

Unbundled Bitstream Access Service Price Review

Draft Determination to amend the price payable for the regulated service Chorus' unbundled bitstream access made under s 30R of the Telecommunications Act 2001

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The review of the UBA is required by legislation. This review is unusual in that the Commission is required to implement a change of methodology—from a retail-minus to a cost-based pricing approach. This change in methodology makes the ultimate outcome more uncertain than reviewing prices using an unchanged approach.

This decision is a draft and we remain open to changing our view in light of submissions and new information provided by industry during our consultation processes. We anticipate a significant number of submissions on this matter because of the change in approach.

When we set these prices, we are required to do so by benchmarking against regulated prices in comparable countries that use a forward-looking cost-based methodology. If any party is dissatisfied with our final decision using the benchmarking approach, they can require that we calculate the price instead using a full forward-looking costing model. Given how far there is to go in this process, the uncertainties in benchmarking, and misunderstandings that were apparent following our last release of a draft determination, we consider it important that it be recognised that what we are releasing is a preliminary view.

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Executive summary

1. This document sets out the Commission's draft determination regarding the price payable for Chorus' unbundled bitstream access (UBA) regulated service.
2. The views expressed in this draft determination are the Commission's current views and are subject to further consultation in accordance with section 30R of the Telecommunications Act 2001 (Act).
3. This price review is required by s 77 of the Telecommunications (TSO, Broadband, and Other Matters) Amendment Act 2011 (Amendment Act). The review is limited to making the amendments necessary to implement changes to the initial pricing principle (IPP) made by the Amendment Act. The Amendment Act changed the IPP from a retail-minus based price to a forward-looking cost-based price.
4. In this review the Commission must determine a cost-based price for the UBA services to apply from 1 December 2014 in accordance with the amended initial pricing principle. The new initial pricing principle states that this price must be determined as follows:¹

The price for the designated access service entitled Chorus's unbundled copper local loop network, plus benchmarking additional costs incurred in providing the unbundled bitstream access service against prices in comparable countries that use a forward-looking cost-based pricing method

5. In particular, the Commission must determine the costs, additional to the unbundled copper local loop (UCLL) costs, of providing the UBA service. The price for UBA will therefore be the price for UCLL plus the additional costs incurred in providing the UBA service. The UCLL price was updated on 3 December 2012.²
6. The Act requires the Commission to set the regulated UBA price using a benchmark of international regulated prices in comparable countries.
7. The new IPP explicitly requires the Commission to include countries using a forward-looking, cost-based pricing methodology. The countries included in the benchmark must be comparable to New Zealand, meaning that the expected costs of providing bitstream services are similar to those in New Zealand.
8. Following this approach, the Commission has found two countries that meet the criteria within the IPP framework, Sweden and Denmark.
9. We have determined the forward-looking, cost-based price for the additional costs of providing the Basic UBA (BUBA) service, by selecting the mean price point of the benchmark set.

¹ Schedule 1 of the Telecommunications Act 2001, Chorus's unbundled bitstream access, Initial pricing principle applicable after the expiry of 3 years from separation day.

² *Final determination on the benchmarking review for the unbundled copper local loop service* (Commerce Commission, Decision NZCC 37, 3 December 2012).

10. The price premiums for the Enhanced UBA (EUBA) variants have been calculated using the prices of premium services in Sweden. The variants for EUBA include EUBA40, EUBA90 and EUBA180.
11. Table 1 shows the total monthly price (ie UCLL, plus the additional costs incurred in providing the UBA service) for the UBA services (BUBA and EUBA services).

Table 1: Monthly cost-based prices for the UBA services (NZ\$) effective 1 December 2014

UBA service	UCLL	Additional costs	Total monthly price
BUBA (and EUBA0)	23.52	8.93	32.45
EUBA40	23.52	9.35	32.87
EUBA90	23.52	9.88	33.40
EUBA180	23.52	10.84	34.36

12. The Commissions preliminary view is that selecting the mean price point is consistent with s 18. In reaching this view, we considered a number of issues as part of our overall assessment of long-term benefit for end-users, including:
- 12.1 the relativity between the prices of the UBA and UCLL services and the implications for investment in these services;
 - 12.2 whether there are asymmetric economic costs in setting the UBA price too high or too low; and
 - 12.3 the likely impact on incentives to invest in broadband services, whether over copper or fibre, and the effects on end-users.
13. The Commission has also calculated new core service charges. These are presented in Table 2 below.

