted that the Commission’s “peer group” benchmarking contained an inconsistency between UCLL prices and cost drivers, and that if the Commission were to continue with a peer group approach, this inconsistency needs to be addressed.¹⁶ Telecom’s submission included several possible corrections, including assessing US cost drivers and pricing at the level of the large ILEC pricing zones within each state, or alternatively at the ILEC level within each state.
78. Telecom recommended that overseas prices be converted to New Zealand currency using long-run average nominal exchange rates; and that the selection of a benchmarked rate should be based either on the 75th percentile, or if an econometric approach is to be used, a point estimate plus one standard error.
79. Telecom concluded that the appropriate benchmarked UCLL rental price is \$30.31 per month. This was based on the point estimate from Telecom’s econometric benchmarking, plus one standard error of the estimate to allow for what Telecom referred to as the asymmetric effects of regulatory error.
80. According to Telecom, the appropriate benchmark for the UCLL transfer service was \$120.66 per transfer. This was based on the 75th percentile of a peer group benchmark of EU and US transfer charges. Telecom further submitted that no discount should be allowed for bulk transfers, on the grounds that there were no economies of scale to justify such a discount. Telecom argued that it negotiated an average rate with its service companies, and that the negotiated rate had already taken into account bulk transfers. According to Telecom, if any discount is introduced for bulk transfers, a premium should be added to the charge for single transfers.
81. Telecom’s submission included a number of reports by consultants that provided comments on the draft STD. These included submissions by LECG, Pacific Economics Group (PEG), Professor Jerry Hausman, and Charles Rivers Associates (CRA).

LECG

¹⁶ Telecom submitted that the data inconsistency needs to be corrected, irrespective of what approach (peer group or econometric) is taken to benchmarking.

82. LECG¹⁷ reviewed the benchmarking approach undertaken by the Commission in the draft STD, and claimed there were weaknesses with that approach. According to LECG, the Commission's approach excluded relevant information that would otherwise have been used if an econometric approach had been employed. In addition, LECG submitted that the Commission's peer group approach contained an inconsistency between the UCLL prices and cost drivers used for the US states:¹⁸

In the case of the data from the US states, the Commission uses state-wide information for each of the three tests to select states comparable to New Zealand. However, it uses price data from the largest ILECs only in each of those states, and these ILECs in each case do not serve the entire state (as there are other ILECs present). This results in a mis-match of selection and price data. We identify the implications of this mis-match and correct for it.

83. LECG presented information showing that the large ILECs served only 74% of the total population, and noted that the service areas of the large ILECs had significantly higher teledensity and population density when compared to the respective state-wide statistics. For example, the average urbanisation for the large ILECs was 87%, whereas the average urbanisation across all relevant states was only 80%.¹⁹
84. LECG proposed two possible ways in which this mis-match could be addressed under a peer group approach to benchmarking. The first involved selecting the ILEC pricing zones that satisfied the Commission's comparability criteria. To implement this approach, LECG used the Commission's dataset, supplemented with line counts sourced from the FCC, to derive density and urbanisation data at the price zone level. LECG identified seven price zones that were comparable to New Zealand, to which LECG added three of the four non-US countries included in the draft STD. LECG excluded Finland on the basis that it had a number of incumbents, for which LECG were unable to source individual cost driver and pricing data. LECG reported a resulting median benchmark of \$32.37 per month, and a 75th percentile of \$37.25 per month.
85. LECG's second solution to the mis-match issue was to undertake the assessment of comparability at the ILEC level for each state (rather than the ILEC level for each price zone). According to LECG, the resulting set of comparable benchmarks had a median rate of \$26.76 per month, and a 75th percentile of \$30.20.²⁰

¹⁷ LECG "Benchmarking of Unbundled Copper Local Loop Prices", 28 August 2007.

¹⁸ *ibid*, pages 2-3.

¹⁹ Similarly, the average teledensity for the large ILECs was 62%, while the average state value was 42%; the average population density for the large ILECs was 84 persons per km², while the average state-wide value was 37 persons per km².

²⁰ Again LECG exclude Finland.

86. Having reviewed the peer group approach taken in the draft STD, LECG submitted that the use of econometric benchmarking was a more precise and appropriate approach to determining UCLL prices. LECG developed an econometric model, which included the cost drivers of line density, percent lines underground, and percent residential. According to LECG, these variables were selected, having tested for statistically significant relationships between UCLL prices and a wider set of possible operating conditions. As they were unable to source this kind of data from outside the US, LECG only used US data in their econometric analysis.
87. LECG used both a linear and a log-log specification of regression model. Using the exchange rate approach contained in the draft STD, LECG's point estimate for the UCLL service was \$26.69 using the linear model, and \$34.39 using the log model.²¹
88. Having commented on the approach taken to benchmarking UCLL monthly rates, LECG considered the determination of UCLL connection charges. For the MPF transfer charge, LECG provided benchmarked rates from 44 US ILECs, and added these to the EU rates used in the draft STD. LECG noted that the median transfer charge was \$74.83 per transfer,²² compared to the \$83.70 used in the draft STD.
89. LECG also submitted that the Commission had not adequately justified its position with respect to point selection and currency conversion. LECG presented the results of its analysis when foreign currency rates were converted using nominal exchange rates.
90. A second submission by LECG²³ focused on the way in which shared and common costs had been treated by state regulators in the US when deriving prices for unbundled network elements.²⁴ This submission related to Telecom's proposed mark-ups within the context of UCLL sundry charges.
91. LECG identified a range of mark-ups approved by US state regulators, based on an LECG survey of UNE conducted in 2001. This included a range of mark-ups that were specifically loaded onto direct costs in order to account for shared and common costs. The median value of the shared and common cost mark-ups was 14.97%, and the 75th percentile was 17.93%.

²¹ LECG also presented the results from adding one standard error to these point estimates, giving \$27.61 and \$35.88 respectively. LECG further presented their estimates of de-averaged rates. For example, the urban and non-urban point estimates using the linear model are \$22.52 and \$37.93 respectively.

²² Converted using PPP rates, as per the draft STD. If nominal exchange rates are used, the median transfer charge was \$87.92.

²³ LECG "Key Cost Concepts and Methodologies Used to Price Unbundled Network Elements in the United States", 27 August 2007.

²⁴ According to LECG, reliable information was unable to be located with respect to the European countries and Australia.

92. On this basis, Telecom submitted that its initial proposal to use a []TNZRI mark-up on field service inputs and 10% on all other direct inputs in order to provide a contribution to shared and common operational costs should be increased to reflect LECG's benchmarking. Telecom noted that this mark-up was only applied in respect of sundry charges, as the core benchmarked charges would already include such a contribution. Specifically, for sundry charges, Telecom submitted that a mark-up of []TNZRI should be used, which covered what Telecom referred to as shared and common fixed and operational costs.

PEG

93. PEG was commissioned by Telecom to provide a review of the benchmarking approach proposed by LECG, and to evaluate the merits of that approach compared to the benchmarking methodology used by the Commission in the draft STD. PEG also reviewed evidence on the use of econometric benchmarking in utility regulation.
94. PEG submitted that the main challenge in undertaking a peer group benchmarking exercise was in determining the relevant peer group. This would involve identifying the key conditions beyond managerial control that influence prices and costs, and selecting those observations that reflected similar values of those conditions.
95. PEG characterised econometric benchmarking as attempting to formally estimate the relationship between prices or costs and those business conditions beyond the control of management. The resulting benchmark reflected the cost that would be incurred by an "average" firm within the sample, if it operated under the same conditions as those for whom the benchmark was to be established. PEG referred to some of the potential inaccuracies associated with econometric point estimation, such as those that arising when the cost drivers are inappropriately identified. PEG argued that econometric benchmarking will generally be more accurate when it is based on quality data from a large and diverse sample of companies.
96. In evaluating peer group and econometric approaches to benchmarking, PEG submitted that a tradeoff between simplicity and precision was involved. While the more simplistic peer group benchmarking can seem more transparent, PEG suggested that it was also subject to a greater degree of arbitrariness, especially in relation to the selection of comparable jurisdictions. Furthermore, a peer group approach generally does not quantify the uncertainty associated with a benchmarking exercise.
97. In the case of more sophisticated econometric approaches, PEG argued that there was no need to select an appropriate peer group, as these approaches were designed to control for differences among companies:²⁵

²⁵ PEG "Price Benchmarking for Telecom New Zealand", August 2007, page 29.

Econometric methods do not impose any such judgments as the basis for defining peers but rather depend entirely on the quantitative relationships that exist in sample data between the benchmarked variable and independent business conditions.

98. According to PEG, the econometric benchmarking approach proposed by LECG was likely to produce more robust benchmarked prices that better reflected the operating conditions faced by a provider of the UCLL service in New Zealand.
99. By contrast, PEG submitted that the peer group approach in the draft STD was based on an arbitrary restriction of the sample set in order to select a group of “comparable countries”. Changing the range of values for the urbanisation, population density, or teledensity conditions would affect the selection of peer observations, and the associated benchmarked rates. PEG also questioned the sample size used in the bivariate regressions in the draft STD, noting that a relatively small sample size would make it more difficult to identify useful relationships between cost drivers and UCLL prices and costs.
100. PEG referred to the importance of using consistent data for peer group benchmarking, as such benchmarks are tied directly to the underlying data. A wide range of factors may need to be accounted for when identifying peer countries such as differences between jurisdictions in the allowed returns on equity, differences in taxes, and differences in the way in which costs are allocated. PEG considered that the Commission’s approach would be more sensitive to data anomalies that could distort benchmark comparisons, and that these anomalies would be more likely when data are used for multiple countries.
101. PEG summarised its view as follows:²⁶

Based on the information we have been presented, PEG concludes that LECG’s current econometric benchmarking model is more likely to generate reasonable price benchmarks than the Commission’s peer group approach, and we recommend that the Commission adopt this approach for benchmarking prices of UCLL services.

Professor Hausman

102. Professor Hausman provided a submission on behalf of Telecom,²⁷ in which he analysed the benchmarking approach taken by the Commission in the draft STD. According to Professor Hausman, the Commission used incorrect econometric procedures to identify cost drivers in the draft STD, which produced biased results. In undertaking a series of bivariate analyses of the relationship between loop rates and possible cost drivers, the Commission’s approach suffered from the “omitted variable” problem and consequently produced biased results. Having identified cost drivers on this basis, the Commission then assigned what Professor

²⁶ *ibid*, page 31.

²⁷ Jerry Hausman “Analysis of the Commission’s Benchmarking Approach”, 23 August 2007.

Hausman referred to as arbitrary ranges around each variable, and used those ranges to assess the comparability of overseas jurisdictions.

103. In addition, Professor Hausman submitted that the requirement to set forward-looking cost-based rates has not been satisfied by the draft STD, as the underlying data on which the Commission based its benchmarking took no account of the increase in copper prices.
104. Having reviewed the Commission's approach, Professor Hausman then used an econometric approach to generate a UCLL rate for New Zealand. He did this by estimating the relationship between UCLL prices and the three cost drivers identified in the Commission's draft STD, namely urbanisation, population density, and teledensity.²⁸ He initially used only the 46 US states from the Commission's database in the draft STD,²⁹ and produced a point estimate of \$23.61. He then expanded the database to include the four non-US countries that were identified in the draft STD as being comparable to New Zealand (Australia, Finland, Norway and Sweden). The resulting estimated UCLL rate for New Zealand was \$22.31.
105. As a result, Professor Hausman concluded that the UCLL rate in the draft STD contained a significant downward bias.
106. Professor Hausman argued that the rates used by the Commission were not forward-looking:³⁰

One of the most significant costs of a local loop is the copper used in the local loop that connects the switch and residence. Between 2001 and 2007 the price of copper increased by approximately 343%.

107. Professor Hausman referred to a California Public Utilities Commission (CPUC) decision in 2006, in which unbundled local loop rates were set for Verizon. According to Professor Hausman, the CPUC used 2003 data to set an average rate of US\$13.96. Professor Hausman argued that given the increase in copper prices between 2003 and 2006, and given that copper cable accounted for approximately 12% of total loop costs, the 2006 loop rates should have been increased by 41%³¹ in order to take into account the copper price increases since the underlying data was produced. This produced an estimated loop rate of US\$19.69, rather than the regulated rate of US\$13.96.

²⁸ Specifically, he used a log model of these variables. In addition, he noted that while he was using the Commission's dataset, an adjustment needed to be made to ensure the UCLL rates were forward-looking (which he subsequently addressed). He also noted the apparent 'mis-match' issue raised by LECG.

²⁹ According to paragraph 15 of his submission, Professor Hausman claimed to have used 46 US observations. However, the results in his Table 1 indicate that 51 observations were used. Similarly, in his paragraph 16, he claims to have added four non-US countries, implying 50 observations, although the results in his Table 2 indicate that 55 observations were used.

³⁰ *ibid*, page 10.

³¹ This adjustment appears to have been derived by applying the factor by which copper prices increased (4.4) to the 12% copper contribution to total loop costs.

108. He concluded that the sample of ‘cost-based’ UCLL prices used in the draft STD did not take account of the increase in copper prices in recent years, and that instead, regulators in the US at least continued to reduce UCLL prices over this period in a failed attempt to encourage more competitive entry.
109. Professor Hausman recommended that the Commission take the average of his two econometric estimates for New Zealand (\$23.61 and \$22.31), and apply a 42.8% adjustment factor using copper prices as of June 2007. This produced an estimated UCLL rate for New Zealand of \$32.78.

CRA

110. CRA supplied a submission and presentation at the UCLL Conference on behalf of Telecom,³² which argued that rather than selecting the median figure, the Commission should have based the benchmark price for access to the UCLL on the 75th percentile figure from the sample of comparators.
111. CRA considered that in adopting the median price in the benchmarking analysis, the Commission had set the price point for UCLL access too low. CRA claimed that this indicated that the Commission was more interested in promoting competitive entry and static efficiency, instead of dynamic efficiency and the long-term benefit of end users.
112. CRA used the following definition of dynamic efficiency in its submission:³³
- Dynamically efficient states of the world are those in which the incentives for decision-making are such as to maximise the present value of social welfare over time, subject to the overall constraints provided by the resources of the economy. A dynamically efficient economy maximises long-run social welfare by providing for the fastest possible introduction of new services and new technologies and aggregate economic growth in the economy.
113. CRA maintained that where price is above cost, static efficiency promotes a price decrease, but under dynamic efficiency such a response is incorrect. It argued that an incumbent or entrant would not invest in new technologies (e.g. optical fibre) or services if they believed profits were constrained to the competitive market level.
114. CRA’s submission postulated that access pricing regulation could result in a static and dynamic efficiency trade off, stating that:³⁴

³² See the submission, Charles Rivers Associates (CRA, N. Quigley), “Selecting the Price Point for the UCLL Initial Determination”, 29 August 2007, and the UCLL Conference presentation, CRA (J. Mellsoy), “Selecting the Price Point for the Unbundled Copper Local Loop”, 19 September 2007.

³³ CRA, “Selecting the Price Point for the UCLL Initial Determination”, 29 August 2007, p 3.

³⁴ *ibid*, p 4.

The literature in economics recognises that there is a trade-off between static and dynamic efficiency (for example Evans, Quigley and Zhang 2003). In the context of regulation, the trade-off is based on the problem that confronts regulators where they are tempted to drive retail or intermediate prices towards short-term marginal costs but in doing so undermine incentives for future investments by the firms.

115. According to CRA the Commission over-emphasised the importance of competitor investment through access to the UCLL. CRA considered that a competitive entrant resells Telecom loops,³⁵ and provides little in the way of service differentiation, leaving end users encountering the same restrictions that always existed on broadband speeds.³⁶
116. CRA claimed that the reasoning of the Commission represented an unjustified departure from previous decisions. It claimed that the Commission had in the past made statements suggesting they would place more weight on dynamic efficiency, and in accordance with this had employed the 75th percentile in its benchmarking analysis.
117. CRA submitted that continued investment by Telecom, as the incumbent and owner of the local loop, had an important bearing on dynamic efficiency. This should have been a major consideration in the Commission's analysis on the appropriate pricing point.
118. CRA disagreed with the Commission's analysis on the potential for socially wasteful duplication and inefficient bypass from a higher access price. CRA claimed that a higher access price would promote greater incentives for future investment in the network by the incumbent (e.g. a fibre roll out) and was more likely to create incentives for competitors to invest in alternative access platforms (e.g. wireless and cable). Such investments CRA maintained provided greater long-term benefits to end users.
119. To reinforce why the 75th percentile was appropriate for benchmarking analysis, CRA also outlined the asymmetric outcomes to society of under-investment if price was set to low, the need to compensate the access provider for its real option to wait, and the truncation of returns to the access provider through regulation.

TelstraClear

120. TelstraClear supported the benchmarking approach taken by the Commission in the draft STD, as being both pragmatic and consistent with the IPP in the Act. According to TelstraClear, the UCLL service was an established and well-understood service in many countries, and there was no evidence to suggest that Telecom's costs would be materially different than in other jurisdictions. As a result, benchmarking was likely to provide a reasonable proxy for Telecom's costs.

³⁵ Ibid, p 7.

³⁶ Ibid, Table 1: Summary of the Implications of a Low Access Price and a High Access Price, p 16

121. TelstraClear supported the use of the median benchmark for the price point, on the basis that this represented an appropriate balance, and in this case was more likely to satisfy the section 18 purpose of the Act.
122. TelstraClear disagreed with Telecom's proposal to add a margin for a return on capital and risk on the basis that such a margin was already likely to be built into the overseas rates against which the Commission was benchmarking.
123. Finally, TelstraClear supported the Commission view that if Telecom charged an additional project management fee in respect of bulk transfers, there must also be a reduced bulk transfer connection charge to reflect economies of scale:³⁷

In fact, regardless of the existence of any project management charge we consider that a bulk transfer discount should apply.

Vodafone/ihug

124. Vodafone/ihug submitted that the Commission's benchmarking approach in the draft STD contained some judgments that appeared to have a degree of arbitrariness. Vodafone/ihug did not however consider it worthwhile to reconsider the Commission's entire approach. Instead, Vodafone/ihug submitted that the Commission should refine the approach it took with respect to de-averaging, and in particular, should consider more local data.
125. Vodafone/ihug's main concern was with the Commission's omission of low "Zone 1" rates, such as the central business district (CBD) rate for Australia. Rather than disregard these rates, the Commission should have looked for a better methodology that placed some weight on these rates.
126. Vodafone/ihug made a number of other price-related comments on the draft STD, specifically that Access Seekers should not be required to contribute to Telecom's common costs (and hence the common cost mark-up should be removed); the new connection charge of \$250 per connection was excessive, as was the transfer charge of \$83.70 per transfer; no additional charge should apply for bulk transfers, unless a bulk transfer discount was available; and price updates should not rely only on the Labour Cost Index.

Orcon/Kordia/CallPlus

127. Orcon/Kordia/CallPlus were generally supportive of the benchmarking approach taken in the draft STD.

³⁷ TelstraClear submission, 29 August 2007, paragraph 36.

128. Orcon/Kordia/CallPlus agreed with the Commission's view that the connection charge for bulk transfers should be lower than the charge for single transfers, to reflect scale economies.
129. Where the main input for a service was labour — for example the transfer/connection services — Orcon/Kordia/CallPlus expressed some concern that the use of PPP exchange rates may not be sufficient, and that actual labour rates should be used.

Vector

130. Vector submitted that the Commission's decision to set de-averaged UCLL rates was unlikely to give best effect to the section 18 purpose of the Act. Vector considered that de-averaged rates were likely to delay investment in alternative infrastructure such as fibre, and lead to undue reliance on the copper-based access network. According to Vector, a reduction in the UCLL rate from an average of \$20.77 per month to an urban rate of \$16.47 per month would have a significant impact on the extent of any new technology deployment.
131. Vector also submitted that the 75th percentile was a more appropriate point to select than the median, given the asymmetric consequences of setting a price too low. Further, the Commission had overstated the problem of inefficient investment in alternative access infrastructure from an above cost price. Vector considered that such investment in inter-platform competition was likely to promote increased competition and provide long-term benefit to New Zealand.

Other parties

132. TUANZ supported the benchmarking approach in the draft STD:³⁸
- ...we support the Commission's careful selection and comparison of potential benchmarks in order to develop a robust argument for its selection of particular price points. In essence, any price point could be said to be "arbitrary", but TUANZ considers that the Commission's proposal is fully defensible in terms of the laws under which the Determination must be made.
133. In terms of de-averaging, TUANZ argued that the issue of subsidies to rural broadband users should be addressed in a transparent manner within the context of the review of rural services and the TSO.
134. Similarly, InternetNZ supported the concept of de-averaged pricing, as this would lead to greater investment by Access Seekers in urban areas than a uniform national price, without having a significant impact on investment in non-urban areas. InternetNZ qualified its support for de-averaged pricing on the condition that a package of other measures was adopted to improve investment in more remote areas.

³⁸ TUANZ submission, 28 August 2007.

135. Both Rural Women New Zealand (RWNZ) and the Selwyn Central Community Board expressed concern around the de-averaged prices contained in the draft STD, arguing that rural users would be significantly disadvantaged.

PRICE TERMS - UCLL MONTHLY RENTAL RATES

Benchmarking approach

136. A major theme in submissions on the draft STD related to the approach taken to benchmarking UCLL rates, and in particular whether an econometric approach or a “peer group” approach should be employed.
137. The Commission accepts that an econometric approach sits within its discretion but is of the view that the plain meaning of the IPP leads to a preference for the peer group approach.
138. At the Commission’s UCLL conference, there was general agreement among the parties that both the peer group and the econometric benchmarking were useful approaches, and that regardless of which approach is adopted, it would be valid to use the other approach as a cross-check.³⁹
139. In light of these submissions, the Commission has reviewed the applicable benchmarking approach taken in the draft STD.
140. In terms of identifying countries which provide similar services according to a forward-looking cost-based pricing method, the Commission has followed the same approach that it took in the draft STD. As noted earlier, this produces an initial list of countries (or jurisdictions), which in the case of the UCLL service included 13 European countries, Australia, and Canada, as well as 51 states in the US where unbundled loop rates are set by state regulators.
141. The general approach adopted by the Commission to applying the IPP to the monthly rental price for the UCLL Service is to:
- (a) identify countries in which similar services were provided;
 - (b) eliminate those countries that did not use a forward-looking cost-based pricing method (FLCB);
 - (c) select comparability criteria to identify comparable countries within the group which used FLCB (and provided similar services); and
 - (d) apply benchmarking to that group of comparable countries.
142. In order to establish a benchmarked UCLL rate for the purposes of this determination, the Commission has followed a peer group approach, and has undertaken econometric benchmarking as a cross-check on the resulting rate.

³⁹ Conference transcript, 19 September 2007, page 24.

Data inconsistency

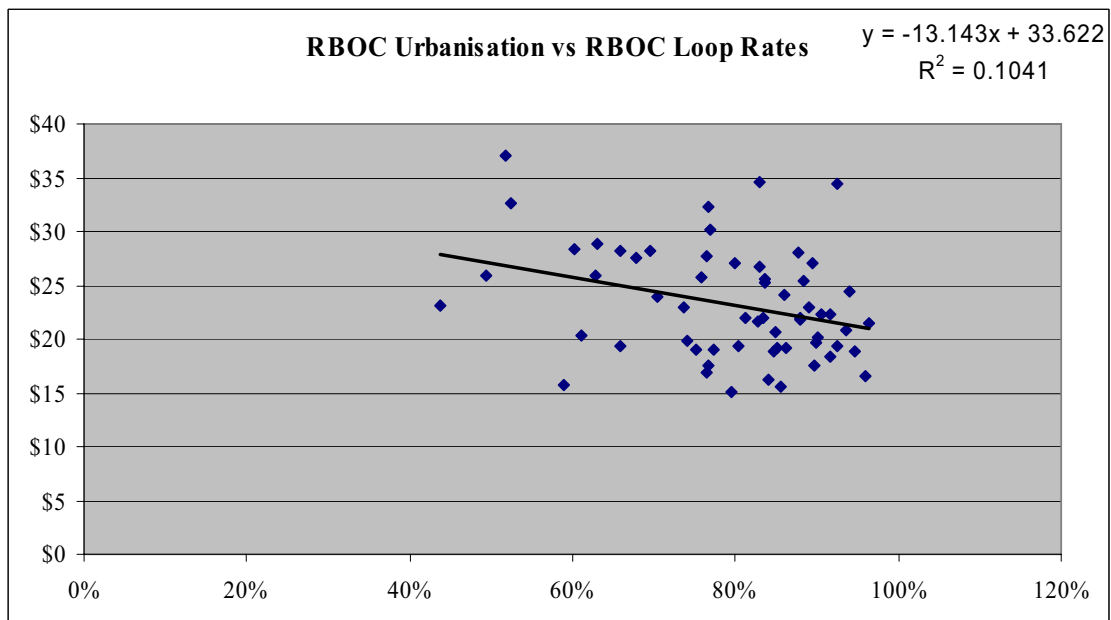
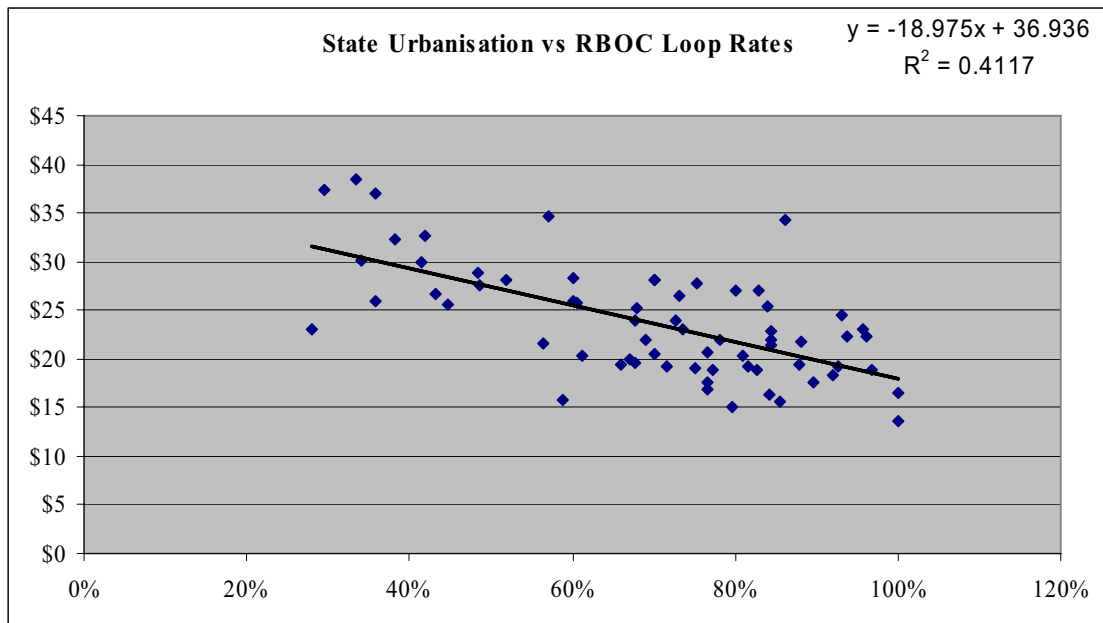
143. The Commission has made a correction to the dataset used in its benchmarking, which is discussed in the following sections. In addition, the Commission has revised the way in which cost drivers are identified, and has also given consideration to an econometric benchmarking approach.
144. LECG's submission on the Commission's benchmarking included a criticism relating to the data used in the draft STD. LECG submitted that in the draft STD, the Commission used state-wide US data to identify comparable states, but then used pricing data that is only applicable to the largest ILECs in each of the comparable states. However, the large ILECs do not serve the entire state, and typically serve relatively densely populated urban areas. As a result, LECG submit that the pricing data used by the Commission will not reflect the state-wide operating conditions against which the Commission assessed comparability.
145. The Commission has accepted that there is some mis-match between the comparability data used in the draft STD with respect to the US states, and the pricing data. As indicated in LECG's submission, this can be seen by reference to information on cost drivers and pricing contained in the appendices to the draft STD.
146. For example, the total population of the state of Arizona is 5.94 million, of whom 88% live in urban areas. The state has a population density of 17 persons per km², and a teledensity of 40% (lines per capita). As a result, Arizona state fulfills the comparability criteria set out in the draft STD.
147. Having identified Arizona as a jurisdiction that is sufficiently comparable to New Zealand, the draft STD listed the UCLL rate that applies to Qwest in Arizona, which is NZ\$19.41 per month. However, in Arizona, Qwest does not cover the entire state. Qwest covers approximately 78% of the state's population (4.65 million out of a total of 5.94 million), and of the population within Qwest's coverage, around 93% is located in urban areas, compared to 88% for the state as a whole.

Country	Population (mill)	Urban Pop	Teledensity (lines per capita)	Pop Density (persons/km ²)	Comparable to NZ?
Arizona State	5.94	88%	40%	17	yes
Qwest Arizona	4.65	93%	58%	64	no

148. A similar pattern emerges in other states, with the large Incumbent Local Exchange Carriers/Regional Bell Operating Companies (ILECs/RBOCs) tending to serve more urbanised, densely populated areas. On average, around 87% of the population served by the large ILECs in the US are in urban areas, compared to 80% of the total population. This can also be seen from Figure 1, which contains

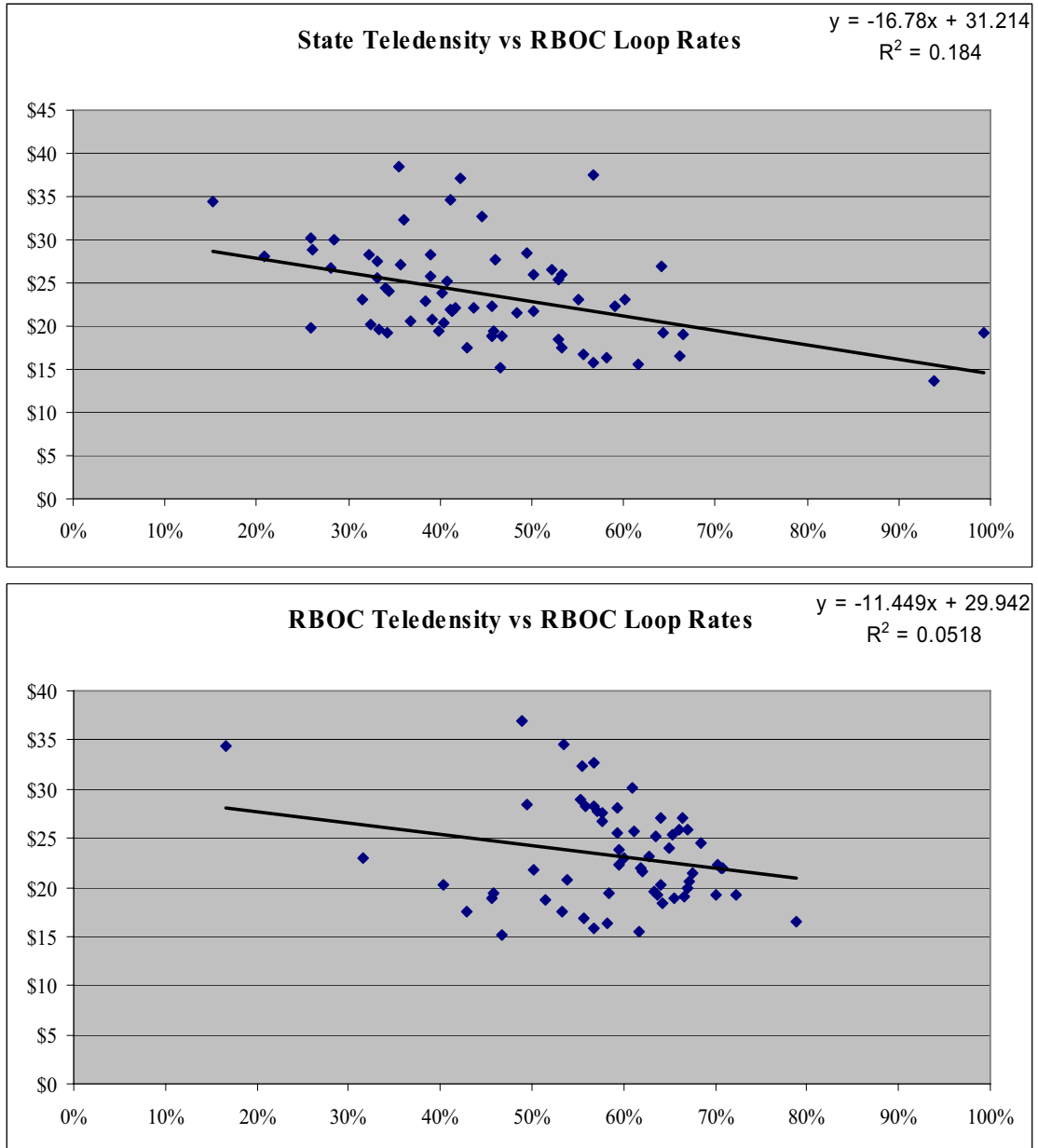
two plots of urbanisation against loop rates, the first using urbanisation at the state level for the US, and the second using urbanisation at the RBOC level. The distribution of the latter tends to revolve around higher levels of urbanisation, which is consistent with the claim that RBOCs tend to serve areas with a higher proportion of urban populations.

Figure 1: State-level and RBOC-level Urbanisation



149. A similar relationship is evident for the other cost drivers used in the draft STD. For teledensity, the average US RBOC value is 62%, whereas the overall average for the US is 42%. This is shown in Figure 2, where the RBOC distribution is at relatively high teledensities. Similarly, for population density, the RBOC average is 84 persons per km², while the state average is 37.

Figure 2: State-level and RBOC-level Teledensity



150. At the Commission's UCLL conference, Dr John Small⁴⁰ acknowledged that the inconsistency issue raised by LECG was a valid issue, and that some correction would be required.⁴¹
151. In summary, the issue identified by LECG was that there was a mis-match between the comparability criteria used in the draft STD (the US values of which are measured at a state level), and the pricing data (RBOC level). As the comparability criteria were meant to reflect the key drivers of local loop costs, the RBOC prices would be too low.

Commission's correction to dataset

152. The Commission has considered a number of possible approaches to ensure that the comparability variables and the loop prices are measured on a consistent basis.
153. One possible approach would be to maintain the comparability assessment at the state level, but instead of using RBOC loop rates, state-wide loop rate estimates could be used. In this case, both comparability and loop prices would be measured at the state level.
154. However, the difficulty with such an approach is that it requires the estimation of a loop rate that is applicable to the entire state. The Commission has gathered information on the total number of lines in each state, including a break-down between the main RBOC and the smaller carriers in each case. The Commission also has the regulated loop rates that have applied to the RBOC in each state. However, in order to derive a state-wide loop rate, a cost-based rate would be required for the non-RBOC carriers in each state. As these carriers are often not subject to mandatory unbundling requirements, no such information is available.
155. An alternative approach is to measure comparability and loop prices at the RBOC level, which involves the use of cost driver values pertaining to the RBOC in each state (rather than the state as a whole), and the corresponding RBOC loop rates.⁴² A highly significant advantage of this RBOC-level approach is that it is based on actual US data pertaining to comparability, and actual data on loop rates, whereas the state-level approach discussed above requires an assumption to be made regarding non-RBOC costs in the US.
156. Accordingly, the Commission has adopted the approach outlined in the preceding paragraph in response to submissions from LECG. The Commission has used the RBOC data that was presented in Appendix F of the draft STD, which included

⁴⁰ Dr Small was representing Kordia/Orcon.

⁴¹ Conference transcript, 19 September 2007, pages 14-15.

⁴² A further alternative suggested by LECG would be to measure comparability and rates at the pricing zone level for each RBOC in each state. Such an approach increases the numerical weight of US observations; and results in a significant increase in the median rate (according to the LECG results) which appears to be disproportionate to the magnitude of the issue raised by LECG (especially given the large line share of the RBOCs).

population served, area served, and urbanisation rates. The Commission has also used the number of RBOC lines in each state.⁴³ This results in a different set of comparable US observations from those contained in the draft STD. The corresponding loop rates better reflect the conditions that were used for comparability purposes, therefore correcting the inconsistency identified by LECG.

Identifying relevant cost drivers

157. A number of the submissions from Telecom⁴⁴ were critical of the way in which cost drivers were identified in the draft STD, where a number of bi-variate regression analyses were performed between UCLL rates and each expected cost driver.
158. In light of those submissions, the Commission has undertaken an econometric approach that seeks to identify the underlying cost drivers of providing the UCLL service, and to explain the differences between operating conditions across different UCLL access providers in different jurisdictions.
159. Based on the corrected data set,⁴⁵ the Commission has adopted a general-to-specific approach, which starts from a comprehensive model that includes all the variables that are expected to be relevant, and which then is simplified by dropping insignificant variables in a step-wise manner.
160. The potential cost drivers considered for the model included the following:
- **Scale and Density.** As the supply of the UCLL service is expected to exhibit strong economies of density and scale, the number of main lines, degree of urbanisation, teledensity, and population density are included in the general model.
 - **Labour cost.** As labour is an important component in the construction of telecommunication access networks, the UCLL rate is expected to be positively related to labour costs.
 - **US Dummy.** A US dummy is used in the model to capture differences between the US and non-US jurisdictions, as UCLL rates in the US appear to be consistently higher than the non-US observations. These differences do not appear to be explained by the costs drivers used in the model.
161. The resulting initial model specification is as follows:

⁴³ As reported in Billy Jack Gregg's survey of UNE rates, and confirmed by the FCC's "Universal Service Monitoring Report".

⁴⁴ For example, the submission by Professor Hausman.

⁴⁵ As discussed above, the US observations of price and cost drivers are measured on a consistent basis at the RBOC level. The data from the non-US jurisdictions are unchanged.

$$\begin{aligned} \log(LLURate) = & \alpha + \beta_1 \log(urban_pop) + \beta_2 \log(main_lines) + \beta_3 \log(tele_density) \\ & + \beta_4 \log(population_density) + \beta_5 \log(labour_cost) \\ & + \beta_6 \log(GDP_Per_Capita) + \beta_7 US_Dummy \end{aligned}$$

162. The Commission found that the coefficient for the labour cost variable was always negative, which was counterintuitive and indicated that the labour cost variable captured other effects. As a result, the labour cost variable was dropped. GDP per capita was insignificant, and this variable was also dropped.
163. The results of the most robust model specification are shown in Table 3.⁴⁶

Table 3: Relevant Cost Drivers

	Coef.	P>t
ln(popdensity)	-0.08***	0.00
ln(teledensity)	-0.26***	0.01
ln(urbanisation)	-0.32***	0.00
US dummy	0.29***	0.00
Constant	3.00***	0.00
Adjusted R squared	0.6180	
Note:	*** significant at 1%	

164. The Commission has therefore identified population density, teledensity, and urbanisation as being the relevant cost drivers for the UCLL service. These are the same variables that were used in the draft STD.

Peer Group Benchmarking Results

165. In order to identify comparable benchmarked jurisdictions, the Commission has used the same restrictions that were used in the draft STD. These are summarised in Table 4, along with the jurisdictions that satisfy those comparability criteria.

⁴⁶ No multicollinearity was found among the variables. The Breusch-Pagan/Cook-Weisberg test for heteroskedasticity did not reject the null hypothesis that there was no heteroskedasticity. The model also satisfied the Ramsey RESET test in respect of omitted variables, as well as the Davidson J test and Cox-Pesaran test regarding model specification.

Table 4: Benchmark sample of comparable countries

Country	Urban Pop	Teledensity	Pop Density	UCLL rate (NZ\$)
Idaho	77%	54%	19	\$32.36
Kansas	83%	52%	29	\$21.66
Nebraska	88%	41%	22	\$28.04
New Mexico	83%	54%	20	\$34.62
North Dakota	83%	43%	19	\$26.76
South Dakota	77%	46%	13	\$30.17
Australia	88%	50%	3	\$21.82
Finland	61%	40%	14	\$20.33
Norway	77%	46%	14	\$18.93
Sweden	84%	58%	20	\$16.30
New Zealand range used in draft STD	86% X>60%	43% 20%<X<60%	15 X<30	

166. The benchmarked UCLL rates for the comparable countries have been converted to New Zealand dollars using an average of nominal exchange rates and PPP rates.⁴⁷
167. Table 4 contains a number of benchmarks that were identified by LECG as being comparable to New Zealand when RBOC data is used.⁴⁸ However, a number of additional benchmarks are included, including Kansas, South Dakota, and Finland. According to LECG's results, the RBOCs that serve Kansas and South Dakota had teledensities slightly above the 60% boundary used by the Commission — 62% and 61% respectively. However, the line count information used by the Commission indicates fewer lines in both cases, such that their teledensities now lie within the range.
168. LECG omitted Finland on the basis that Finland had multiple ILECs and LECG were not able to source selection and pricing data for individual ILECs. However, according to the European Commission, the weighted average loop rate in Finland across the 39 Finnish operators providing unbundled loops is €11.23,⁴⁹ which is NZ\$20.33. Finland is therefore included in the sample of comparable countries.⁵⁰

⁴⁷ As discussed later, the Commission considers that such a blended rate is appropriate, where the weights applied to the nominal exchange rate and the PPP rate reflects the capital and labour proportions of the cost of the service.