Table 2: Core charges (NZ\$) effective 1 December 2014

Service	Cost-based Charge (\$)
New service connection (assisted)	174.02
Transfer between services (no port change)	15.17
Transfer between services (port change)	74.60

Introduction

Purpose

14. This draft determination sets out the updated prices for Chorus' unbundled bitstream access standard terms determination (Commerce Commission decision 611, 12 December 2007) (the **UBA STD**). The new forward-looking cost-based prices set by this review will come into effect on 1 December 2014.
15. The price review is required by s 77 of the Telecommunications (TSO, Broadband, and Other Matters) Amendment Act 2011 (**Amendment Act**), and is limited to making only those changes necessary to implement the new forward-looking cost-based initial pricing principle for Chorus' unbundled bitstream access service (**UBA**).

Background

16. This draft determination sets out the proposed monthly rental charges for Basic UBA (**BUBA**), the three Enhanced UBA variants (**EUBA**), and the core charges for the UBA service. The prices set in this review are forward-looking cost-based prices, as required by the Amendment Act. The prices set using this methodology will replace the current retail-minus based prices on 1 December 2014.
17. The Commission issued a discussion paper on its proposed approach to benchmarking the UBA price. Submissions received on that discussion paper have informed the Commission's draft determination. The discussion paper and related submissions are available at: <http://www.comcom.govt.nz/uba-benchmarking-review/>.
18. The views expressed in this draft determination are the Commission's current views and are subject to further consultation in accordance with section 30R of the Telecommunications Act 2001 (**Act**).

Consultation

19. The Commission invites submissions on this draft determination by **1 February 2013**. Cross-submissions will be due by **22 February 2013**.
20. Submissions and cross-submissions should be sent by email to the following address: telco@comcom.govt.nz, including in the subject header "UBA price review".
21. If the Commission decides to hold a conference, it will be held in Wellington on **27 and 28 March 2013**.

Statutory Framework

Service description

22. This draft determination relates to the designated access service *Chorus's unbundled bitstream access* as set out in Subpart 1 of Part 2 of Schedule 1 to the Telecommunications Act 2001 (**Act**):

Chorus's unbundled bitstream access

Description of service: A digital subscriber line enabled service (and its associated functions, including the associated functions of operational support systems) that enables access to, and interconnection with, that part of a fixed PDN that connects the end-user's building (or, where relevant, the building's distribution frame) to a first data switch (or equivalent facility), other than a digital subscriber line access multiplexer (**DSLAM**)

To avoid doubt, unless otherwise requested by the access seeker, the supply of this service must not be conditional on a requirement that the access seeker, end-users, or any other person must purchase any other service from the access provider

Conditions: That either—

(a) Chorus faces limited, or is likely to face lessened, competition in a relevant market; or

(b) Chorus does not face limited, or is not likely to face lessened, competition in a relevant market, and the Commission has decided to require Chorus's unbundled bitstream access to be wholesaled in that market

Access provider: Chorus

Access seeker: A service provider who seeks access to the service

Access principles: The standard access principles set out in clause 5

Limits on access principles: The limits set out in clause 6 and the additional limit that Chorus is only required to provide access to the trunk side of the first data switch or equivalent facility (for which purpose a DSLAM is not an equivalent facility)

Initial pricing principle applicable before the expiry of 3 years from separation day: Retail price (as imputed by the Commission, having regard to the price of any other digital subscriber line enabled service, including the imputed price of any such service offered as part of a bundle of retail services) minus a discount benchmarked against discounts in comparable countries that apply retail price minus avoided costs saved pricing in respect of the service

Plus, if no person is also purchasing a local access and calling service from Telecom in relation to the relevant subscriber line, all or any of the costs of Chorus's local loop network that would usually be recovered by

Telecom from an end-user of its local access and calling service, as determined by benchmarking against comparable countries (unless the Commission considers that the price already takes into account all of the relevant costs)

Initial pricing principle applicable after the expiry of 3 years from separation day: The price for the designated access service entitled Chorus's unbundled copper local loop network plus benchmarking additional costs incurred in providing the unbundled bitstream access service against prices in comparable countries that use a forward-looking cost-based pricing method