⁴⁸ See LECG, Table 9.

⁴⁹ See European Commission, European Electronic Communications Regulation and Markets 2006 (12th Report), Annex Figure 75 and footnotes.

⁵⁰ LECG acknowledged at the Commission conference that it would be appropriate to retain Finland, as long as the rate used is a weighted average across the individual Finnish ILECs. See Conference transcript, 19 September 2007, page 31

169. The median rate of the comparable US RBOCs and non-US countries listed above is \$24.29 per month.⁵¹

Econometric Benchmarking

170. The Commission has considered the econometric approaches proposed by LECG and Professor Hausman, and is not satisfied that these approaches are appropriate for the current determination.
171. LECG's econometric approach was based on a model of UCLL rates against three cost drivers — line density, percent underground, and percent residential. According to LECG, these variables were selected after testing for statistically significant relationships.
172. However, LECG submitted that it was unable to find data on these cost drivers in non-US jurisdictions. As a result, the LECG regression analysis was limited only to US-based data, specifically at the level of price zones within each US state.
173. The main concern that the Commission has with the LECG analysis is that it is restricted only to US data, and ignores all of the non-US jurisdictions. As noted elsewhere in this determination, UCLL rates in the US tend to be significantly higher than those in non-US countries, and by excluding all non-US observations, the LECG results are likely to be artificially inflated.⁵²
174. As identified by LECG, the use of only US data was largely a result of data limitations. While in the case of the LECG analysis there may be a tradeoff between the strength of the explanatory power of the independent cost drivers, and the availability of data on those costs drivers, the Commission considers that the resulting omission of a significant number of non-US jurisdictions weakens the LECG results, as they do not give as complete a picture of comparable prices overseas.
175. As noted by PEG, it is desirable for an econometric approach to be based on data that reflects diverse operating conditions. However, a concentration only on US data may restrict this type of diversity, and hence the accuracy of the resulting estimates. For example, Professor Hausman noted that the RBOCs in the US shared a common heritage. Further, any interdependency between regulators in the US (either through the FCC, or between state regulators) may reduce the diversity in the US UCLL rates. The Commission considers that the greater diversity of operating conditions when non-US jurisdictions are included will produce more robust econometric results.

⁵¹ The 75th percentile rate is \$29.63 per month. However, as discussed in Price Point Selection subsection, the Commission considers that it is appropriate to take the median benchmark value in this case.

⁵² This can to some extent be seen from Professor Hausman's results, where his point estimate based on US-only data (\$23.61) is higher than his point estimate when a small number of non-US observations are included (\$22.31).

176. Dr John Small noted that the relationship between UCLL rates and LECG's 'percent underground' cost driver may be problematic.⁵³ On one hand, a greater proportion of underground lines would be expected to increase the capital cost of deploying a local loop network, and hence increase UCLL rates. However, the operating costs associated with underground lines is expected to be lower, as such lines are protected from adverse climatic conditions.
177. The net effect of the underground proportion on UCLL rates may therefore be unclear. Dr Small also noted that this variable is not found to be statistically significant in LECG's linear model.⁵⁴
178. The Commission also notes that the LECG dataset appears to include line count information from an unnamed FCC source. This data differs from the line counts used by the Commission, which are sourced from the FCC's Universal Service Monitoring Report.⁵⁵ The Commission considers that this information is appropriate, as it is also contained in the survey⁵⁶ of UCLL rates in the US that are used by the Commission, and is more consistent with the US rates being benchmarked.
179. The Commission has also considered the submission by Professor Hausman, in which he criticised the benchmarking approach in the draft STD, on the basis that it produced a UCLL price that was biased downwards. He submitted that a more robust econometric approach produced a benchmarked UCLL rate that was higher than that contained in the draft STD, and that a further upward adjustment was required to account for the recent increases in copper cable costs.
180. The Commission has a number of concerns with the specific approach suggested by Professor Hausman.
181. The first concern relates to the sample set of observations used in Professor Hausman's econometric model. As noted earlier, he initially used only the 46 US states that were part of the Commission's database. He then added four non-US jurisdictions, on the basis that these countries were found to be comparable to New Zealand in the draft STD. This resulted in his UCLL estimate for New Zealand declining from \$23.61 per month to \$22.31 per month.
182. The Commission considers that Professor Hausman has used an inappropriate database for the purpose of undertaking an econometric benchmarking exercise. The purpose of an econometric approach is to estimate the relationship between UCLL rates and various independent variables that are expected to influence the

⁵³ Covec "Benchmarking UCLL Prices", September 2007, pages 5-6.

⁵⁴ *ibid*, page 6.

⁵⁵ FCC "Universal Service Monitoring Report" CC Docket No: 98-202, 2006, Table 3.34.

⁵⁶ Billy Jack Gregg "Unbundled Network Element Rate Comparison Matrix", updated March 2006.

cost of a UCLL service.⁵⁷ The data set used to estimate this relationship should therefore not be restricted only to those observations that are considered to be “comparable” to New Zealand.

183. A second concern relates to Professor Hausman’s criticism that the the UCLL rates used in the draft STD are not forward-looking, as they do not reflect this increase in copper prices in recent years. To adequately account for this, Professor Hausman proposed a mark-up on the UCLL rates he econometrically estimated.
184. The Commission considers that the type of adjustment proposed by Professor Hausman moves away from the benchmarking nature of the IPP. Instead, Professor Hausman’s approach appears to be more aligned with the FPP. While an initial price should ideally be as close as possible to the price that would be determined under a pricing review, the Commission notes that Professor Hausman has only focused on changes in the price of one input into the UCLL service,⁵⁸ and that a pricing review would involve a more comprehensive and in-depth analysis of all cost components that are relevant to the service.
185. While the Commission has revised its approach to the identification of cost drivers and the use of econometric benchmarking, the Commission does not consider that the approach taken by LECG or Professor Hausman, either in respect of the econometric model, or the adjustments proposed to the results of that modeling, are appropriate for the purposes of determining a UCLL price as part of this determination.

Commission’s Econometric Cross-check of Benchmarking Results

186. The Commission has used the econometric model summarised earlier in paragraph 161 as a cross-check on the results of the peer group benchmarking. The Commission has used its econometric model to derive a point estimate of a UCLL rate, given New Zealand’s rates of population density, teledensity, and urbanisation. The results of this approach are summarised in Table 5.

Table 5: Predicted New Zealand UCLL Rates

Dummy value	Predicted Median Price (NZ\$)
NZ as a US state (1)	28.34
NZ as a Non-US (0)	21.13

⁵⁷ See Pacific Economics Group “Price Benchmarking for Telecom New Zealand”, August 2007, page 7. PEG note that “Econometric benchmarking specifies a mathematical function that is designed to capture the relationship between the activity variable and the business conditions beyond managerial control.”

⁵⁸ With that input accounting for an estimated 12% of total UCLL costs.

187. The expected New Zealand UCLL rate ranges from \$21.13 where the US dummy is set to 0 (i.e. New Zealand is considered to be more similar to the non-US jurisdictions, where ‘similarity’ is based on factors other than the cost drivers used in the regression) and \$28.34 where the US dummy is set to 1 (i.e. New Zealand is considered to be more like the US).
188. The range of results in Table 5 is due to UCLL rates in the US being relatively high, at given levels of the various cost drivers in the model. In the absence of evidence relating to an appropriate value for the US dummy variable, and given that the econometric results are being used as a cross-check, the Commission considers that the use of the midpoint is appropriate. The midpoint of the range in Table 5 produces a UCLL point estimate of \$24.74 per month.

Summary of Results

189. The benchmarking undertaken for the purposes of this STD is based on a consistent data set, with cost-based UCLL rates that correspond to the cost drivers in each jurisdiction.
190. Adopting the ‘peer group’ approach, the median rate for the comparable jurisdictions is \$24.29 per month.
191. Under the econometric cross-check, the equivalent midpoint estimate is \$24.74 per month.
192. The Commission has applied the IPP by using the peer group approach, in which comparable jurisdictions are explicitly identified. The Commission notes that the result of the peer group benchmarking undertaken as part of this determination is within the range of econometric benchmarks produced by the Commission’s model, and lies close to the midpoint value of that range.

Price Point Selection

193. There were a number of comments made in submissions about the price point selection by the Commission. These related to the Commission’s draft decision to adopt a median price in its benchmarking analysis rather than the 75th percentile.
194. TelstraClear supported the Commission’s draft decision to use a median price. While TelstraClear noted the selection of the median differed from previous approaches — i.e. the 75th percentile chosen for interconnection cost and the 25th percentile chosen for wholesale discounts — in this instance it represented an appropriate balance that was more likely to achieve the Section 18 purpose of the Act to promote competition to the long-term benefit of end-users.

195. TelstraClear considered that any concerns about the impact of setting an incorrect initial benchmark were allayed by the final price overlaying any initial price set.
196. Both Vector and Telecom disagreed with the Commission's draft STD, arguing that the 75th percentile figure should be adopted initially for pricing access to the UCLL.
197. Vector submitted that the 75th percentile figure was appropriate on the basis that:
- The 75th percentile recognised there were likely to be asymmetric outcomes to society from setting access prices too low, rather than too high;
 - The Commission's draft decision to use a median price appeared to focus solely on the promotion of competition and benefits to end-users downstream;
 - The Commission overstated concerns about inefficient investment in alternative access infrastructure from above cost pricing. Such investment in inter-platform competition was likely to provide long-term benefits to New Zealand; and
 - The Commission's draft decision did not appear to take into account the need for ongoing incentives to invest in new technologies such as optical fibre, and access prices that are set too low are likely to stimulate under-investment in such technologies.
198. The submission and presentation at the UCLL Conference by CRA on behalf of Telecom, argued that the median access price for the UCLL was likely to be too low on the basis that:
- The Commission placed too much weight on the need to promote competitive entry and static efficiency through Access Seeker's resale of the local loop, whilst ignoring dynamic efficiency and the long-term benefit of end-users;
 - The Commission had gone against previous decisions, as these emphasised the importance of dynamic efficiency over static efficiency, and in accordance with this adopted the 75th percentile;
 - The Commission incorrectly assessed that an above-cost access price was likely to create incentives for socially wasteful duplication of the local loop and inefficient investment in bypass technologies. CRA considered that duplication of the local loop was unlikely due to its significant sunk costs, whilst encouraging bypass and inter-platform competition would enhance dynamic efficiency and deliver greater long-term benefits to end users; and
 - The Commission has not considered that the incumbent's ongoing investment in the network was likely to be a key determinant of dynamic efficiency. For

greater incentives to invest in the network (for example, optical fibre technology) and to ensure quality was maintained in the future, CRA claimed that the incumbent requires an above cost access price. Further, CRA noted that such a price recognised the asymmetric outcomes to society from setting price too low, and that the access provider should be compensated on its investment for the loss of its real option to wait and the truncation of its returns through regulation.

199. The Commission addresses and responds to the concerns raised by Telecom and Vector in the analysis in the following subsections. In particular, the Commission focuses on the implications for dynamic efficiency and the impact that the level of the access price for the UCLL is likely to have on investment by competitors in the incumbent's network; investment in alternative infrastructure networks; and by the incumbent in its own network.

Dynamic Efficiency

200. In order to promote long-term benefits to end users, a key concern of access regimes has been the impact that such regulation has on the efficient use of, and investment in, essential infrastructure. The three types of efficiency that access regimes have aimed to achieve are static allocative efficiency, static productive efficiency, and dynamic efficiency.
201. Traditionally, much of the formal economic analysis in regulatory economics has focused on the impact that regulation has on static allocative efficiency⁵⁹ and static productive efficiency.⁶⁰ In contrast to static efficiency concepts, until the last decade there has been less formal analysis of how regulation impacts upon dynamic efficiency, and less agreement on a definition of the term.
202. The concept of dynamic efficiency is often associated with ensuring that incentives are maintained for the access provider to innovate and invest in essential infrastructure over time. However, dynamic inefficiency has sometimes been used to describe instances where the investment and innovation has not been undertaken immediately, or has been delayed relative to some inadequately defined socially optimal time.⁶¹

⁵⁹ M. Armstrong, C. Doyle and J. Vickers, "The Access Pricing Problem: A Synthesis", *Journal of Industrial Economics* 44, 1996, pages 131-50 examines the impact that access prices have on allocative efficiency in a market where there is a vertically-integrated incumbent that supplies access to a competitive fringe that competes with the incumbent in the downstream retail market.

⁶⁰ H. Averch and L.L. Johnson, "Behavior of the Firm under Regulatory Constraint", *American Economic Review* 52, 1962, pages 1053-69, illustrate how traditional rate-of-return (ROR) regulation in the United States can lead to production inefficiency through over-capitalisation in the supply of regulated services.

⁶¹ This confusion was evident in submissions made by parties to the Productivity Commission inquiries in Australia in 2000-01 into the National Access Regime and Telecommunications Competition Regulation. See Productivity Commission, *Telecommunications Competition Regulation*, Report 16, 20 September 2001 and Productivity Commission, *National Access Regime*, Report 17, 28 September 2001 and the website www.pc.gov.au for submissions to both inquiries.

203. A more formal definition of dynamic efficiency recently used by the Australian Competition and Consumer Commission (ACCC) states that:⁶²

dynamic efficiency refers to the efficient deployment of resources between present and future uses such that the welfare of society is maximised over time. Dynamic efficiency incorporates efficiencies flowing from innovation leading to the development of new services, or improvements in production techniques and is predicated on there being appropriate incentives for investment.

Access Pricing Regulation

204. CRA's arguments about the problems of setting the access price too low and the potential for a static efficiency and dynamic efficiency trade-off, appears to rely on regulators setting access prices based on short-term or short-run marginal cost. CRA states in its submission that:⁶³

In the context of regulation, the trade-off is based on the problem that confronts regulators where they are tempted to drive retail or intermediate prices towards short-term marginal costs but in doing so undermine incentives for future investments by the firms.

205. In practice, regulated access prices are not based upon the short-term timeframe, nor are they based upon marginal costs.
206. As the Commission is charged under Section 18 of the Act with promoting competition for the long-term benefits to end users, it takes into account long-run considerations. The IPP's requirement that benchmarking be based on forward-looking cost-based prices ensures that investment in the essential infrastructure is maintained. This allows end users to continue to receive the benefits associated with consuming the retail services that are supplied over the regulated infrastructure in the future.

Competitive Entry, Investment in the Local Loop and Dynamic Efficiency

207. The Commission has previously stated that where tensions exist between static efficiency and dynamic efficiency, it takes the view that dynamic efficiency will generally better promote competition for the long-term benefit of end users. This remains the Commission's position.
208. In the case of the UCLL, long run cost-based access pricing which promotes competitive entry and static efficiency, also promotes dynamic efficiency. In contrast to claims by CRA, access to the UCLL does not simply represent resale

⁶² Australian Competition and Consumer Commission (ACCC), *Fixed Services Review — A Second Position Paper*, April 2007, page 74, available at [http://www.accc.gov.au/content/item.phtml?itemId=784802&nodeId=8241d42512e3eff76e447301d24d80c&fn=Fixed%20services%20review%E2%80%94a%20second%20position%20paper%20\(Apr%2007\).pdf](http://www.accc.gov.au/content/item.phtml?itemId=784802&nodeId=8241d42512e3eff76e447301d24d80c&fn=Fixed%20services%20review%E2%80%94a%20second%20position%20paper%20(Apr%2007).pdf)

⁶³ CRA, "Selecting the Price Point for the UCLL Initial Determination", 29 August 2007, page 4.

- of the local loop which only allows for minimum service differentiation and similar broadband speeds. Overseas experience has shown that UCLL access encourages innovation and investment by Access Seekers, and by the incumbent in the incumbent's network.
209. In the UK and Australia, UCLL-based entry has led to Access Seekers deploying digital subscriber line access multiplexers (DSLAMs) at the incumbent's exchange. This investment has allowed Access Seekers to use the incumbent's raw copper network and offer an enhanced and differentiated Asymmetric Digital Subscriber Line (ADSL) broadband service to end users based on ADSL2+ technology, which has higher bandwidth than the original ADSL service offered by the incumbent. In addition, access to the UCLL has provided end users with new and innovative services such as Internet Protocol TV (IPTV).⁶⁴
 210. The "quasi-infrastructure based competition"⁶⁵ through the UCLL is dynamically efficient and delivers long-term benefits to end users, as it promotes increased competition in the broadband market, higher broadband speeds, innovative new service offerings, and lower service prices.
 211. The innovation and investment by Access Seekers has also driven a competitive response from the incumbent. In Australia, the incumbent only undertook similar investments to offer comparable services after Access Seekers had undertaken their investments in the incumbent's exchange.
 212. The ACCC has noted that the incumbent provider only supplied ADSL2+ services in regions where competitors were already providing those services. This was despite claims by the incumbent that they had the capability to supply ADSL2+ services to all ADSL-enabled exchanges in the country if required.⁶⁶
 213. As overseas experience suggests that in the case of the UCLL static efficiency and dynamic efficiency are well aligned, the Commission considers that it has taken both into account when focusing on the promotion of entry in the downstream market. There has been no departure from the reasoning adopted in the past, and the Commission notes that previous decisions outline that it considers innovation and investment is promoted in markets where there is competition.⁶⁷

⁶⁴ Ofcom, *Future Broadband: Policy Approach to Next Generation Access*, September 2007, page 50, available at http://www.ofcom.org.uk/consult/condocs/nga/future_broadband_nga.pdf, notes that in London, VNL (Homechoice) used the UCLL to offer Internet Protocol TV (IPTV) in 2003, yet it was only recently that British Telecom (BT) developed a similar IPTV service.

⁶⁵ This description of UCLL-based competition is consistently used by the ACCC in ACCC, *Fixed Services Review*, April 2007.

⁶⁶ ACCC, *Fixed Services Review*, April 2007, page 11 and footnote 33.

⁶⁷ For example, in the Commission's final report on its Section 64 review into local loop unbundling, the Commission noted that dynamically efficient innovation is more likely to occur as a result of competition, and that such innovation from promoting competition through unbundling Telecom's local loop were likely to exceed any losses that might be generated from any disruption to investment plans (see for example, Section 64 Final Report, December 2003, paragraph 717). In its final reconsideration report on its

214. Telecom recognised during the course of the UCLL Conference that the Access Seekers could engage in investment and create innovation on the incumbent's network, and conceded that while the Commission may have providing insufficient weight to platform competition, it had not ignored dynamic efficiency.⁶⁸
215. The claim that the Commission's draft STD failed to address dynamic efficiency and set a price for access that was too low appeared to rely on the incorrect assumption that the UCLL was a resale service that did not allow for service differentiation to end users.

Investment by the Incumbent in its Network and Dynamic Efficiency

216. CRA argued that an access price set too low could lead to under-investment by the incumbent in the copper local loop network, decrease quality, and create asymmetric outcomes to society. CRA suggest a necessary condition to incentivise the incumbent to invest in its network is that access prices be set above cost. In not placing adequate weight on this condition, the draft STD raised the risk that such investment would not occur.⁶⁹
217. The Commission considers that the median point in a range of benchmarks will be the best estimate of a cost-based price. Furthermore, while an access price that at least compensates the access provider for the cost of the service may be a necessary condition for investment incentives for the access provider, the Commission believes that the prices proposed by CRA (at the 75th percentile) are not guaranteed to encourage investment by the incumbent. Competitive pressure is the stimulus for encouraging investment and innovation in an industry. As outlined earlier when examining the impact of competitive entry on efficiency, the investments by the incumbent in newer technologies at the local exchange only occurred overseas after investment had been undertaken by the Access Seekers.
218. CRA also suggests that a lower UCLL access price could adversely affect future incentives to invest in new technologies in the local loop such as optical fibre.
219. A UCLL service does not provide access to the fibre rolled out to the node/cabinet/home, and the Commission understands that it may no longer always be feasible for Telecom to supply a UCLL service to Access Seekers once a fibre access network has been built. Therefore, a price that is too low for the UCLL service is likely to provide Telecom with stronger incentives to invest in fibre, as it could avoid having to supply a service that it did not believe was earning an

investigation into mobile termination rates, the Commission also noted that the primary driver of investment by the mobile operators in newer technology (such as 3G) was the search for competitive advantage.

⁶⁸ See Conference transcript, 19 September 2007, page 57.

⁶⁹ As outlined earlier, CRA's submission appears to be based on an inappropriate measure of cost.

adequate rate of return. Conversely, a price for the UCLL service that exceeds cost, providing above normal returns to Telecom, could dampen its incentives to undertake a fibre investment.

220. The Commission considers that a median UCLL access price point will therefore have the least distortionary impact on Telecom's incentives to invest in a fibre access network.

Investments by Alternative Access Providers and Dynamic Efficiency

221. The Commission recognises that it is possible that the UCLL price will have some effect on the investment plans of other network operators, such as Vector, in fibre access networks, and Kordia, in fixed wireless access networks.
222. Vector and CRA argued that the Commission should not be concerned about access prices that are above cost for the UCLL, as this still encourages bypass investment and inter-platform competition (e.g. through wireless and optical fibre access networks), which they consider generates the greatest dynamic efficiency benefits to end users.
223. The Commission believes that the relevant price for stimulating efficient investments in alternative access networks is a cost-based price, rather than an above cost-based access price for the UCLL.
224. An access price that is above the long-run cost will discourage entry via the UCLL, increasing the likelihood of either socially wasteful investment through duplication of some part of the local loop asset — infrastructure that is likely to be uneconomic to duplicate — or over-investment in alternative access technologies through distorting the buy or build signal.
225. Further, the Commission considers that if alternative access networks can deliver existing or better value propositions than Telecom's copper network, the impact of UCLL price on such investment should be minimal. For example, even if the Vector fibre network is more costly to build than using UCLL-based access, the capacity advantages of fibre may still support undertaking such an investment if there is sufficient consumer demand for the higher quality and capacity services. Vector appeared to recognise the additional value that a fibre network delivers over the current copper local loop in its submission, acknowledging (page 14) that an entrant rolling out new technology will compete on quality not price, and (page 15) that fibre offers superior quality, capacity and service.
226. Kordia's recent announcement that it is deploying an urban wi-fi service while still planning investment in the UCLL, suggests that from the perspective of alternative infrastructure suppliers, UCLL and non-UCLL access investments are not necessarily mutually exclusive.

227. With regards to wireless technology the investment by the alternative access provider may occur because they provide end users with complementary service of mobility to existing fixed-line broadband customers. Telecom recognised the complex mixture of substitutability and complementarity existing between fixed and mobile broadband services during the UCLL conference proceedings.⁷⁰
228. Therefore, the Commission believes that use of the median access price point is unlikely to distort investment in alternative access networks such as wireless and fibre.

Real Option Theory (ROT)⁷¹ and the Truncation of Returns

229. CRA argued that to adequately compensate the access provider for the lost option to defer the investment, (or what is sometimes referred to as the wait and see option), and maintain incentives for efficient future investment, there should be a real option surcharge in the access price.⁷²
230. In assessing the applicability of ROT, Ofcom⁷³ has noted that calculating the value of real options was likely to be very difficult in practice. In particular, it requires good estimates of the relevant parameters, and the application of ROT is an area where best practice has yet to be determined by any regulator. Ofcom also recognised that other considerations such as the first-mover advantage, the uncertainty and reversibility of the investment, and the ability to stage or pilot investments need to be taken into account when assessing whether or not ROT is relevant or applicable.
231. With respect to the incumbent British Telecom's (BT's) copper local loop network, Ofcom ruled out the use of ROT, stating that:⁷⁴

BT's existing copper network was rolled out a number of decades ago. This means that the primary type of investment to consider in the context of the cost of copper is maintenance and replacement driven. This type of investment is staged in that it is made on a case-by-case basis in response to known demand. In such a case...Ofcom's proposed view is that wait and see options (i.e. a real options approach) will have a limited value.

⁷⁰ See Conference transcript, 19 September 2007, page 67.

⁷¹ The argument by proponents of ROT is that by mandating the provision of access to the incumbent's telecommunications infrastructure and forcing the incumbent to invest in facilities for Access Seekers, the regulator destroys or extinguishes the ability of an access provider to defer an irreversible or sunk investment subject to significant demand and technological uncertainty. As the ability to wait or defer an investment and resolve uncertainty is something of value to the investor, by failing to take it into account in the access price, the regulator is providing the real option to Access Seekers for free.

⁷² Real option theory (ROT) arguments were first raised by Professor Hausman in 1996 to argue that cost-based TSLRIC access prices were set well below cost. See California Public Utility Commission (CPUC), *Interim Decision Setting Final Prices for Network Elements Offered by Pacific Bell*, Decision 99-11-050, 18 November 1999, pp 21-7, available at <ftp://ftp.cpuc.ca.gov/gopher-data/telecom/d9911050.doc>

⁷³ Ofcom, *Ofcom's Approach to Risk in the Assessment of the Cost of Capital*, 26 January 2005, page 40, paragraph 6.27. Available at http://www.ofcom.org.uk/consult/condocs/cost_capital/cost_capital

⁷⁴ *ibid*, page 42, paragraph 6.33.

232. Further, the Commission notes that ROT ignores the increased growth opportunities that often exist once an initial investment is made in infrastructure. Hubbard and Lehr⁷⁵ outline that a correct analysis of ROT would recognise the impact of internet technologies, which have tended to increase the value of existing investments in the copper local loop. The authors suggest that such things as xDSL technologies may offset any wait and see option, and the correct application of ROT could lead to an overall decrease in the recommended regulated cost-based access price.
233. The Commission recognises that in theory, stranded cost risk will truncate the returns to a regulated firm on its investment.⁷⁶ In the context of the UCLL though, both the Access Provider and Access Seeker will be undertaking investments. Access Seekers will be subject to stranded asset risk and the truncation problem, as some of their assets may become stranded once a fibre access network is rolled out. This risk is partially mitigated by the requirement in the STD that is placed on Telecom in relation to cabinetisation forecasts and Notices.⁷⁷
234. For these reasons the Commerce Commission sees no justification for real options or the truncation of returns arguments influencing it to deviate away from the median value and adopt a 75th percentile in its benchmarking analysis of the UCLL access charges.

Summary of the Commission's Decision on the Price Point

235. The Commission, having taken into account the investment incentives of the Access Seeker, the Access Provider, and alternative network Access Providers, is of a view that a median price will best promote competition, static and dynamic efficiency, and the long term benefits of end users.

Currency Conversion

236. In the draft STD, the Commission converted overseas UCLL prices into New Zealand dollars, using a blended average of nominal exchange rates and purchasing power parity (PPP) rates. This conversion approach reflected the constituent elements of the cost of the UCLL service; in particular, that approximately 50% of local network costs are related to non-tradeable components (such as labour), and 50% related to tradeable capital inputs.

⁷⁵ R.G. Hubbard and W.H. Lehr, "Telecommunications, The Internet, and The Cost of Capital", in I. Vogelsang and B.M. Compaine (eds.), *The Internet Upheaval*, MIT Press, 2000.

⁷⁶ See A.L. Kolbe, W.B. Tye and S.C. Myers, *Regulatory Risk: Economic Principles and Applications to Natural Gas Pipelines and Other Industries*, Kluwer Academic Publishers, Boston 1993.

⁷⁷ See clause 351

237. Telecom submitted that the Commission has departed from its previous practice of converting foreign prices using a long-run average nominal exchange rate, and that such a departure had not been justified. Telecom argued that the Commission should use a 10-year average exchange rate.
238. At the Commission's conference, Telecom submitted that labour is a tradeable input, with the relevant skilled labour being a mobile resource.⁷⁸ Telecom also noted that aggregate PPP rates may not be relevant to the input costs of the UCLL service, and that the OECD does not use its own PPP rates to compare the prices of UCLL services, but instead uses nominal exchange rates.
239. The Commission acknowledges that there has been considerable debate over the appropriate approach to use when converting foreign rates into New Zealand currency. However, the Commission remains of the view that the currency conversion rates used in the draft STD are appropriate, as they broadly reflect the underlying cost components of the services to which the benchmarking applies.⁷⁹

De-averaging

240. Based on the above benchmarking, the Commission has determined that an average UCLL rate for New Zealand of \$24.29 per month is appropriate.
241. In its submission on the draft STD, Telecom argued that the Commission should set an average UCLL price at the initial pricing stage, with a view to considering the issue of de-averaging under the FPP should a price review be requested. According to Telecom, geographically de-averaged UCLL prices would quickly lead to de-averaged retail prices, especially for business and other non-TSO services. Telecom submits that customers prefer averaged retail pricing structures, and that any de-averaging of UCLL prices will deter infrastructure-based competition in urban areas. In addition, Telecom refers to the practical difficulties of implementing the geographic pricing proposed in the draft STD.
242. Vector also submitted that geographically de-averaged UCLL pricing at the levels contained in the draft STD would undermine investment in alternative networks. A number of other parties⁸⁰ were concerned that de-averaged pricing would unfairly disadvantage rural communities.

⁷⁸ Telecom presentation "Converting Benchmark Prices into the NZ\$ equivalent", 18 September 2007.

⁷⁹ A similar approach has been used by Ovum when benchmarking wholesale interconnection rates. See for example Ovum (Nicoletti and Howett), *Interconnect Benchmark Methodology*, 29 March 2007. See also references by CRA in submission on behalf of Telecom, "PPP in Telecommunications Benchmarking", 6 May 2002.

⁸⁰ Rural Women New Zealand, Selwyn Central Community Board.

243. Submissions from Vodafone/ihug, Orcon/Kordia/CallPlus, TelstraClear, and InternetNZ all supported the setting of urban and non-urban UCLL rates, although InternetNZ cautioned that de-averaging should only be introduced where there are other measures specifically designed to improve investment in remote regions.
244. According to Kordia, Vodafone, and CallPlus,⁸¹
- It is very difficult indeed to mount a serious economic argument in opposition to de-averaging of prices.
245. None of the economic experts representing parties at the Commission's conference disagreed with this statement. For example, Telecom agreed that in terms of economic principles, aligning UCLL rates with cost structures in different regions makes sense.⁸²
246. TUANZ also considered that the issue of subsidies for rural users was best addressed through instruments other than averaged pricing:⁸³
- The issue of subsidy to benefit rural broadband users should be addressed through consideration of more transparent subsidy in the context of the review of rural services and the TSO. A government subsidy program could be justified benefit to the whole national economy, and would spread the cost across all taxpayers rather than simply increasing costs to urban competitive broadband providers and thereby discouraging competitive market entry.
247. The cost of the UCLL service is likely to vary from one region to another, as factors such as population density varies. Where costs do vary significantly from one region to another, de-averaged prices will better reflect the underlying cost of the service, and will therefore result in more efficient outcomes.
248. For example, an averaged UCLL price will exceed cost in urban areas, and will therefore result in an inefficiently low level of UCLL-based entry and service provision in those areas. As a result, the level of demand by Access Seekers for the UCLL service would be lower than the level of demand that would be expected in a competitive market where prices reflect the underlying cost of provision.
249. The Commission notes that this reduction in demand would be in those areas where UCLL-based competition is most likely, given the characteristics of xDSL technology and the importance of density for UCLL investment.
250. In other areas, the averaging of the UCLL price would result in an artificially low UCLL price. However, this is unlikely to have a significant effect on the uptake

⁸¹ Covec "Benchmarking UCLL Prices", September 2007 (prepared for Kordia, Vodafone, and CallPlus), page 11.

⁸² Matt Crockett, Conference transcript, 19 September 2007, page 72.

⁸³ TUANZ submission, 28 August 2007, page 2.

of the UCLL service in these areas, due to the technical limitations of xDSL technology and the scale limitations associate with rural exchanges.

251. Cost-based de-averaged prices will therefore ensure that the appropriate signals for use of the UCLL service and investment in associated infrastructure such as equipment in the exchanges are provided, compared to an averaged price. The Commission considers that de-averaged UCLL pricing is likely to best give effect to section 18 of the Act.
252. In its submission to the Ministry of Economic Development (MED) on the review of the Telecommunications Service Obligation (TSO), the Commission recognised that the TSO was an instrument that was designed to achieve social objectives. However, the Commission also noted that competition would be enhanced, as would incentives to invest in rural areas, if rural customers were faced with the true cost of providing telecommunications services in those areas. This would give appropriate signals for both the consumption of telecommunications services, and investment in the provision of those services. Where subsidies are considered to be important, they should be introduced and funded in the least distorting manner.
253. For the purposes of setting UCLL prices under this determination, the Commission has therefore determined UCLL prices for urban and non-urban areas.

De-averaging methodology

254. This section applies the de-averaging methodology used in the draft STD to this average UCLL rate. The resulting urban UCLL rate and non-urban UCLL rate are based on a New Zealand average rate of \$24.29.
255. In the draft STD, the Commission noted that Australia, Canada, and the US had adopted a geographically de-averaged structure of UCLL prices, and concluded that a two-band pricing structure would be appropriate for the purposes of an initial pricing determination in New Zealand. The draft STD derived urban and non-urban prices according to the following steps:
- For each comparable jurisdiction with de-averaged pricing (i.e. Australia and the comparable US states), the extent to which urban rates are below average, and non-urban rates are above-average, is estimated;
 - These estimates (in the form of ratios) are applied to the primary price benchmark (which in the case of the draft STD was \$20.77 per month), to derive benchmarked urban and non-urban loop rates for the UCLL service in New Zealand; and

- The resulting urban and non-urban loop rates are scaled to ensure that when weighted by the proportion of lines in urban and non-urban areas, the rates are consistent with the benchmarked average loop rate.
256. The Commission has followed the same steps to derive urban and non-urban rates for New Zealand, based on an average UCLL rate of \$24.29 per month.
257. As in the draft STD, the zone 1 rate in Australia has been excluded on the basis that the majority of lines are outside of this band, and that its inclusion would over-represent the relatively low zone 1 rate in Australia. In its submission on the draft STD, Vodafone/ihug expressed a concern with the Commission's exclusion of the zone 1 rate in Australia, and submitted that some weight should be given to this rate.⁸⁴
- We find it difficult to accept the Commission's justification for excluding some of the lower Zone 1 rates, such as Australia's \$7.97 rate, ... Given the Commission's concerns around the prices being over represented due to fewer lines being in those zones perhaps a methodology could be found that would weight that factor, rather than just excluding the lower rates in a somewhat arbitrary manner.
258. However, the Commission remains of the view that in the absence of lines data across the Australian pricing zones, it is appropriate to omit the Australian zone 1 rate from the derivation of the ratio of urban rates relative to the average rate.
259. Table 6 summarises the rates by geographic zone in those comparable jurisdictions that have de-averaged rates. The table also includes the ratio of each geographic loop rate relative to the average loop rate in the state (or Australia). The median values of the urban ratios and the non-urban ratios (highlighted in bold) are used to split the primary benchmark into urban and non-urban components.

⁸⁴ Vodafone/ihug submission, 29 August 2007, paragraph 10.

Table 6: De-averaged Rates for Comparable Jurisdictions

	Zone	Urban 0=No 1=Yes	Loop Rate (NZ\$)	Average Loop Rate (NZ\$)	Ratio	Urban Ratio	Non- Urban Ratio
Australia	1	1	7.97	21.82	-63.5%		
Australia	2	1	19.60	21.82	-10.2%	-10.2%	
Australia	3	0	37.88	21.82	73.6%		73.6%
Idaho	1	1	25.06	32.36	-22.6%	-22.6%	
Idaho	2	0	38.05	32.36	17.6%		17.6%
Idaho	3	0	64.85	32.36	100.4%		100.4%
Kansas	1	1	18.99	21.66	-12.3%	-12.3%	
Kansas	2	0	21.84	21.66	0.8%		0.8%
Kansas	3	0	37.37	21.66	72.5%		72.5%
Nebraska	1	1	19.44	28.04	-30.7%	-30.7%	
Nebraska	2	0	45.01	28.04	60.5%		60.5%
Nebraska	3	0	100.08	28.04	256.9%		256.9%
New Mexico	1	1	26.05	34.62	-24.7%	-24.7%	
New Mexico	2	1	33.40	34.62	-3.5%	-3.5%	
New Mexico	3	0	49.40	34.62	42.7%		42.7%
North Dakota	1	1	23.27	26.76	-13.0%	-13.0%	
North Dakota	2	0	39.21	26.76	46.6%		46.6%
North Dakota	3	0	88.82	26.76	232.0%		232.0%
South Dakota	1	1	24.34	30.17	-19.3%	-19.3%	
South Dakota	2	1	26.52	30.17	-12.1%	-12.1%	
South Dakota	3	0	34.86	30.17	15.6%		15.6%

260. For the urban rates shown in Table 6, the median value is 87% of the average rate (i.e. 13.0% below average), while for non-urban rates, the median is 160.5% of the average.⁸⁵

261. These ratios are then applied to the initial benchmarked rate of \$24.29 per month. This produces an urban UCLL rate of \$21.12 per month, and a non-urban rate of \$38.99 per month.

262. As discussed in Appendix B, Telecom proposed an ESA-based approach, and the resulting distribution of lines across the urban and non-urban areas closely matched the distribution used by the Commission in the draft STD. All parties agreed with the Telecom approach. The Commission has therefore used an ESA-based classification of urban and non-urban areas, according to which 73.5% of lines are located within urban areas, and 26.5% of lines are in non-urban areas.

263. Applying these weights to the above urban and non-urban UCLL rates produces a weighted average UCLL rate of \$25.86, which exceeds the benchmarked average

⁸⁵ In the draft STD, these values were 84.8% and 165.6% respectively.

rate of \$24.49. None of the parties raised any issues in relation to this scaling approach. The Commission has therefore scaled down the de-averaged rates, such that the weighted average is reconciled to the benchmarked rate, as shown in Table 7.

Table 7: Summary of De-averaged Rates for New Zealand

	Rate	% lines
Initial benchmark	\$24.29	
Urban rate	\$21.12	73.5%
Non-Urban rate	\$38.99	26.5%
Weighted Average	\$25.86	
Scaling factor	0.9394	
Adjusted Urban	\$19.84	
Adjusted Non-Urban	\$36.63	

264. As a result of applying the de-averaging approach outlined in the draft STD to the initial benchmarked rate of \$24.29 per month, the UCLL rate in urban areas is \$19.84 per month, and the UCLL rate in non-urban areas is \$36.63 per month.

Summary of urban and non-urban UCLL monthly rental rates

MPF Service Monthly Charge – Price list item 2.1

265. For the purposes of this STD, the Commission has determined that the monthly rate for the UCLL service is \$19.84 in urban areas, and \$36.63 in non-urban areas.

PRICE TERMS - UCLL CONNECTION RATES

Transfer of existing MPF connection

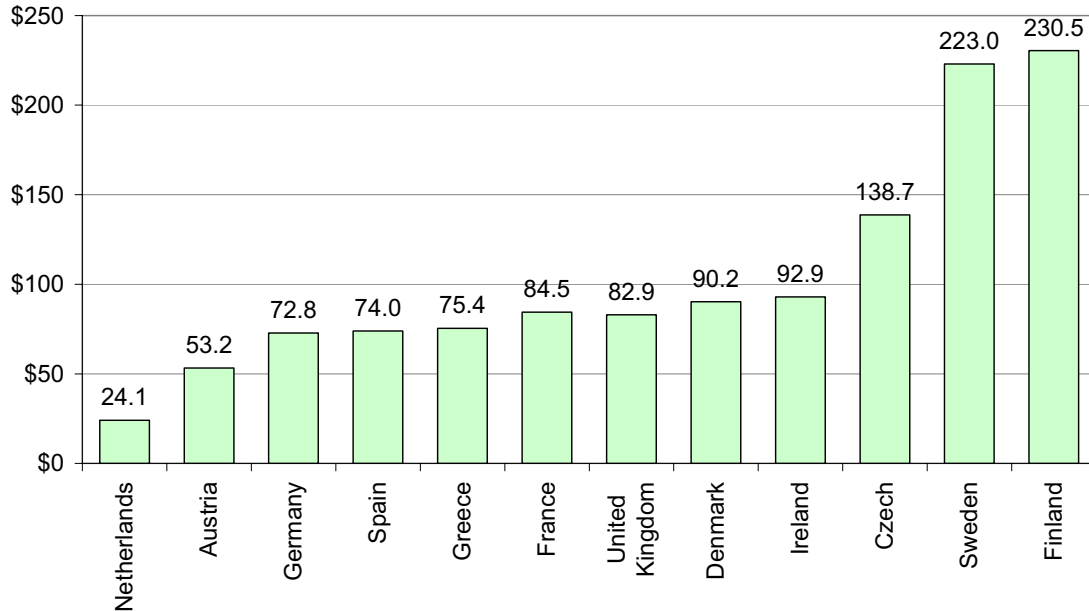
MPF Transfer – Price list item 1.2

Single Transfers

266. This charge is incurred where the metallic path facility (MPF) serving an existing retail customer is transferred from one UCLL-based Access Seeker to another. This involves disconnecting the existing jumper wire that connects the MPF to the existing Access Seeker's equipment, and reconnecting it to the new Access Seeker's equipment. The charge for this service therefore relates to the cost of sending a person to the exchange to physically move the jumper. In addition, there may be some back-office functions associated with the transfer, for example, the updating of Telecom's records for the purposes of billing the new Access Seeker.
267. The draft STD contained some relevant pricing information from other countries. This information was screened to ensure that the benchmarks related to similar services in comparable countries with forward-looking cost-based prices. This resulted in the exclusion of several EU countries which did not appear to have forward-looking cost-based rates.
268. Of the remaining countries, the Commission concluded that all were comparable for the purposes of setting a transfer charge. This was on the basis that the cost of the transfer service is primarily driven by labour rates, and that differences in labour rates are accounted for through the use of PPP rates. The cost of the transfer service is not influenced by demographic factors such as urbanisation and population density to the same extent as network-related costs.
269. Figure 3 summarises the connection charges used in the draft STD. These EU benchmarks satisfied the screening criteria of adopting forward-looking cost-based charges. The transfer charges in the benchmarked jurisdictions were converted using PPP rates, as the service is primarily comprised of labour costs. The median rate was \$83.70 per transfer.