Final pricing principle applicable before the expiry of 3 years from separation day: Either—
 (a) retail price (as imputed by the Commission, having regard to the price of any other digital subscriber line enabled service, including the imputed price of any such service offered as part of a bundle of retail services) minus a discount comprising avoided costs saved, in a case where Chorus faces limited, or is likely to face lessened, competition in a relevant market; or

(b) retail price (as imputed by the Commission, having regard to the price of any other digital subscriber line enabled service, including the imputed price of any such service offered as part of a bundle of retail services) minus a discount comprising actual costs saved, in a case where Chorus does not face limited, or lessened, competition in a relevant market

Plus, in either case, if no person is also purchasing a local access and calling service from Telecom in relation to the relevant subscriber line, all or any of the costs of Chorus's local loop network that would usually be recovered by Telecom from an end-user of its local access and calling service, as determined by identifying the relevant costs (unless the Commission considers that the price already takes into account all of the relevant costs)

Final pricing principle applicable after the expiry of 3 years from separation day: The price for Chorus's unbundled copper local loop network plus TSLRIC of additional costs incurred in providing the unbundled bitstream access service

Requirement referred to in section 45 or final pricing principle: Nil

Additional matters that must be considered regarding application of section 18: The Commission must consider relativity between this service and Chorus's unbundled copper local loop network service (to the extent that terms and conditions have been determined for that service)

Determination framework

23. On 26 July 2012, the Commission commenced a review of the standard terms determination for the regulated service *Chorus' unbundled bitstream access (UBA STD)*³. The review is required by s 77 of the Telecommunications (TSO, Broadband, and Other Matters) Amendment Act 2011 (**Amendment Act**), which provides:

Review of standard terms determination for unbundled bitstream access service before expiry of 1 year from separation day

- (1) The Commission must make reasonable efforts to do the following before the expiry of 1 year from separation day:
- (a) review the standard terms determination for Chorus's unbundled bitstream access service under section 30R for the purpose of making any changes that may be necessary in order to implement the initial and final pricing principles applicable after the expiry of 3 years from separation day; and
 - (b) give public notice of the result of the review.
- (2) To avoid doubt, no variation of, addition to, or deletion of terms specified in the standard terms determination as a result of the Commission's review in accordance with subsection (1) may take effect before the expiry of 3 years from separation day.
24. This price review is being conducted under s 30R of the Act, and is limited to making the amendments necessary to implement changes to the initial pricing principle (IPP) made by the Amendment Act. The Amendment Act changed the initial pricing principle from a retail-minus based price to a forward-looking cost-based price.⁴ The UBA price must also be geographically averaged.⁵
25. The Commission is prohibited from conducting a more general review of the UBA STD under s 30R,⁶ a redetermination under s 59, or accepting applications for a residual terms determination in relation to the UBA service until three years from separation day (1 December 2014):⁷

Certain provisions of Part 2 and Schedule 3 of principal Act do not apply in relation to Chorus's unbundled bitstream access service

Despite section 71(2), the following provisions of the principal Act do not apply in relation to Chorus's unbundled bitstream access service for the period starting on separation day and ending 3 years after separation day:

³ *Chorus' unbundled bitstream access standard terms determination* (Commerce Commission Decision 611, 12 December 2007).

⁴ See Schedule 3 of the Amendment Act.

⁵ Cl. 4A of Schedule 1 of the Act.

⁶ Including a competition assessment – see Final review of the Standard Terms Determination for the designated service Telecom's unbundled bitstream access (Commerce Commission decision 731, 2 September 2011), at [62-64].

⁷ Section 76 of the Amendment Act.

- (a) section 30R (review of standard terms determination), except as provided in sections 73 and 77:
- (b) section 30V (application for residual terms determination):
- (c) section 59 (reconsideration of determination):
- (d) clause 1(1) and (5) of Schedule 3 (Commission's investigation).