Figure 3: Transfer charges for the UCLL service

Connection charge for UCLL services in NZ\$

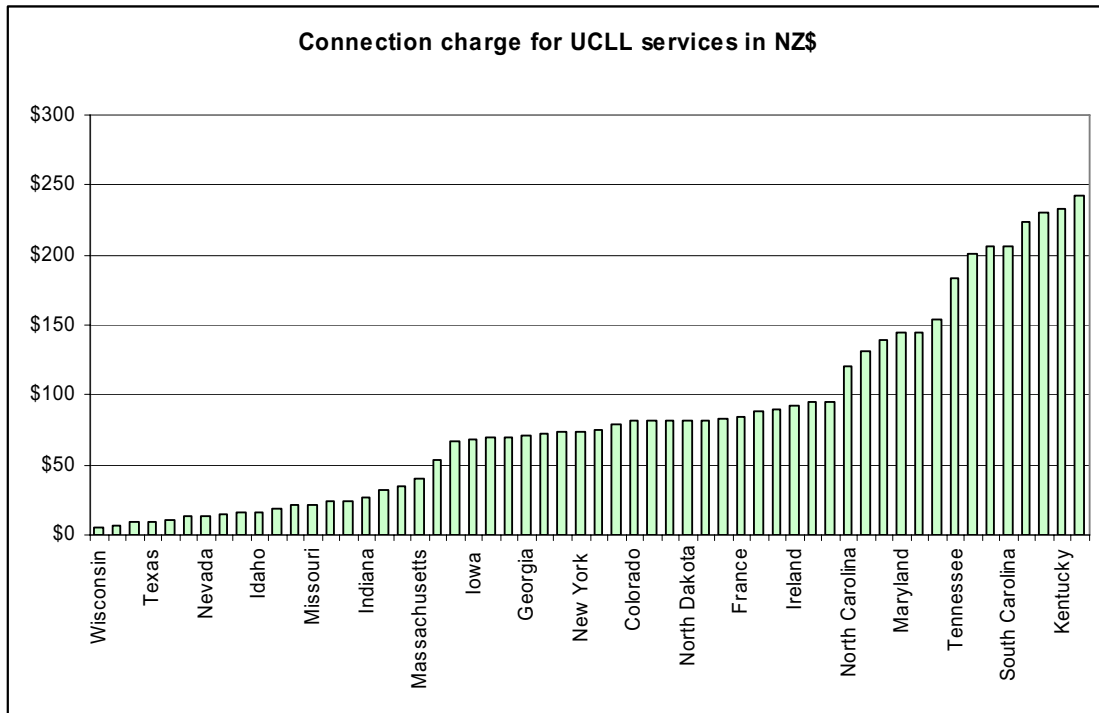


270. In a submission on behalf of Telecom, LECG gathered some additional benchmarks from the US states which it considered were relevant to determining a cost-based transfer charge. According to LECG, cost-based pricing information is available from RBOCs in 44 states in the US. LECG presented this data, along with the EU transfer rates contained in the draft STD. LECG were unable to identify any consistent relationship between the transfer rates and expected cost drivers.
271. Telecom further submitted that in respect of the benchmarking of connection charges, the Commission had incorrectly assumed that connection services are wholly labour-related, and hence had applied a weight of 100% to the PPP rates. However, according to Telecom, labour represents only 60% of the cost of the connection service, with 30% being materials (including wiring), and 10% relating to travel.
272. In terms of the cost proportions for the connection services submitted by Telecom, the 30% attributed to materials (including wiring) appears to be high, especially when compared to Professor Hausman's submission that refers to the copper input representing 12% of total loop costs. The materials component of the UCLL service are likely to be higher than the materials component of the connection service, as the latter only relates to the rewiring of the jumper connection at the exchange. For the purposes of this determination, the Commission has retained the assumption used in the draft STD, that the

connection service is primarily comprised of labour, and that the appropriate currency conversion to apply to this service is therefore the PPP rates.

273. Figure 4 shows the expanded set of cost-based transfer charges in the 12 EU and 44 US jurisdictions, based on PPP rates. The median value of the connection transfer benchmarks is \$74.83 per transfer.

Figure 4: Expanded Set of Transfer Charges for the UCLL Service



274. The Commission has determined a ‘MPF Transfer’ charge of \$74.83 per transfer.

Bulk Transfers

275. In Telecom’s draft STP, Telecom proposed that where multiple MPF services at the same exchange are being transferred, Telecom should be able to recover the project management and other additional transaction costs incurred with respect to such multiple transfers. According to the STP, these costs would be recovered on a Price on Application (POA) basis.

276. In the draft STD, the Commission noted that it would be reasonable for Telecom to recover any additional costs associated with managing bulk transfers of MPF services, although there did not appear to be a separate charge for such costs within the MPF price list published by Openreach. This suggests that such costs

- may be recovered as part of other Openreach charges rather than as a separate charge.
277. The Commission also noted that there may be economies of scale in transferring multiple MPF services at the same exchange,⁸⁶ and would expect such scale economies to be reflected in the price charged for bulk transfers. For example, in the Openreach metallic path facility price list, the mass migration charge is approximately 20% below that for individual transfers.⁸⁷ eircom also has a schedule of volume-dependent discounts that apply to the connection charge.
278. The Commission's preliminary view in the draft STD was that, if Telecom is to include a separate charge for additional project management costs relating to the transfer of multiple MPF services at the same exchange, a separate bulk MPF Transfer charge should also be available at a lower rate than the individual MPF Transfer charge, to reflect economies of scale.
279. In its submission on the draft STD, Telecom disagreed with the view that scale economies are relevant to connection transfers:
- Economies of scale typically apply to the ability to work capital assets more efficiently or an increased market penetration. In this particular service, neither actually applies.
280. The Commission disagrees with Telecom's characterisation of economies of scale in respect of transferring connections. Economies of scale are present where the average cost of production declines as volume increases. This occurs where fixed costs are present. In the case of transferring a connection, the cost of sending personnel into the exchange (i.e. the travel and vehicle costs) to switch jumpers within the MDF will be largely insensitive to the number of transfers being affected. Where multiple connections are being transferred, these fixed costs will be spread across a greater number of connections, reducing the average cost per transfer.
281. Telecom goes on to note that it has negotiated an average rate with its service companies which takes into account instances of simultaneous bulk transfers. As a result, Telecom argues that any economies of scale are already taken into account in these rates, and that if a bulk discount is to be introduced, so should a premium be added to Telecom's "average" negotiated rate for single transfers.
282. The significance of Telecom's reference to the average rate it has negotiated with its service companies (and the implications if that average rate were to be 'de-averaged' into single and bulk rates) is limited at the IPP stage, as the price of the MPF transfer is to be benchmarked against similar services in comparable

⁸⁶ For example the cost of sending personnel into the exchange to move jumpers could be spread across multiple MPF services.

⁸⁷ Where such migration occurs within normal business hours.

countries. As noted above, a number of countries do have reduced transfer charges where multiple connections are being transferred.

283. In addition, a number of parties at the Commission's conference submitted that the terms that Telecom has historically negotiated with its service companies may be of little relevance to a UCLL environment, where Access Seekers are likely to be transferring significant volumes of existing customers onto UCLL-based services. For example, Vodafone/ihug noted that there is likely to be a significant increase in the volume of jumpering as exchanges are unbundled, and that as a result, existing Telecom contracts based on much lower volumes may need to be revisited.⁸⁸
284. Vodafone/ihug also noted that the transfer of multiple connections is likely to be of particular significance for Access Seekers in New Zealand, given that competitors have been serving retail customers based on other forms of wholesale access.⁸⁹ For example, an Access Seeker may have been supplying retail customers with a UBS-based service, and having built up a customer base at a particular exchange, may want to transfer those customers from a UBS-based service to a UCLL-based service. The ability to do so on a bulk or mass migration basis, and at a rate that is reduced to reflect the associated cost savings, may be a significant consideration for the Access Seeker.
285. The Commission has also considered a recent ACCC final decision in relation to the line-sharing service (LSS), in which the ACCC sets a number of indicative prices where single and bulk LSS connections are transferred.⁹⁰ The LSS connection service is similar to the UCLL connection service, in terms of the functions that are associated with it. This primarily involves travel to the exchange and re-wiring of the jumper connections at the exchange.⁹¹ The ACCC also allows for 'back-of-house' activities such as validation and faults, and a 10% mark-up on direct costs as an allowance for indirect costs such as contract management.
286. For 2008/09, the ACCC has set a per-connection charge of A\$43.10 for a single connection, and a lower per-connection charge of A\$32.20 for a Managed Network Migration (MNM).⁹² For MNMs, in addition to the per-connection charge set out above, a fixed charge applies (A\$134.50 per MNM, increasing to A\$140.10 for 2008/09). There is also a minimum connection charge per exchange, which is equivalent to 20 connections.

⁸⁸ Conference transcript, 19 September 2007, page 101.

⁸⁹ *ibid.*

⁹⁰ ACCC "Review of the Line Sharing Service Declaration, Final Decision", October 2007.

⁹¹ *ibid.*, page 99-101.

⁹² Managed Network Migration is defined as the transfer or migration of services that is achieved by the project management by Telstra of a coordinated cancellation and connection of services.

287. According to the ACCC, the fixed charge for MNMs reflects the administrative costs incurred by Telstra to project manage the migration, and the variable per-connection charge reflects the jumpering costs for each connection made as part of the MNM.⁹³
288. As noted in paragraph 275 above, Telecom's STP included a charge to cover the project management and other additional transaction costs incurred when transferring multiple connections.⁹⁴ In Australia, these costs (for the LSS) are recovered through the fixed MNM charge. However, Telecom has not included a discounted variable charge. Under Telecom's STP, Telecom would in effect be recovering any additional costs it incurs when undertaking a bulk transfer, but would not be passing on cost savings associated with such bulk transfers.
289. The Commission remains of the view that it is reasonable for Telecom to recover any additional costs associated with managing bulk transfers of MPF services. However, any cost savings associated with bulk transfers should also be reflected in a lower variable per-connection cost.
290. The variable per-connection charges for the MNM in Australia are approximately 25% below the single per-connection charges. As noted in the draft STD, the Openreach metallic path facility price list includes a mass migration charge that is approximately 20% below that for individual transfers.⁹⁵
291. The Commission therefore considers that where bulk transfers of UCLL services at the same exchange are requested, the one-off per-connection charges for such transfers should be lower than the charge for a single connection, to reflect the lower unit cost of transferring multiple connections. As such a pricing structure better reflects the underlying costs, this will promote efficient levels of transfers of existing services, which is consistent with section 18 of the Act.
292. Based on the examples referred to above, the Commission considers that a discount of 25% from the single connection rate, as determined by the ACCC, is appropriate in the case of bulk transfers.
293. Given a single 'MPF Transfer' charge of \$74.83 per transfer, the Commission has determined that the one-off charge for bulk transfers is \$56.12 per transfer (i.e. single rate less 25%), to apply where 20 or more connections⁹⁶ at the same exchange are simultaneously transferred.

⁹³ *ibid*, page 108.

⁹⁴ See price list item 1.4 in Telecom's STP.

⁹⁵ Where such migration occurs within normal business hours.

⁹⁶ See paragraph 286.

New MPF connection*MPF New Connection – Price list item 1.1*

294. In the draft STD, the “MPF New Connection” charge was set at \$250, which was based on the new connection charge in the UK and France being approximately three times the connection charge for transferring an existing service. This higher rate reflects the additional costs that may be involved when establishing a new connection (over and above the case where an existing service is being transferred), such as a site visit to the customer premises in order to establish and test the connection. At the UCLL conference, Telecom clarified that its concern was to cover the costs of a site visit, where required, to provision the new connection.
295. Based on the revised single MPF transfer rate above, the corresponding new connection charge is \$225 per connection.⁹⁷ This charge applies where an additional site visit or “truck roll” is required.
296. Where an additional site visit is not required, the transfer charges of \$74.83 per connection, and \$56.12 where bulk new connections are simultaneously supplied at the same exchange, applies.

⁹⁷ Given the MPF Transfer charge of \$74.83 per transfer, the new connection charge is \$225 (3x\$74.83).

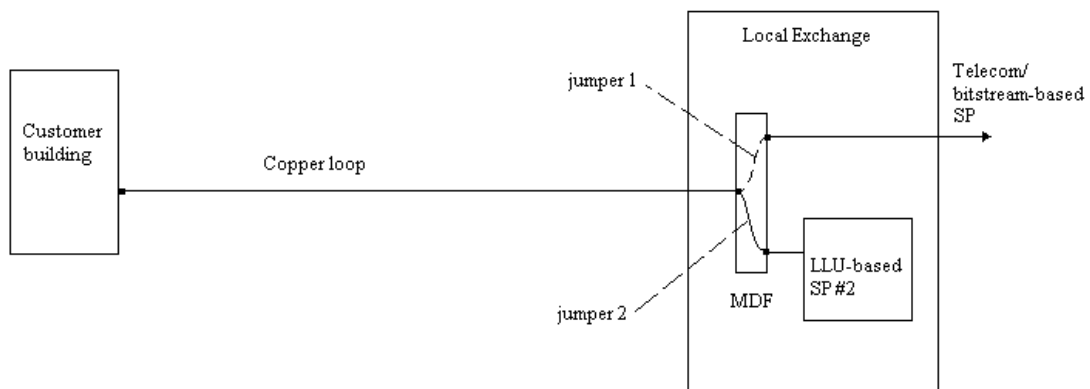
PRICE TERMS - OTHER CORE RATES

MPF transfer to other service

Other Service to MPF Transfer – Price list item 1.3

297. This charge is incurred where an existing retail customer is transferred from one Access Seeker (not using UCLL) to another (using UCLL). The Commission does not consider that this charge would differ from the ‘MPF Transfer’ charge above.
298. For example, in Figure 5, a transfer from a bitstream-based Access Seeker to a UCLL-based Access Seeker involves the replacement of jumper 1, which was connected to Telecom equipment in the exchange, with jumper 2, which is connected to the UCLL-based Access Seeker (SP#2) equipment, as was the case for a transfer between UCLL-based Access Seekers above.

Figure 5: Customer Reassignment (non-UCLL→UCLL)



299. In setting charges for MPF transfers, the MPF price lists of Openreach and eircom do not appear to make a distinction as to the services between which a MPF is being transferred.
300. The Commission considers that the transfer charge for ‘Other Service to MPF Transfer’ should be the same as the transfer charge for ‘MPF Transfer’. Accordingly, the ‘Other Service to MPF Transfer’ charge of \$74.83 per transfer applies in respect of single transfers, and a bulk rate of \$56.12 per transfer applies where there are 20 transfers or more.

Relinquishment of MPF

MPF Relinquishment – Price list item 1.7

301. This charge is incurred where the supply of service to a retail customer of an UCLL-based Access Seeker is terminated. This may (although not necessarily) involve the physical disconnection of the MPF service at some point between the customer's premises and the local exchange. In addition, back-office functions associated with customer disconnection would also be included, such as Telecom updating its cable and billing records.
302. In principle, this appears to involve similar functions as those involved in connecting such a customer (the 'MPF New Connection' service). While there could be some justification for using the benchmarked rate for the new connection service as a basis for a relinquishment charge, it is not clear why Telecom would physically disconnect the MPF service, in which case the incremental cost incurred when a service is relinquished would be lower than the cost of a new connection.
303. The Commission also understands that Telecom does not normally charge a relinquishment fee when a retail customer terminates a retail service⁹⁸, nor does it charge a relinquishment fee in respect of other wholesale services. This suggests that, to the extent that Telecom incurs costs when such services are relinquished, those costs are recovered through other charges to the retail or wholesale customer.
304. While Openreach's price list has previously included an 'MPF Cease Charge', this price has recently been set to zero. However, the eircom reference offer does include a disconnection charge (of €35.44, or approximately NZ\$69) that applies when the disconnection is initiated by the Access Seeker and when there is no gaining operator.
305. Accordingly, the Commission considers that there should be no charge for MPF Relinquishment.

Tie cable rental

Tie Cable Service space rental charge - Price list item 2.2

306. This charge is incurred as the monthly space rental for copper tie cables between the Access Seeker's network cable in the Telecom exchange manhole, and the Handover Distribution Point on the MDF. This would apply where the Access

⁹⁸ Some services have an early relinquishment fee where customer equipment is provided as part of the service.

Seeker's equipment is remotely located. That is, the Access Seeker's equipment is not co-located in Telecom's local exchange.

307. In the draft STD, the Commission considered that the space rental for a tie cable should be based on the total area of the footprint used by the cable. The Commission now agrees with the submissions made by Telecom at the UCLL conference and considers that this method is impractical. Instead the Commission has benchmarked an Openreach price in line with the charge for an external tie cable in the Co-location STD.
308. In the Openreach price list an annual rental for a 100 metre external tie cable is £104.93 for a 100 pair cable and £168.43 for a 500 pair cable. As the size and length of Access Seekers' tie cables can vary, the Commission has used the average (mean) of these two benchmarked prices. These annual prices have been converted into NZD using a PPP conversion rate⁹⁹ and then converted to monthly charges. Accordingly the tie cable space rental charge is \$27.09 per month per cable.

⁹⁹ To the extent that this component measures a non-tradable good, PPP is more appropriate than exchange rate currency conversion

PRICE TERMS - SUNDRY CHARGES

309. This section provides reasons for the sundry prices determined. The changes themselves are provided in the UCLL Price List in Appendix A.

Margin for return on capital and risk

310. In its STP for the UCLL service, Telecom proposed that a margin to cover a return on capital and risk be included in the pricing of sundry services. However, due to time constraints, Telecom was not able to provide this information in its STP.¹⁰⁰
311. In the draft STD, the Commission stated that Telecom should demonstrate why such a margin should be included.¹⁰¹
312. In its submission on the draft STD, Telecom again argued that it is appropriate to include a margin for return on capital and risk.¹⁰² According to Telecom, the international benchmark for a shared and common cost mark-up would be adequate to provide a return on capital and risk.
313. The shared and common cost-mark-up is discussed in more detail in the following section. However, Telecom submits that the benchmarked mark-up of []TNZRI is sufficient to include a return on capital and risk, whereas the initial mark-up in the STP did not include such a margin.
314. Any margin for a return on capital and risk will depend on the level of capital employed. In its cross-submission on the Commission's draft STD on the Unbundled Bitstream Access service, Telecom submitted that in relation to sundry charges (which is where the above mark-up would be applied),¹⁰³
- ... in almost all cases the use of assets is minimal. The cost is almost entirely dependent on the amount of labour input of various types required. Therefore the issue of changes in asset costs is unlikely to be relevant.
315. In other words, Telecom submits that the sundry services are labour intensive, with very little capital employed to provide those services. Accordingly, any margin for a return on capital and risk will be small, and will not justify the increase in the shared and common cost mark-up proposed by Telecom.

¹⁰⁰ Telecom STP for UCLL, 12 June 2007, paragraph 117.

¹⁰¹ Draft STD, paragraph 200.

¹⁰² Telecom submission on draft STD, 29 August 2007, Non-Price Terms and Sundry Pricing, paragraphs 85-86.

¹⁰³ Telecom cross-submission on draft STD for UBA service, Appendix 1, page 15.

Shared and common cost mark-up

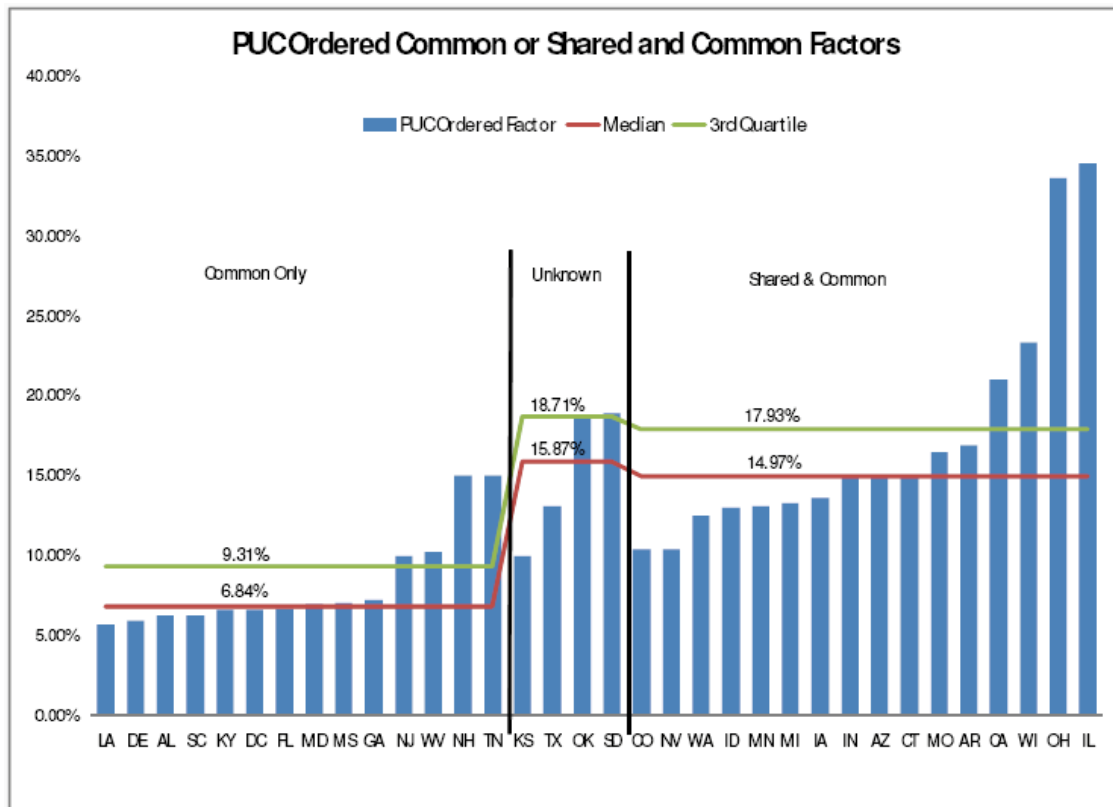
316. In the draft STD, the Commission noted that Telecom had priced sundry items on the basis of Telecom's direct costs¹⁰⁴, plus a mark-up as a contribution to common costs. The common cost mark-up proposed by Telecom in its STP was [] TNZRI for field service inputs, and 10% for all other direct inputs. In the draft STD, the Commission questioned the magnitude of the mark-ups proposed by Telecom.
317. TelstraClear considered that a 10% mark-up on other direct inputs was reasonable, although was unable to comment on the mark-up for field service inputs.¹⁰⁵ Vodafone/iHug submitted that Access Seekers should not be required to contribute to Telecom's common costs, but accepted at the Commission's conference that some mark-up would be appropriate.¹⁰⁶
318. In its submission on the draft STD, Telecom proposed that the mark-ups should be reviewed in light of the benchmarking study undertaken by LECG. Based on the 75th percentile benchmark of [] TNZRI, Telecom submitted that this figure incorporates and therefore replaces the 10% figure for all other direct inputs, as it includes the relevant shared and common operational as well as fixed costs, and the margin for return on capital and risk. Telecom submitted that the [] TNZRI mark-up on field service inputs be replaced with the [] TNZRI mark-up.
319. The Commission has reviewed the benchmarking undertaken by LECG in respect of shared and common cost mark-ups. This analysis focused only on mark-ups used in regulatory decision in the US states, as LECG were unable to identify reliable information on mark-ups in other jurisdictions.
320. LECG note that the FCC rules require that wherever possible, costs be attributed directly to individual network elements, although the rules also recognise that this is not always possible. Shared and common costs should therefore be apportioned to individual services or elements in a "reasonable manner".
321. Such apportionment is often achieved by applying a single percentage mark-up to long-run incremental costs. LECG's submission refers to a range of mark-ups approved by US regulators when setting prices for unbundled network elements. These mark-ups are summarised in Figure 6.

¹⁰⁴ Such as Telecom service company charges paid by Telecom for the same or similar work; external vendor charges such as card access or software licences; and direct internal labour costs.

¹⁰⁵ TelstraClear submission on Telecom's STP, 28 June 2007, paragraph 51.

¹⁰⁶ Conference transcript, 20 September 2007, page 197.

Figure 6: LECG Benchmarking of US Mark-ups



322. According to LECG, these mark-ups were based on a survey undertaken by LECG in 2001. LECG submitted that for the pricing of UCLL sundry services to be set on a consistent basis with the core UCLL services, a shared and common cost mark-up would be required. According to LECG, the 75th percentile shared and common cost mark-up was 17.93%, while the median value was 14.97%.
323. Based upon the reasoning outlined in the subsection “Price Point Selection”, the Commission considers that the 75th percentile approach to point selection in the current case is not appropriate, and the median value is in principle the correct starting point. The median value of the 16 shared and common cost mark-ups is 14.97%.
324. However, the Commission has a number of additional concerns with the LECG benchmarking results. The first relates to the currency and source of the benchmarks. As noted above, the mark-ups were surveyed in 2001. In addition, LECG has informed the Commission that for 20 of the 34 observations shown in Figure 6, the mark-ups are sourced from orders made by the regulators. The remaining 14 observations were not included in public orders, either because of proprietary concerns or because the carriers had been ordered to recalculate the rates. These 14 mark-ups were sourced from contacts within the various ILECs.

- LECG have been unable to confirm those contacts, but have been able to confirm the factors for five SBC¹⁰⁷ companies.
325. The Commission notes that of the 14 observations that are not publicly available, the majority are for SBC, which typically accounted for the higher shared and common cost observations. While these do not appear to be in the public arena, the Commission has been able to confirm that the California mark-up of 21% that is included in the LECG survey is no longer current. The CPUC acknowledged that the 21% mark-up that had been previously set had been incorrectly calculated.¹⁰⁸ Specifically, the numerator of the mark-up calculation overstated the relevant expenses. Correcting for this overstatement the regulator reduced the mark-up back to 19%.
326. The Commission has not been able to confirm all of the remaining mark-ups referred to by LECG. However, the Commission notes that in another more recent decision¹⁰⁹ relating to UNE rates to apply for Verizon in California,¹¹⁰ the CPUC determined a shared and common cost mark-up of 8.93%, which is considerably lower than most of the shared and common mark-ups in the LECG submission.
327. One possible explanation for this might be the definitions used. For example, LECG note that one expense category might be treated differently by different companies. However, it is noted that both the California decisions were made by the CPUC, suggesting that a consistent approach would have been taken.
328. Another possible explanation for the lower mark-up for Verizon is that Verizon has a more diverse operation, including a mobile operation, across which to spread shared and common costs. This point was also discussed at the Commission's conference, where LECG accepted that such mark-ups could likely be lower in respect of integrated companies, for example with fixed-line and mobile businesses.¹¹¹
329. This suggests that the benchmarked shared and common cost mark-ups in the LECG submission are likely to overstate the mark-up that should be applied in respect of sundry UCLL services supplied by Telecom. While the Commission considers that some mark-up over direct costs is appropriate, the median value of just below 15% from the LECG survey is considered excessive.
330. Accordingly, the Commission maintains that no justification for changing the mark-ups that were included in Telecom's STP. For the purposes of this

¹⁰⁷ SBC acquired AT&T in 2005 and subsequently changed its corporate name to AT&T.

¹⁰⁸ D0503026 (17 March 2005), section V "Shared and Common Cost Mark-up".

¹⁰⁹ D0603025 (15 March 2006).

¹¹⁰ Although SBC account for approximately 78% of loops in California, Verizon is the second-largest ILEC in the state, with approximately 21% of state loops. FCC "Universal Service Monitoring Report".

¹¹¹ Commission UCLL and UCLL Co-location Conference Transcript, 20 September 2007, page 199.

determination, the Commission has used a mark-up of [] TNZRI for field service inputs, and a mark-up of 10% for all other direct inputs.

Price on Application

331. A number of the price list items are charged on a “price on application” (POA) basis. For these items, it is not practical to set a fixed price because of the variable nature of the work involved and therefore the cost.
332. In written submissions, Access Seekers submitted that charging on a POA basis would not provide sufficient certainty as to the price they will be required to pay. Telecom submitted that it would like to avoid POA charges if possible, because they are complex and difficult to administer, and would like to move away from this type of charging over time. Telecom suggested that when the sundry charges are adjusted annually, an attempt should be made to set a fixed price for the POA items.
333. At the Commission’s conference, parties agreed that POA is appropriate, and Telecom suggested that Access Seekers could verify Telecom’s service company contract costs by obtaining a quote for the cost of the service in question themselves, or that Telecom could provide a second quote. Parties agreed that to place the appropriate incentives on Access Seekers and Telecom, and to avoid unnecessary costs being incurred, the Access Seeker should only be entitled to recover the costs associated with obtaining the second quote, if it could show that the POA charged by Telecom was too high.¹¹²
334. The Commission has reviewed the POA items and has determined that they are appropriate, but that at each annual sundry price adjustment, a fixed price should be set if practicable.
335. For all POA price items, Telecom must, if requested by the Access Seeker, make reasonable endeavours to provide a competing quote, or consider a competing quote provided by the Access Seeker.

Direct front office costs

336. A number of the price list items, such as Manual Line Testing and MPF Pair Charge, include an allowance for Telecom’s estimated direct front office costs to manage the transaction. In its STP, Telecom submitted that this cost should be [] TNZCOI. Telecom has conducted further analysis on this cost¹¹³ and has found

¹¹² See Conference transcript, 19 September 2007, pages 94-96. The Chair suggested on page 95 that in order to avoid the transactions costs associated with such challenges of the POA, Telecom should be given a margin of error of around 10%.

¹¹³ Letter from Telecom (Nicola Gaffaney) to the Commission “Standard Terms Determination Processes – Sundry Costs”, dated 5 October 2007

the estimated cost should be reduced to [] TNZCOI. The Commission has applied this reduced estimate in the UCLL Price List in Appendix A.

Transaction charges

Project management charge for bulk new connections and transfers – Price list items 1.4, 1.5 and 1.6

337. The Price List includes a separate POA charge for the project management and additional transaction resources for co-ordination of bulk new connections and transfers. This charge is in addition to the charges for the individual new connections or transfers.
338. In its draft STD, the Commission's preliminary view was that a project management charge is reasonable but that it was not reasonable to also charge for bulk new connections and transfers at the individual rate when there should be economies of scale. Accordingly, the Commission has retained the project management charges but introduced a reduced charge for bulk new connections and transfers.

Ancillary service charges

Third party interference investigation – Price list item 3.7

339. In the draft STD, the Commission considered that where Telecom was requested to investigate a potential third party breach of the Interference Management Plan and the third party was causing the interference, they should pay. Otherwise the party that initiated the investigation should pay.
340. Telecom submitted that it would be difficult to charge the interfering party where that party was not a party to the UCLL Terms. The Commission agrees and has changed this price item so that it applies only where the third party is an Access Seeker.

NON-PRICE TERMS

Introduction

341. In determining the non-price terms, the Commission has generally adopted:
- the non-price terms that were unanimously recommended by the TCF and only made changes to those recommendations where there was a compelling reason to do so;
 - those changes to the non-price terms included in Telecom's cross submission on the draft STD and which the Commission believes dealt with Access Seekers' concerns; and
 - those non-price terms where there are well established Telecom operational systems in place (e.g. fault prioritisation) which would be expensive to adjust. The Commission has only made changes where there is a clear benefit, given that Access Seekers and Telecom Retail will ultimately receive equivalent service levels through the operational separation process.
342. In addition, the Commission has considered:
- the purpose in section 18 of the Act;
 - whether the terms represent a balance of Access Seekers' and the Access Provider's interests;
 - whether the terms are certain, clear and practically workable; and
 - whether the terms are consistent with general commercial practice or whether it is necessary for terms to be consistent with general commercial practice.
343. The Commission took into account submissions from Telecom and the Access Seekers when considering the UCLL Terms. In some instances the Commission may agree with the general submission but does not consider the proposed alternative wording to be appropriate, in which case the Commission has made amendments using its own wording. The Commission has endeavoured to ensure that drafting is logical and coherent.
344. The following sections provide reasons for those substantial changes made to the Commission's draft UCLL Terms.

General Terms

Section 1 - Definitions

345. The Commission has made a number of changes since the draft UCLL General Terms to ensure consistency between the General Terms and the applicable schedules, and to ensure consistency, to the extent possible, between the UCLL and the Co-location General Terms.

Section 10 and Section 47 - Change mechanism for UCLL Operations Manual, UCLL Service Level Terms and Interference Management Plan

346. The Commission considers that any changes to the UCLL Terms in accordance with section 10 or section 47, whether proposed by an Access Seeker or Telecom, and whether voted upon by the Telecommunications Carriers' Forum or decided by an independent recommendation maker, should require the approval of the Commission. The Commission considers that its approval is necessary to ensure an outcome in accordance with section 18 of the Act.

Sections 19 and 20 - Liability

347. The Commission has accepted that it is appropriate that liability of the parties is limited for not only defaults (as defined by the General Terms), but also for negligent acts or omissions, and breaches of statutory duty.
348. In addition, the Commission has accepted that it is an appropriate commercial position that the risk of Access Seeker liability for use of Telecom systems or software is not a risk that the Access Seeker can control, and therefore should appropriately sit outside the limitations and exclusions of liability.

Section 23 - Outages

349. In its draft STD, the Commission determined that Telecom must use all reasonable endeavours to conduct Planned Outages between midnight to 6.00 am. Telecom submit that this period should be 11.00 pm to 6.00 am as the Commission's draft view has a detrimental impact on staff and shortens the time they have available for rectify outages by an hour. Access Seekers generally consider 11.00 pm to 6.00 am to be reasonable although Vodafone/ihug propose that the 11.00 pm and midnight period should be limited to preparatory and low impact work as many end-users will still be using the services at this time.
350. The Commission considers that on balance, the period 11.00 pm to 6.00 am for Planned Outages is reasonable and notes that, as stated in clause 23.3.1, Telecom

is also obliged to minimise any impact of Planned Outages to the extent practicable.

Section 38 - Termination of supply (Cabinetisation)

351. The Commission received submissions from Telecom and Access Seekers on the nature and extent of notice required in respect of Telecom's plans for cabinetisation, including terms provided by the TCF.
352. Telecom submitted that, based on discussions with the TCF it was agreed that cabinetisation forecasts and notices would provide Access Seekers with certainty in relation to their capital investment planning for the UCLL Service. It was acknowledged that the options for Access Seekers in this situation included either co-locating in a cabinet or transferring end users to Telecom's bitstream services.
353. There was a discussion of these issues at the Commission's conference¹¹⁴ in which Access Seekers expressed their concern that:
- cabinetisation has the potential to strand Access Seekers' assets in an exchange; or
 - if Telecom overstates where it will cabinetise, Access Seekers could lose investment opportunities.
354. Telecom agreed with Access Seekers that it was important to distinguish between a binding notice and an indicative forecast, so that Access Seekers had reliable information upon which to base their investment decisions.
355. Accordingly, the Commission has determined in clauses 38.9-38.15 of the UCLL General Terms the basis on which Telecom must terminate supply of the UCLL service when replacing MPFs from an exchange with MPFs from a distribution cabinet (or equivalent facility).
356. Under the UCLL STD, Telecom is required to provide Access Seekers with:
- an initial notice of cabinetisation for the first 24 months;¹¹⁵
 - a cabinetisation notice at least 24 months before any other cabinetisation takes place (i.e. that was not addressed in the initial notice), and,
 - a rolling three year forecast of its cabinetisation plans on each six month anniversary of the determination date.
357. The notices must set out Telecom's cabinetisation plans on a per exchange basis (including the suburbs affected and the number or percentage of MPFs that will be affected) and explain the effect on any Access Seekers in receipt of the UCLL service. Telecom may amend these notices in some circumstances, such as where

¹¹⁴ See UCLL Conference, 20 September 2007, page 120.

¹¹⁵ See paragraph 449 below and clause 3.1.4 of the Implementation Plan.

there is a material risk to the UCLL service.¹¹⁶

358. Clause 38.12 explicitly requires Telecom to adhere to its notices and upon their expiry Telecom must complete the applicable cabinetisation within three months. For the avoidance of doubt, any breach of these requirements may give rise to a dispute and could constitute a breach of an enforceable matter under the Act.
359. Following discussion at the Conference, the Commission has also determined that if cabinetisation takes place in accordance with timeframes in the initial notice or the cabinetisation notice period (24 months), then Access Seekers will pay to transfer Access Seeker's end users to other Telecom services. This is appropriate, as the key basis on which Access Seekers will have decided to invest will not have changed. In all other circumstances, such as where a notice period has been shortened, Telecom will bear the costs of transfer.

UCLL Service Description (Schedule 1)

360. In the draft STD, the Commission deleted the exclusion from the UCLL Service of MPFs that have infrastructure capability enhancement such as "pair gain" on them. Telecom has advised that about 7,000 end-users have services delivered by pair gain systems and that this is decreasing over time.
361. While the Commission accepts that it is not possible to unbundle a MPF while it is supporting a pair gain system, Telecom may be able to transfer the pair gain system onto another pair, either spare or in use but not supporting a pair gain system, in order to make the MPF available. In some cases, for example where the pair gain system is only providing service to the customer who is moving to the UCLL based service, the pair gain system could be withdrawn altogether.
362. The term "infrastructure capability enhancement" is not defined. Submissions from all parties refer to pair gain systems as being the only example of infrastructure capability enhancement.
363. Accordingly, an exclusion regarding infrastructure capability enhancement has been included in clause 2.8, but confined to pair gain systems and only where there is no other suitable pair available onto which the pair gain system can be transferred, if it still required.
364. Telecom submit that the Access Seeker should pay the cost of transferring a pair gain system to another pair on a POA basis so that the Access Seeker can gain access to a MPF. The Commission considers that such network rearrangements are a normal overhead of operating a network to provide services to wholesale or retail customers, and that the Access Seeker should not be charged for this work.

¹¹⁶ See clause 38.11, UCLL General Terms.

UCLL Service Level Terms (Schedule 3)

Introduction

365. The Service Level Terms set out the quality and performance of the Service Level obligations on Telecom for the delivery of the UCLL Service. It also provides for a penalty mechanism where Telecom fails to meet its Service Levels. The UCLL Service Level Terms are a schedule to the UCLL General Terms.

Tolerance Levels – Appendix 1

366. In the draft STD, the Commission accepted submissions from Access Seekers that many of the Tolerance Levels were too low, and that in some cases this could render the Service Level regime ineffective. Accordingly, the Commission raised many of the Tolerance Levels that were of concern to Access Seekers.

367. The Commission notes that one of the main concerns expressed by Access Seekers in relation to Service Level Terms at the UCLL conference was that of equivalence. There was general consensus among Access Seekers that the specific Tolerance Levels are not overly important, provided that there is equivalence of service with Telecom's retail business.

368. Access principle 3 requires Telecom to provide the service on terms and conditions that are consistent with those terms and conditions on which Telecom provides the service to itself. The Commission considers that access principle 3 will ensure that end users are subject to the same Service Levels, regardless of whether they are Telecom retail customers, or customers of one of the Access Seekers.

369. The Commission has also considered Telecom's argument that the increased Tolerance Levels in the draft STD would significantly increase its cost structures.¹¹⁷

370. For these reasons, in many cases the Commission has adopted the Tolerance Levels proposed by Telecom in its submissions and those agreed to at the UCLL conference.

Standard Lead-Times – Appendix 4

371. In the draft STD, the Commission accepted a submission from Vodafone/ihug that the standard lead-times should be reduced to two consecutive working days.¹¹⁸

¹¹⁷ Telecom, Submission on UCLL and Co-location Draft STD, 29 August 2007, para 128, p. 46

¹¹⁸ Vodafone/ihug, Submission on Telecom's UCLL and Co-location STP, 28 June 2007, p. 36

372. Telecom has submitted that provisioning of the UCLL service will invariably require a truck roll, and therefore lead-times are subject to Telecom's contracts with its service companies. These contracts provide for lead-times of:
- 6 Working Days for MPF Move Address and MPF New Connection Orders; and
 - 2 Working Days for MPF Transfer Orders¹¹⁹.
373. Telecom also noted that it is unsure as to the Commission's requirements for an Other Service to MPF Transfer Order. Telecom assumed that this was the equivalent of an MPF New Connection Order.¹²⁰ The Commission, however, considers that there is little difference between an Other Service to MPF Transfer Order and an MPF Transfer Order, and has accordingly treated these two Orders the same.
374. Telecom stated that it requires an extra Working Day to process the Orders and receive confirmation from the service company of the Orders. Therefore, Telecom submitted that the Commission should amend the standard lead-times to 7 Working Days and 3 Working Days, respectively¹²¹.
375. In addition, the Commission understands that there may have been some degree of confusion in relation to the standard lead-times put forward in the draft STD.
376. The standard lead-times in Appendix 4 were listed as "Standard Lead-Times to determine RFS date". However, this appeared to be at odds with the definition of Standard Lead-Time, which is "the time period that it will take Telecom to provision a Core UCLL Transaction Service".
377. The Commission considers that the standard lead-times in Appendix 4 should refer to lead times to provision the services, not lead times to determine RFS dates.
378. The Commission has amended the Standard Lead-Times listed in Appendix 4 to reflect Telecom's existing contracts with its service companies. In addition, the Commission has clarified any confusion as to whether the lead times refer to provisioning times or RFS dates.