26. In this review the Commission must determine a cost-based price for the UBA service to apply from 1 December 2014. The initial pricing principle states that this price must be determined as follows:⁸

The price for the designated access service entitled Chorus's unbundled copper local loop network, plus benchmarking additional costs incurred in providing the unbundled bitstream access service against prices in comparable countries that use a forward-looking cost-based pricing method

- 27. The price for the designated access service *Chorus's unbundled copper local loop network*⁹ is set under the unbundled copper local loop (**UCLL**) standard terms determination (the **UCLL STD**).¹⁰ This price was updated on 3 December 2012 to be \$23.52.¹¹
- 28. The price for UBA will therefore be \$23.52 + the additional costs incurred in providing the UBA service.
- 29. The Commission therefore only needs to determine the additional costs by benchmarking against the prices charged for the additional costs in comparable countries that use a forward-looking cost-based pricing methodology.
- 30. The initial pricing principle is intended to be a proxy for the final pricing principle (**FPP**). The final pricing principle is the total service long-run incremental cost (**TSLRIC**). TSLRIC is defined in the Act.¹²

TSLRIC, in relation to a telecommunications service,-

- (a) means the forward-looking costs over the long run of the total quantity of the facilities and functions that are directly attributable to, or reasonably identifiable as incremental to, the service, taking into account the service provider's provision of other telecommunications services; and
- (b) includes a reasonable allocation of forward-looking common costs.

⁸ Schedule 1 of the Telecommunications Act 2001, Chorus's unbundled bitstream access, Initial pricing principle applicable after the expiry of 3 years from separation day.

⁹ Schedule 1 of the Telecommunications Act.

¹⁰ *Standard Terms Determination for the designated service Chorus's unbundled copper local loop* (Commerce Commission Decision 609, 7 November 2007).

¹¹ *Final determination on the benchmarking review for the unbundled copper local loop service* (Commerce Commission, Decision NZCC 37, 3 December 2012).

¹² Cl. 1 of Schedule 1 of the Act.

31. Section 19 of the Act requires that the Commission must consider the purpose set out in s 18 of the Act when determining the UBA price. The Commission must make a decision that best gives, or is likely to best give, effect to the s 18 purpose.¹³ Section 18 provides:

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.
- (2A) To avoid doubt, in determining whether or not, or the extent to which, competition in telecommunications markets for the long-term benefit of end-users of telecommunications services within New Zealand is promoted, consideration must be given to the incentives to innovate that exist for, and the risks faced by investors in new telecommunications services that involve significant capital investment and that offer capabilities not available from established services.
- (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.

32. In addition, as part of its s 18 assessment, the Commission must consider the relativity between the UBA service and the UCLL service (to the extent that terms and conditions have been determined for that service).¹⁴

Additional matters that must be considered regarding application of section 18:

The Commission must consider relativity between this service and Chorus's unbundled copper local loop network service (to the extent that terms and conditions have been determined for that service)

Application of final pricing principle

33. The Amendment Act preserves the right for parties to apply for a determination of the price in accordance with the final pricing principle after the Commission has made a determination using the initial pricing principle.¹⁵ If a party applies for a price review in accordance with the final pricing principle, the Commission must make

¹³ See Schedule 1 of the Act.

¹⁴ Section 19(b) of the Act.

¹⁵ Section 78 of the Amendment Act.

reasonable efforts to complete that review by 1 December 2014, when the new geographically-averaged cost-based price is to come into effect.¹⁶

34. The request for a price review under s 42 of the Act¹⁷ must be made in writing, to the Commission, within 25 working days of the final determination of the price of the UBA service.
35. The price review would require the Commission to determine the price of the UBA service in accordance with the final pricing principle, TSLRIC. The prices determined by the Commission in this determination process would continue until the Commission had determined the price in accordance with TSLRIC.¹⁸
36. A price review in accordance with the final pricing principle is only available:¹⁹
 - 36.1 Where the Commission has determined a price in accordance with the initial pricing principle
 - 36.2 At the request of an access seeker or access provider.²⁰
37. We note that, in accordance with s 54 of the Act, there is no obligation for the Commission to cease work on a final pricing principle determination at the request of a party in relation to standard terms determinations.²¹
38. The costs to the Commission of a price review determination must be met by the access seekers and/or access provider in the proportions directed by the Commission,²² or in whole or part by the general telecommunications levy collected in accordance with s 11 of the Act.

The UBA STD

39. The UBA service is regulated in accordance with the UBA STD issued by the Commission on 12 December 2007.²³
40. The UBA service is a wholesale digital subscriber line (DSL) service that enables access to, and interconnection with, that part of Chorus' fixed public data network (PDN) that connects the end-user's building to Chorus' first data switch (or

¹⁶ Section 78(3) of the Amendment Act.

¹⁷ This has been expressly made available in regards of this price review under s 78 of the Amendment Act.

¹⁸ Section 42 of the Act.

¹⁹ Ibid.

²⁰ In other words, the Commission cannot commence such a price review on its own accord, as the Act does not allow for this.

²¹ Section 54 of the Act.

²² Section 55 of the Act.

²³ *Chorus' unbundled bitstream access standard terms determination* (Commerce Commission Decision 611, 12 December 2007).

equivalent facility) other than a DSLAM.²⁴ Access seekers use UBA to deliver retail broadband services to customers.

41. The additional costs of providing the UBA service are currently based on a retail-minus pricing methodology, calculated using the costs of Telecom's retail broadband services. The retail-minus pricing methodology adopted by the Commission in the UBA STD included a number of steps:²⁵
 - 41.1 Observing the price of retail broadband services provided by Telecom
 - 41.2 Imputing the retail price of the bitstream service, removing the effects of bundled pricing, national and international data transmission costs and the ISP-specific component
 - 41.3 Weighting the relevant retail prices by customer connection numbers
 - 41.4 Removing a discount, determined by benchmarking the discounts applied in comparable countries that use a retail-minus methodology.
42. Since the separation of Telecom on 30 November 2011, the additional costs of providing UBA have been frozen, and will remain in effect until 1 December 2014, when the new cost-based prices to be determined in this price review proceeding will come into effect.
43. In the UBA STD, the Commission adopted four variants of the UBA service:
 - 43.1 A Basic UBA service (BUBA, also known as EUBA0 when provided using Ethernet rather than ATM). This provides an internet grade best efforts class of service.
 - 43.2 Three Enhanced UBA services, EUBA40, EUBA90, and EUBA180. These services have two classes of service:
 - 43.2.1 An internet grade best efforts class of service – equivalent to the BUBA class of service;
 - 43.2.2 A minimum guaranteed throughput class of service. This guaranteed throughput is 40 kbps, 90 kbps and 180 kbps for EUBA40, EUBA90 and EUBA180 respectively.

²⁴ Schedule 1 of the Act defines the UBA service as: A digital subscriber line enabled service (and its associated functions, including the associated functions of operational support systems) that enables access to, and interconnection with, that part of a fixed PDN²⁴ that connects an end-user's building (or, where relevant, the building's distribution frame) to a first data switch) or equivalent facility), other than a digital subscriber line access multiplexer (DSLAM).

²⁵ See the UBA STD, at [133]

43.3 This guaranteed minimum throughput component enables a different range of broadband services to be provided including services that have a real-time dimension.

44. The table below outlines the metrics the BUBA service must achieve:²⁶

Metric	Specification (1500 byte packet)
Throughput	99.9% probability of providing to any provisioned End User a minimum uplink and downlink average throughput of 32kbps during any 15 minute period on demand
Mean one-way packet delay	< 1 sec
One-way packet delay variation	Unspecified
One-way packet loss ratio	Unspecified