Escalating Penalty Regime – Appendix 3

379. In the draft STD, the Commission acknowledged that an escalating penalty regime is necessary to avoid the situation where, once a Service Level Default has occurred, the extent of the default is irrelevant (a Service Level 'black hole'). The Commission invited submissions on an escalating penalty regime.

¹¹⁹ Telecom, Submission on UCLL and Co-location Draft STD, 29 August 2007, p. 51-52

¹²⁰ *ibid*, p. 52

¹²¹ *ibid*, p. 51-52

380. Telecom submitted that an escalating penalty regime is unnecessary; however, if required by the Commission, Telecom expressed a desire for such a regime to be simple and easy to administer¹²².
381. Telecom has proposed an escalating penalty regime where:
- the initial failure to meet the service level results in a 4% penalty rate;
 - for every day that the service level continues to not be met, the penalty rate increases by 1%; and
 - the penalty rate is subject to a 10% cap.¹²³
382. The Commission agrees that Telecom's proposed escalating penalty regime is simpler and easier to administer than the proposal in the draft STD. However, the Commission is concerned that in many instances, the regime suggested by Telecom would result in lower financial penalties than a flat penalty rate of 7% for the initial default (as per Telecom's STP).
383. Consequently, the Commission has adopted a variation of Telecom's proposal whereby the initial penalty rate is 7% and for every day the service level continues to not be met, the penalty rate increases by 1%. In addition, the cap of 10% proposed by Telecom has not been adopted as it could reintroduce a Service Level 'black hole'.

Fault Prioritisation – Appendix 1 Service Levels 14 and 15

384. In the draft STD, the Commission proposed a three-tiered fault prioritisation regime which was broadly based on the number of End Users impacted. Restoration times were dependent on whether the fault was in a metropolitan or rural area.
385. In response, Telecom submitted that the Commission's key prioritisation variables do not correspond to the prioritisation variables used in its existing fault prioritisation systems. Telecom also submitted that its prioritisation systems are largely automated, have been developed over a number of years, and are designed to best meet End User needs.¹²⁴
386. The Commission notes that there was agreement among Access Seekers at the UCLL and Co-location conferences that, provided there was equivalence in fault prioritisation, Telecom's existing fault prioritisation systems would be employed, and that Telecom would hold an industry workshop. The Commission has made the appropriate changes to the fault restoration Service Levels to reflect this.

¹²² Telecom, Submission on UCLL and Co-location Draft STD, 29 August 2007, para 202, p. 67

¹²³ *ibid*, para 205, p. 68

¹²⁴ *ibid*, Submission on UCLL and Co-location Draft STD, 29 August 2007, para 169, p. 62

Number Portability

387. In the draft STD, the Commission included a specific service level pertaining to the completion of Number Portability requests.
388. In its initial submission on the draft STD, Telecom argued that its obligations under the Local and Mobile Number Portability (LMNP) Terms exist independently of the UCLL Terms, and that it is impractical for different business units of Telecom (under operational separation) to undertake co-ordination of these different regulatory processes.¹²⁵
389. Telecom also noted several administrative consequences of including LMNP requirements in the UCLL Terms. For example, if the Commission changes its number portability determination it will need to consider if the UCLL Terms need to be changed as a consequence.¹²⁶
390. The Commission agrees with Telecom's submission and considers that, if necessary, Service Levels should be included in the Number Portability Determination rather than in the Standard Terms Determinations.

Access Seeker Forecasts – Section 5

391. At the UCLL conference, Telecom proposed a modified BAU forecasting regime for the UCLL Service. This new forecasting regime has been included in the UCLL Operations Manual and is discussed in more detail in paragraphs 398 to 402.
392. As a result, the Commission now considers that the consequences for Access Seekers failing to provide BAU Forecasts, or providing inaccurate BAU Forecasts, are adequately addressed in section 6 of the UCLL Operations Manual. Accordingly, the Commission has amended section 5 of the UCLL Service Level Terms to reflect this.

Performance Penalty Holiday – Clause 8.2

393. In the draft STD, Access Seekers were not entitled to claim any performance penalties for the 2 month period immediately following the Determination Date.
394. The Commission has sought to better align the payment of Service Level penalties to the stages set out in the Implementation Plan. The Commission has determined that there will be a performance penalty holiday for the period of the Soft Launch. Therefore, performance penalties will begin to apply after the period of 105 working days immediately following the Determination Date. Clause 8.2 has been amended to reflect this.

¹²⁵ Telecom, Submission on UCLL and Co-location Draft STD, 29 August 2007, p. 63

¹²⁶ *ibid*, para 181, p. 64

Performance Earnbacks

395. The Commission is of the view that performance penalties should provide, in themselves, an effective regime to encourage Telecom to meet the prescribed Service Levels.
396. The Commission maintains its preliminary view that performance earnbacks are not appropriate.

UCLL Operations Manual (Schedule 4)*Introduction*

397. The Operations Manual is part of the UCLL Terms and sets out the operational procedures for supply of the UCLL Service. The Operations Manual is a schedule to the General Terms.

Access Seeker Forecasting – Section 6

398. In the draft STD, the Commission accepted submissions from Orcon/CallPlus and Vodafone/ihug that forecasting on an exchange basis would be very difficult. These submissions suggested that forecasts should be provided on the basis of groups of exchanges managed by the same Telecom field force.
399. At the UCLL conference, Telecom proposed a modified BAU forecasting regime for the UCLL Service. This new forecasting regime is performed on an Exchange Cluster¹²⁷ basis and is less onerous on Access Seekers than previous Telecom proposals, yet still maintains safeguards for Telecom where Access Seeker forecasting is materially inaccurate.
400. The Commission considers that this modified regime addresses many of the Access Seekers' concerns in relation to the forecasting regime. However, an issue raised by Access Seekers at the UCLL conference was that where small volumes of Orders are forecasted, a slight variation in the actual number of Orders will equate to a relatively large inaccuracy (in percentage terms).
401. Telecom agreed with Access Seekers that a large forecasting inaccuracy (in percentage terms) in relation to a very small volume of Orders may have no impact on its ability to deliver UCLL services.¹²⁸

¹²⁷ The Exchange Clusters listed in Appendix G of the UCLL Operations Manual are those proposed by Telecom (including those consolidations proposed by Orcon that were agreed to by Telecom). Letter from Telecom (Chris Dyhrberg) to the Commission (Paul Armstrong), 19 October 2007, para 12.

¹²⁸ Chris Dyhrberg, UCLL and UCLL Co-location Conference transcript, 20 September 2007, p. 139

402. Consequently, the Commission has adopted Telecom's proposed wording, but has included an additional subclause 6.1.28(b) to state that the consequences for inaccurate forecasting (in respect of an Order Month) will not apply where the actual volume of Orders is less than 10.

Bulk Transfer Service Levels – Clauses 6.1.8 and 8.11.11

403. In their submissions, as well as at the UCLL conference, a number of the Access Seekers expressed a desire to see Service Levels apply to Bulk Transfer Orders.
404. Telecom submitted that Bulk Transfers are negotiated between Telecom and the gaining and losing Access Seekers, and that the standard Service Levels are therefore inappropriate.¹²⁹
405. Telecom further clarified its position at the UCLL conference by indicating that, due to the varying nature of bulk transfer orders, it is very difficult to set appropriate service levels.
406. Access Seekers agreed with Telecom that it would be very difficult to set generic Service Levels for Bulk Transfers because each Bulk Transfer Order is negotiated on a case by case basis. Accordingly, the Commission has determined that Bulk Transfers will not be subject to the Service Levels set out in the SLA. However, the Commission has amended clause 8.11.11 to require Telecom to use all reasonable endeavours to provision Bulk Transfers in a timely manner.

Number Portability – Clause 8.2.15

407. In the draft STD, the Commission accepted a number of amendments proposed by Vodafone/ihug to cover the porting of local numbers in conjunction with a UCLL request.
408. For the same reasons outlined in the paragraphs 387 to 390, the Commission agrees with Telecom that it is not appropriate to incorporate LMNP requirements into the UCLL Terms.
409. However, the Commission considers that the co-ordination of the UCLL and Number Portability services would be of considerable benefit to End Users. Therefore, the Commission has amended clause 8.2.15 of the UCLL Operations Manual to ensure that Telecom makes all reasonable endeavours to co-ordinate the porting of a number and the provisioning of the UCLL service for an End User.

¹²⁹ Telecom, Cross-submissions on UCLL and Co-location Draft STD, 12 September 2007, para 52, p. 11

Bulk Transfer Notice – Clause 8.11.3

410. The draft STD required Access Seekers to enter Bulk Transfer Orders of 100 lines or more into Telecom's online ordering and tracking system (OO&T) at least 20 Working Days before the first transfer is to occur. Similarly, Bulk Transfer Orders of less than 100 lines required a lead time of 10 Working Days.
411. Telecom submitted that:
- the same preparation work is required to schedule labour resource for any Bulk Transfer, regardless of the number of lines involved; and
 - Access Seekers may be incentivised to simply submit several Orders that each fall under the 100 line limit at the same time, instead of fewer Orders of more than 100 lines.¹³⁰
412. The Commission agrees with these submissions and has reinstated a notice period of 20 Working Days for all Bulk Transfer Orders.

OFM Unavailable – Clause 10.3.6

413. The draft STD required Telecom to advise Access Seekers immediately upon the online faults management system (OFM) becoming unavailable. Telecom has submitted that this is impractical and onerous, because in some cases Telecom will not be aware that OFM is unavailable until they are informed by an Access Seeker.¹³¹
414. Telecom proposed that the clause be redrafted so that Telecom must advise Access Seekers within 5 Business Hours upon becoming aware that OFM is unavailable.¹³²
415. In response, TelstraClear submits that 5 Business Hours is unacceptably long.¹³³
416. The Commission has considered the submissions from both TelstraClear and Telecom and has amended clause 10.3.6 to require Telecom to use all reasonable endeavours to advise Access Seekers immediately upon becoming aware that OFM is unavailable.

Emergency faults – Clause 10.3.21

417. In the draft STD, the Commission added a new subparagraph (c) requiring Telecom to schedule a callout when there is a mass outage that impacts on a

¹³⁰ Telecom, Submission on UCLL and Co-location Draft STD, 29 August 2007, p. 76

¹³¹ *ibid*, para 259, p. 76

¹³² *ibid*, para 261, p. 76

¹³³ TelstraClear, Cross-submission on UCLL and Co-location Draft STD, 12 September 2007, para 93, p. 25

significant number of customers. Telecom noted, however, that there was no definition of “mass outage” or “significant number”.

418. In its submission on the draft STD, Telecom proposed definitions of mass outage and significant number.¹³⁴
419. The Commission agrees that a definition of “significant number” is necessary so that Telecom will know when a mass outage has occurred. The Commission has included a definition of significant number as part of the relevant clause.
420. In addition, the Commission believes that it may not be immediately clear to Telecom exactly how many customers are impacted by such an outage. Accordingly, the Commission has amended subparagraph (c) to read “where there is a mass outage that has the potential to impact on 200 or more Customers across all Access Seekers, including Telecom”.

Investigating Interference – Clause 10.4.5

421. In the draft STD, the Commission accepted a submission from Orcon/CallPlus that if an Access Seeker requests to Telecom to investigate a situation where there is third party interference on a cable, the party causing the interference should pay for the investigation.
422. In response, Telecom submitted that this clause would be difficult to enforce if the third party causing the interference was not a party to the UCLL Terms.¹³⁵ The Commission agrees and has amended clause 10.4.5 so that in this situation the Third Party Interference Investigation Charge will apply to the Access Seeker who claimed there was interference.

Interference Management Plan (Schedule 5)

Introduction

423. It is the Commission’s view that an Interference Management Plan (‘IMP’) should seek to balance the relative needs of the end-users of the UCLL service, while promoting competition for the long-term benefit of end-users.
424. An IMP should also promote the use of the most efficient technologies providing the largest overall benefit to end-users of the UCLL service. Legacy technologies that are currently operating on the MPF to a small number of end-users should not be unnecessarily protected.

¹³⁴ Telecom, Submission on UCLL and Co-location Draft STD, 29 August 2007, para 264, p. 77

¹³⁵ *ibid*, para 266, p. 77

425. Accordingly, the Commission considers the following principles should form the basis for the IMP that operates in the New Zealand environment:
1. The IMP must be designed seeking to promote competition for the long-term benefit of end-users, recognizing their needs now and for the future;
 2. The most efficient technologies in the access market providing the largest overall benefit to end-users must be preferred over legacy technologies;
 3. It should be customized to account for the characteristics of the UCLL network existing in NZ.
 4. It must allow for the introduction of new technology, and there must be sufficient testing of that new technology to assess any impact on existing technologies operating over the UCLL.
426. Specifically, the Commission considers that the management of the interference of one technology on another in the cable must be designed to allow for choices of more efficient technologies, with the intention of promoting competition for the long-term benefits of end-users.

TCF agreement on issues raised in the draft STD

427. In its draft STD, the Commission provided high-level guidance to the TCF as to the outcomes it was seeking in the IMP. The Commission requested that the TCF assist the Commission by operationalising the Commission's high level decisions, and drafting appropriate amendments to the IMP during that period.¹³⁶
428. The TCF provided the Commission with a paper¹³⁷ detailing the level of agreement reached on the issues and the following table summarises the level of agreement reached.

¹³⁶ Draft UCLL STD, clause 429

¹³⁷ TCF paper "TCF IMP issues assessment", dated 19 October 2007

IMP issue identified in the draft STD	TCF outcome
Model used for the IMP	Telecom provided the IMP model to the TCF and a suitable controlled version will be released within three months of the date of this determination
Cable characteristics	Telecom provided the cable characteristics and these were accepted by the TCF
Symmetric versus asymmetric technologies <ul style="list-style-type: none"> • equal number of interferers • equal share of benefit 	The TCF reached unanimous agreement
Pair separation process between ADSL and HDB3 systems	The TCF did not reach unanimously agreement
Group A and Group B PSD masks	The TCF reached unanimous agreement
Clarification of Deployment State A and B	The TCF reached unanimous agreement
Voice Service Management Plan	The TCF reached unanimous agreement on the use of Telecom's PTC 200 specification
VDSL band plan 997 versus 998	The TCF did not reach unanimous agreement

429. The Commission accepts the agreements that were reached unanimously by the TCF. The remaining issues are discussed below.

Pair separation process between ADSL and HDB3 systems

430. In its paper, the TCF provided details of a process to be followed if an HDB3 system is present in the same binder group as the MPF proposed for a UCLL new connection. If an HDB3 system is present, the process proposes that the Access Seeker request Telecom to undertake various activities, such as lowering the power or changing the pair, and to pay for these activities.

431. This process does not reflect the IMP principles listed above, as the legacy HDB3 technology takes precedence over the newer and more efficient DSL technology.
432. The Commission considers that the process should contain the following steps and has updated the UCLL Operations Manual clause 8.2.13 accordingly:
- Telecom accepts a UCLL new connection request and, amongst other activities, identifies if an HDB3 system is present in the relevant binder;
 - If an HDB3 system is present, an alternative binder is sought for either the HDB3 system or the MPF, and the new connection is completed without the involvement of the Access Seeker;
 - If no other binder is available, Telecom replaces the HDB3 system with an alternative and more efficient technology;
 - If no alternative and more efficient technology is available or is not available immediately, Telecom will ask the Access Seeker to agree to a power reduction for their customer and, as soon as reasonably practicable, replaces the relevant HDB3 system.
433. The Access Seeker is not required to pay for the additional work undertaken by Telecom in the above process steps.

VDSL band plan 997 versus 998

434. In the draft STD, the Commission's preliminary view was that the VDSL2 band plan 997 should be adopted. The TCF were requested to consider this issue further and provide a recommendation to the Commission.
435. The choice of band plan determines the degree of symmetry of line speeds available in the upstream and downstream directions, and therefore the types of services which can optimally be offered over VDSL2 connections. Both band plans are asymmetric, however the 997 band plan is more symmetric than 998.
436. The Commission understand that, to date, the UK and Norway have adopted 997, North America and the many of the European jurisdictions have adopted 998, and Sweden and France have yet to make a decision. Australia has also adopted plan 998.
437. The two band plans are spectrally incompatible if deployed on the same cable.
438. The choice of band plan is very dependent on the types of broadband services that will predominate in the future. Teleworking, videoconferencing and other business grade services benefit from symmetry in the line speed of the upstream and down stream directions. HDTV benefits from a higher downstream speed.
439. The TCF did not reach unanimous agreement. The band plan preferred by each party is shown below.

	Band plan supported
Vodafone/ihug	997
Orcon	997
CallPlus	997
Telecom	998
TelstraClear	Undecided

440. Vodafone/ihug submitted that incumbent operators traditionally prefer 998 because it is less likely to cannibalise their symmetric business revenues. Affordable options for symmetric broadband services would be of most use to small to medium size enterprises ('SME') and, given the very high proportion of SMEs in New Zealand, this is a significant market segment for VDSL2 based services. Further, VDSL2 is able to provide these symmetric services more efficiently than the current SHDSL technology.
441. Vodafone/ihug also submitted that 998 has been chosen in North America and most western European countries where there are competing cable TV operators, to counter the threat of cable TV encroaching into the telecommunications market. However Vodafone/ihug state that both 997 and 998 can provide HDTV, and 998 does not provide any significant advantages. There are also other HDTV options such as satellite and terrestrial broadcasting.
442. Orcon submitted that 997 will provide adequate HDTV services and will also provide more options for end-users demanding symmetric services.
443. Telecom submitted that it is easier to envisage applications that would make use of all available downstream speed than upstream speed, and therefore supports 998. Telecom considers that fibre in the local loop offers a realistic alternative for business customers requiring symmetrical services whereas this is not the case for residential customers who will benefit from the higher downstream speed. The Commission considers that, while business customers in the central business districts will benefit from fibre cable in the local loop, the large number of SME customers will still be dependent on copper cable.
444. Telecom also submitted that the cost of a 997 modem or residential gateway could be higher and that there could be less choice because of an expected lower demand. The Commission understands that, based on modem experience so far, devices will have both 997 and 998 capability and potentially ADSL2+ as well. If a change is required between 997 and 998, this could be achieved by a software change rather than a hardware change. The Commission considers that the possibility that devices will only have the 998 capability, is very unlikely.
445. The critical issue raised by parties is the role of telecommunications networks in the future and whether the delivery of HDTV will predominate over

videoconferencing and teleworking. The Commission considers that the parties have not provided any compelling evidence that would change its preliminary view which favours symmetric services such as videoconferencing and teleworking over services which are more asymmetric. In reaching this decision, the Commission has taken into account the promotion of competition in telecommunications markets and the long-term benefit of end-users of telecommunications services.

446. Accordingly, the Commission has maintained its preliminary view that the New Zealand IMP should include the VDSL2 band plan 997 and that Telecom must complete this inclusion by 30 June 2008, or sooner in practicable. The Commission requests that the Access Seekers and the TCF work with Telecom to achieve this date.

Revision of the IMP

447. Telecom has offered to update the IMP contained in the draft STD by 12 December 2007 to reflect the changes determined in this final STD.¹³⁸ The Commission has revised the IMP proposed by Telecom to a "provisional" level and the document is complete apart from some benchmark calculations. This is attached in Appendix A as Schedule 5.
448. Accordingly, Telecom is required to complete the revised IMP such that it complies with the requirements of this final STD, by 12 December 2007.

¹³⁸ TCF IMP Issues Assessment paper, 19 October 2007, para 2, page 3

IMPLEMENTATION PLAN

Introduction

449. The Implementation Plan covers the initial roll-out of Co-location services immediately after the release of the UCLL and Co-location STDs. It sets out the pre-requisites, timeline, prioritisation process for selection of initial exchanges, the number of exchanges that should form the Soft Launch, and a range of Key Performance Indicators (KPIs).
450. The Commission has considered all submissions received during the consultation process, in formulating the Implementation Plan.

Initial Notice of cabinetisation

451. In the draft UCLL STD, the Commission specified that, 10 working days after the determination date, Telecom would be required to provide Access Seekers with the Initial Notice of cabinetisation. The Commission set the period of notice consistent with clause 5.2 of the draft UCLL Operations Manual.
452. Following the draft STD, Telecom agreed that 10 working days after the determination date was a reasonable period to supply the Initial Notice,¹³⁹ on the basis that there is a process for preliminary orders for co-location to be placed, with firm orders then placed 40 working days after the determination date. Telecom also accepted that the 24 month timeframe was appropriate and consistent with the terms agreed at the TCF.
453. The Commission has considered the views received through the consultation process, and has retained the forecast period and timing as set out in the draft UCLL STD. However, following discussions at the Conference, the Commission has determined that the cabinetisation forecast will be an initial notice. Accordingly, 10 working days after the determination date Telecom must provide an Initial Notice of cabinetisation that sets out:
- its plans for cabinetisation on a per Exchange basis;
 - the suburbs affected and the number or percentage of MPFs in such Exchanges that will be affected;
 - an indication of which MPFs in that Exchange may be affected;
- and

¹³⁹ Telecom, Cross-submission on UCLL and Co-location Draft STD, page 7.

- in each case, the planned dates for cessation of supply of the UCLL Service (or part of the UCLL Service) and for cabinetisation.

Timeframe for placement of Co-location orders

454. Telecom provided a revised set of key milestones and actions table as part of its submission on the draft STD.¹⁴⁰ It included a revised timeline and new actions for placement of co-location orders. Telecom proposed that Access Seekers place preliminary co-location orders 20 working days after the Determination Date. Telecom submitted that this would allow it to compile the prioritised list of exchanges based on preliminary orders received.
455. Telecom submitted that Access Seekers should then place firm orders for Co-location 40 working days after the Determination Date. Between placement of preliminary and firm orders, Telecom will supply the Soft Launch plan to the Commission.
456. Telecom has proposed that the Soft Launch commence immediately on the due date for firm orders for co-location.¹⁴¹
457. The Commission has considered the requirements of Access Seekers and Telecom for providing orders for co-location. The proposed timing for preliminary and firm co-location orders provides the Access Seekers with sufficient time to consider the impact of the Initial Notice, and provides Telecom with sufficient time to develop a list of exchanges to commence the Soft Launch.
458. Accordingly, the Commission has adopted these timeframes for placement of co-location orders.

Brown out period

459. Telecom requested that the Implementation Plan be amended to include a ‘stop the clock’ measure.¹⁴² Telecom submitted that this requirement is needed to account for restrictions on availability for build and design work.
460. The Co-location Operations Manual specifies that when the quote is supplied after the preliminary co-location order (10 working days after order), that quote provides the timeframes on which co-location will occur. The Commission expects that any such timeframe will include a brown-out period, and as such this does not need to form part of the Implementation Plan.

¹⁴⁰ Telecom, Submission on UCLL and Co-location Draft STD, 29 August 2007, page 7

¹⁴¹ Telecom, Submission on the Draft UCLL and Co-location Implementation Plan, 29 August 2007, paras 326-328.

¹⁴² Telecom, Submission on the Draft UCLL and Co-location STD, 29 August 2007, para 328.

461. Accordingly, the Commission has not included an explicit reference to the brown out period.

Number of exchanges completed by end of the Soft Launch

462. In the draft STD, the Commission's preliminary view was that co-location is to be implemented in 15 exchanges for the purposes of the Soft Launch.
463. Telecom requested that the Commission build some flexibility into the lead-times for different types of builds, and the number of exchanges that would have services rolled out during the Soft Launch.¹⁴³ In addition, Telecom expressed concern that exchanges with longer projected build times would create difficulties in meeting the Soft Launch KPIs.
464. In their submissions on the draft UCLL and Co-location STDs, Orcon/Kordia/CallPlus, TelstraClear, and Vodafone strongly supported the Commission's revised roll out timeline.
465. However, while supporting the Commission's proposed timelines, TelstraClear noted the difficulty of specifying in advance, the lead-time for particular exchanges, and hence complete co-location in a given number of exchanges in a quarterly period.
466. At the UCLL and Co-location conferences, the main issue discussed was the prioritisation process for selecting exchanges for the Soft Launch, and the selection of exchanges thereafter.
467. The Access Seekers requested more flexibility around the delivery times for co-location builds during and after the Soft Launch. Their preference was to have the highest priority exchanges built, regardless of the build times. If necessary, they were willing to reduce the overall number of exchanges to achieve this goal.
468. Accordingly, the Commission has specified the number of exchanges required as part of the Soft Launch, and has provided scope for Access Seekers to agree timeframes and selection of exchanges to better meet their needs.

Process for increasing space in an exchange

469. Vodafone/ihug's reiterated their request for a process for the increase of space in situations where space is constrained.
470. The Commission has considered the value of an additional quotation process other than that proposed in the Operations Manual. The quotation process in the

¹⁴³ Telecom, Submission on the Draft UCLL and Co-location Implementation Plan, 29 August 2007, paras 307-313.

Operations Manual should include the need for any additional space requirements of initial builds occurring at exchanges, and have considered existing demand for those exchanges.

471. Accordingly, the Commission has not included any additional processes for increasing space. These would be dealt with through the usual quotation process as outlined in the Operations Manual.

Build timeframes

472. In the draft STD, the Commission adopted estimated timeframes that were intended to provide a timely roll-out of co-location services.
473. Telecom submitted that the estimated timeframes should be aligned to the point when an Access Seeker requires the co-location service to be implemented at an exchange.¹⁴⁴ Telecom also submitted that the proposed build times for more complex builds are often determined by lead times for key inputs, which may stretch the timeframe for the build past the Commission's estimated build times.
474. During the UCLL and Co-location conferences, there was discussion on build times placed in Telecom quotes (received after the preliminary order), and the ability for Access Seekers to agree build times with Telecom on a multilateral basis. Access Seekers requested the ability to agree timeframes for build times that were outside the indicative build times as in the Commission's draft UCLL and Co-Location STDs.
475. The Commission has considered how to best specify estimated build timeframes that provide sufficient incentive on Telecom to have timely builds, while balancing the requirements and needs of Access Seekers.
476. Accordingly, the Commission has amended the requirement for the placement of Firm Orders. This clause now allows for the quotation of time periods outside the estimated build times, where agreed with Access Seekers.

MPF orders during the Soft Launch

477. In the draft STD, the Commission removed reference to the number of MPF orders completed during the Soft Launch.
478. Telecom submits that there should be an option to manage the volume of MPF orders during the Soft Launch.¹⁴⁵

¹⁴⁴ Telecom, Submission on the Draft UCLL and Co-Location STD, 29 August 2007, paras 350-354.

¹⁴⁵ Telecom, Submission on the Draft UCLL and Co-location STD, 29 August 2007, para 314-344.

479. The Commission recognises the purpose of the Soft Launch is to test the operational systems involved including billing, provisioning, transfers, and other associated functions. The need to have sufficiently high volumes must be reconciled with the need for operational certainty. Accordingly, while there is no limit on the number of MPF orders during the Soft Launch, the Commission has amended the Implementation Plan to allow Access Seekers to agree any alternative approach with Telecom.

Key performance indicators

480. In the draft STD, the Commission increased the number of exchanges to meet the KPIs for the Soft Launch to 15, and for Phase Two of the Implementation Plan to 15 exchanges per quarter.
481. These KPIs have been retained, and the Commission has also inserted a mechanism where Telecom may request approval from the Commission for a lesser number of exchanges during the Soft Launch, and thereafter.

Application of Service Level Terms during the Soft Launch

482. The Commission has considered how best to retain the incentives of Telecom to ensure a timely roll out of services, with the need to ensure certainty around the service levels that Access Seekers receive during the Soft Launch.
483. Accordingly, the UCLL and Co-location Service Level Terms will apply from the Determination date but the Performance Penalties relating to the service levels will apply only after the Soft Launch has been completed.

DATED this 7th day of November 2007



Dr Ross Patterson
Telecommunications Commissioner

APPENDIX A: UCLL TERMS

Appendix A comprises the following documents:

UCLL General Terms

Schedule 1: UCLL Service Description

Schedule 2: UCLL Price List

Schedule 3: UCLL Service Level Terms

Schedule 4: UCLL Operations Manual

Schedule 5: Interference Management Plan

Implementation Plan

APPENDIX B: DETERMINING URBAN AND NON-URBAN EXCHANGES

Overview

484. Setting geographic pricing for the UCLL service through benchmarking requires a specific benchmarking approach. Only the US, Canada and Australia have such a geographic pricing structure, and they do not adopt standardised zoning systems. This does not facilitate an easy comparison between countries and limits the level of granularity that can be achieved in a benchmarking context.
485. In the draft STD, the Commission adopted a meshblock approach. Telecom submitted that this approach did not align with its network and suggested the use of the Exchange Service Area (“ESA”). For the purposes of this UCLL STD, the Commission has determined that the ESA is the appropriate unit of aggregation for a geographic pricing structure. An ESA is the geographic area served by a Telecom local exchange. Typically a free calling area is made up of multiple ESAs.
486. Each ESA has been classified as being either “urban” or “non-urban” based on the Statistics New Zealand (“SNZ”) “main urban areas” meshblock classification. Those ESAs which comprise more than 50% of households with access to a PSTN phone in main urban area meshblocks, have been classified as “urban”. The remaining ESAs are classified as “non-urban”.

Statistics New Zealand classification

Meshblocks

487. “Meshblocks” are the underlying geographic unit of aggregation used by SNZ in the process of collecting and processing statistical data. SNZ define a meshblock as:
-the smallest geographic unit for which statistical data is collected by Statistics New Zealand. Meshblocks vary in size from part of a city block to large areas of rural land. Each meshblock abuts another to cover all of New Zealand, extending out to the 200-mile economic zone (approximately 320 kilometres). Meshblocks aggregate to build larger geographic areas, such as area units, territorial authorities, and regional councils.¹⁴⁶
488. Where practicable, meshblocks align with the physical characteristics of the relevant land area, such as road patterns and rivers. As SNZ note, however, there

¹⁴⁶ Statistics New Zealand, *Geographic definitions*, <http://www.stats.govt.nz/census/2006-census-information-about-data/2006-definitions-questions/definitions/geographic-definitions.htm>

is an increasing tendency towards aligning meshblock boundaries to legally defined cadastral boundaries.¹⁴⁷

Defining urban and rural New Zealand

489. SNZ broadly classifies areas as urban or rural based on a number of characteristics including population size and dependence on other areas. There is a hierarchical subdivision of “urban areas” into:

- main urban areas;
- satellite urban communities; or
- independent urban communities.

490. SNZ has classified main urban areas on the basis that:

Main urban areas are very large urban areas centred on a city or major urban centre. Main urban areas have a minimum population of 30,000.¹⁴⁸

Satellite urban communities and independent urban communities are defined based on the proximity to, and dependence on, main urban areas.

491. Similarly, “rural areas” are classified as either a:

- rural area with high urban influence;
- rural area with moderate urban influence;
- rural area with low urban influence; or
- highly rural/remote area.

492. In the 2001 census, SNZ classified each meshblock as being one of the above seven categories.

The Commission’s classification

493. The Commission considers that areas with a relatively high number of households with telephone services per square km will be relatively low cost on the basis that costs for fixed wire telecommunications are largely determined by distance dependent structural costs. Areas with a higher services per square km would be expected to have lower structural cost per telephone service simply because the service delivery points are closer together, requiring less infrastructure per telephone service.

494. The Commission considers that New Zealand areas classified by SNZ as “main urban areas” have a relatively high services per square km and, therefore, are

¹⁴⁷ Statistics New Zealand, *Meshblock 2006*, <http://www.stats.govt.nz/statistical-methods/classifications/Meshblock+2006.htm>

¹⁴⁸ Statistics New Zealand, *Geographic definitions*, <http://www.stats.govt.nz/census/2006-census-information-about-data/2006-definitions-questionnaires/definitions/geographic-definitions.htm>

likely to be relatively low cost. For the purpose of this UCLL STD, the Commission has classified “main urban areas” as urban.

495. The remainder of the areas have a cost structure that does not benefit from the expected economies of scale achieved in the “main urban areas” and the Commission has classified these as non-urban. Those areas classified by SNZ as “satellite urban communities”, “independent urban communities” and “rural areas” have been classed as non-urban.

Classification of urban and non-urban ESAs

496. Each telephone exchange has an associated customer catchment area. This is referred to as an ESA. Each ESA is made up of a number of meshblocks, although ESA boundaries do not directly correspond to meshblock boundaries. As indicated above, the Commission has classified meshblocks in ‘main urban areas’ as urban, and all remaining meshblocks as non-urban.
497. In classifying each ESA as either urban or non-urban, each meshblock or a portion of each meshblock has to be assigned to an ESA. This assignment was advised by Telecom and is based on the proportion of Telecom customers in a meshblock that are located within the relevant ESA.
498. This weighting has been applied to data from SNZ on the total number of households with access to PSTN lines (“Lines”) in each meshblock. If the majority (i.e. greater than 50%) of Lines in a given ESA are classified as urban, then that whole ESA has been classified as urban.
499. The percentage of urban lines in the ESA boundary model is slightly higher than under the meshblock model as shown below¹⁴⁹. It was generally agreed at the UCLL conference that the use of ESAs rather than meshblocks, as proposed in the draft STD, essentially retained the same percentage of urban and non-urban areas as set out in the draft STD, and that the difference was immaterial.

	Percentage of households with phones using mesh blocks	Percentage of households with phones using ESAs
Urban	72.8%	73.5%
Non-urban	27.2%	26.5%

¹⁴⁹ This table was presented by Telecom to the UCLL conference and confirmed in a letter to Ross Patterson from Telecom (Shelley Grey), 5 October 2007

Urban Exchange Service Areas

The following ESAs have been assessed by the Commission as being urban for the purposes of calculating the monthly UCLL rental price. All other exchanges are non-urban.

Exchange Alpha Code	Exchange Name
Auckland Central	
AKCEN	AK CENTRAL BUSINESS DISTRICT AT and MDR
ELL	ELLERSLIE
GDW	GLENDOWIE
MOD	MT EDEN
ON	ONEHUNGA
POY	PONSONBY
RUE	REMUERA
SHB	ST HELIERS BAY
TMK	TAMAKI
Auckland North	
ALY	ALBANY
BD	BIRKENHEAD
BKL	BIRKDALE
BSY	BROWNS BAY
DA	DEVONPORT
FOR	FORREST HILL
GLF	GLENFIELD
GNH	GREENHITHE
TBY	TORBAY
TNA	TAKAPUNA
Auckland South	
BEA	BEACHLANDS
ETM	EAST TAMAKI
HCK	HOWICK
MKY	MANUKAU CITY
MNR	MANUREWA
MRE	MANGERE
MWN	MOUNT WELLINGTON
OAA	OTARA
OH	OTAHUHU
PAK	PAPAKURA
PGA	PAKURANGA
POP	PAPATOETOE
RCM	RUNCIMAN
WHD	WHITFORD
Auckland West	
AVD	AVONDALE
BHB	BLOCKHOUSE BAY
GLE	GLEN EDEN
HSN	HENDERSON
KME	KUMEU
MAB	MT ALBERT
MSY	MASSEY
MTL	MT ROSKILL
NLN	NEW LYNN
TAT	TE ATATU
TGN	TITIRANGI
TIS	THREE KINGS
WAK	WAITAKERE

Exchange Alpha Code	Exchange Name
WEI	WHENUAPAI
WUA	WAIATARUA
Christchurch	
AVO	AVONHEAD
BEL	BELFAST
BKM	BECKENHAM
BUR	BURWOOD
CH	CHRISTCHURCH
CHA	CHRISTCHURCH AIRPORT
CTP	CANTURBURY TECH PARK
DHB	DIAMOND HARBOUR
FDN	FENDALTON
GOV	GOVERNORS BAY
HRD	HAREWOOD
HSL	HALSWELL
HTN	HILLMORTON
ISL	ISLINGTON
KI	KAIAPOI
LIN	LINWOOD
LYT	LYTTELTON
MDX	MIDDLETON
MMA	MEMORIAL AVENUE
MPL	MT PLEASANT
NBO	NEW BRIGHTON
PUI	PAPANUI
RIC	RICCARTON
SPE	SPENCERVILLE
SR	SHIRLEY
STL	ST ALBANS
SUM	SUMNER
Dunedin	
ABB	ANDERSONS BAY
BGN	BRIGHTON
CTE	CORSTORPHINE
DN	DUNEDIN
GID	GREEN ISLAND
HFB	HALFWAY BUSH
LEI	LEITH VALLEY
MBB	MACANDREW BAY
MHL	MAORI HILL
MNG	MORNINGTON
MSI	MOSGIEL
NVY	NORTH EAST VALLEY
PBO	PORTOBELLO
PC	PORT CHALMERS
RSB	RAVENSBOURNE
SOD	SOUTH DUNEDIN
Gisborne	
GS	GISBORNE
LYN	LYTTON WEST
Hamilton	
BYM	BRYMER
CB	CAMBRIDGE
CLE	CLAUDELANDS
EUR	EUREKA
FGF	FLAGSTAFF
FJN	FRANKTON
GOR	GORDONTON
HN	HAMILTON
HNE	HAMILTON EAST
HOT	HOROTIU

Exchange Alpha Code	Exchange Name
HSD	HORSHAM DOWNS
MTG	MATANGI
MVE	MELVILLE
NHI	NGAHINAPOURI
NT	NGARUAWAHIA
OHP	OHAUPO
TKW	TE KOWHAI
TPI	TAUPIRI
TRV	TE RAPA
TWE	TAUWHARE
WHW	WHATAWHATA
Hibiscus Coast	
HBC	HIBISCUS COAST
RDB	RED BEACH
Invercargill	
IN	INVERCARGILL
INE	INVERCARGILL EAST
OTR	OTATARA
STI	SOUTH INVERCARGILL
WKW	WAIKIWI
Hawkes Bay	
BV	BAY VIEW
CE	CLIVE
FME	FLAXMERE
HBN	HASTINGS
HMN	HAUMOANA
HVN	HAVELOCK NORTH
MAW	MAREWA
NA	NAPIER
TDL	TARADALE
Nelson	
AWI	ATAWHAI
NN	NELSON
RD	RICHMOND
STK	STOKE
TTR	TAHUNANUI
New Plymouth	
BBK	BELL BLOCK
FLH	FRANKLEIGH PARK
NU	NEW PLYMOUTH
OKR	OAKURA
SWO	SPOTSWOOD
Palmerston North	
AH	ASHHURST
BUN	BUNNYTHORPE
CVE	CLOVERLEA
JFK	JOHN F KENNEDY DRIVE
KGR	KELVIN GROVE
LTN	LINTON
MXL	MAXWELLS LINE
PM	PALMERSTON NORTH
TRF	TURITEA
Paraparaumu	
PAE	PAEKAKARIKI
PRM	PARAPARAUMU
RAM	RAUMATI SOUTH
WAE	WAIKANAE
Rotorua	
LYE	LYNMORE
NOA	NGONGOTAHA
RO	ROTORUA

Exchange Alpha Code	Exchange Name
Tauranga	
BHE	BETHLEHEM
MMN	MT MAUNGANUI
MPU	MAUNGATAPU
OMO	OMOKOROA
OTE	OTUMOETAI
PCV	PACIFIC VIEW
PMA	PAPAMOA
TG	TAURANGA
TRG	TE RANGA
WBY	WELCOME BAY
Te Awamutu	
TAW	TE AWAMUTU
Wanganui	
GV	GONVILLE
WG	WANGANUI
WGE	WANGANUI EAST
WGL	WANGANUI GIRLS COL
Wellington	
ATN	ALICETOWN
BMT	BELMONT
CPC	COURTENAY PLACE
EE	EASTBOURNE
HTI	HATAITAI
IBY	ISLAND BAY
JV	JOHNSONVILLE
KIL	KILBIRNIE
KLB	KELBURN
KNH	KHANDALLAH
KRI	KARORI
LHT	LOWER HUTT
MIR	MIRAMAR
NAE	NAENAE
PKB	PUKERUA BAY
PLM	PLIMMERTON
PRO	PORIRUA
PTN	PETONE
SV	STOKES VALLEY
TIB	TITAHI BAY
TWA	TAWA
UP	UPPER HUTT
UPN	UPPER HUTT NORTH
WN	WELLINGTON
WOA	WAINUIOMATA
WTB	WHITBY
WTH	WELLINGTON SOUTH
WTN	WAITANGIRUA
Whangarei	
HG	HIKURANGI
KAM	KAMO
KNG	KENSINGTON
ORH	ONERAHI
WR	WHANGAREI