45. The table below outlines the metrics that the Enhanced UBA Services must achieve:²⁷

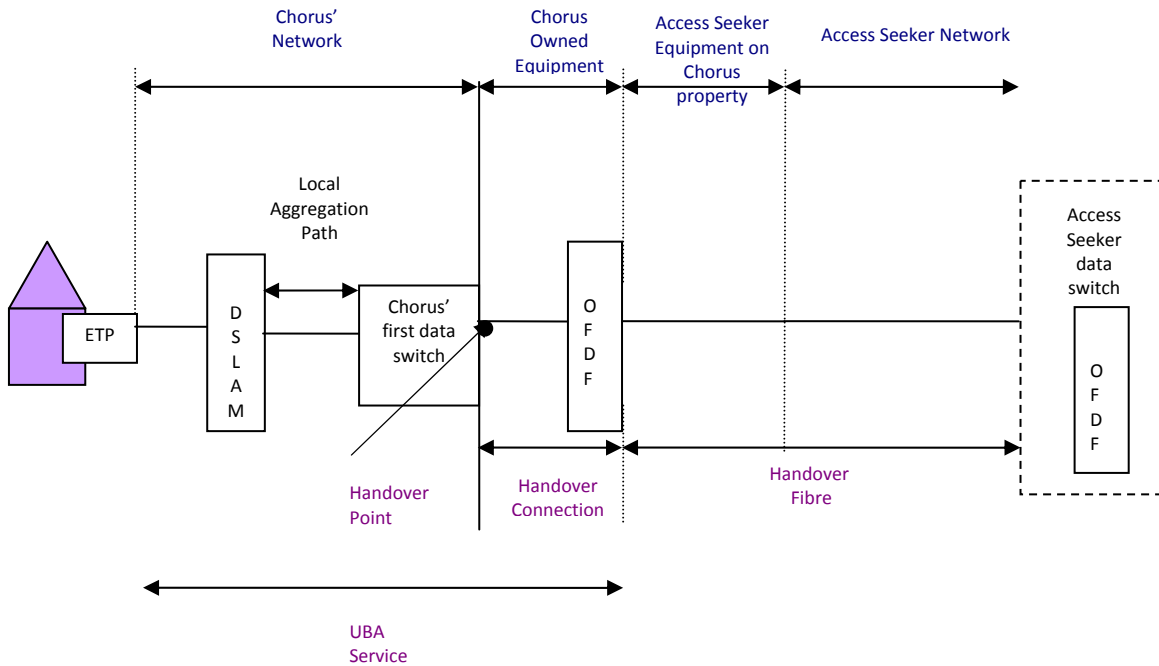
Metric	Notes:	Real time class of service (200 byte packet)	Internet class of service (1500 byte packet)
Throughput	kbit/s	= 40kbit/s or 90 kbit/s or 180kbit/s	99.9% probability of providing to any provisioned End User a minimum uplink and downlink average throughput of 32kbps during any 15 minute period on demand
Mean one-way packet delay	Interleaving HIGH	<50ms	<1s
	Interleaving LOW	<25ms	<1s
One-way packet delay variation	Milliseconds	<10ms	Unspecified
One-way packet loss ratio	Interleaving HIGH	<0.1%	Unspecified

²⁶ See Schedule 1 to the UBA STD.

²⁷ Ibid.

46. The full service descriptions for the Basic UBA service and the Enhanced UBA services are set out in Schedule 1 of the UBA STD and in Attachment 1 to this draft determination.
47. Figure 1 below provides a graphical representation of the network components involved in delivering the UBA services.

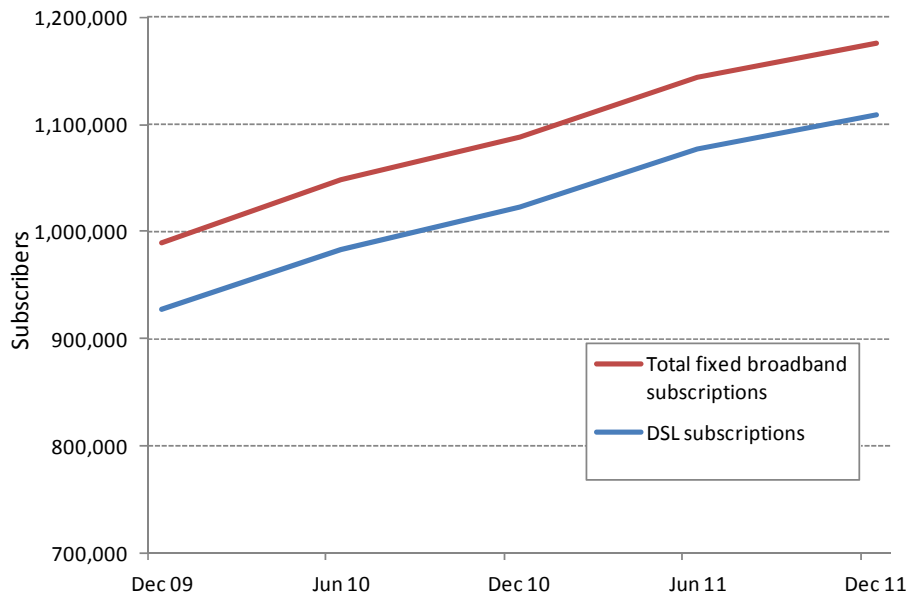
Figure 1: UBA overview



Overview of the broadband market in New Zealand

48. As at 31 December 2011, there were approximately 1.2 million fixed broadband lines in New Zealand. DSL is the main broadband access technology, accounting for approximately 90% of total broadband connections. Most of these connections are delivered over Chorus' copper access network.²⁸ Other fixed broadband technologies include fibre and cable. The graph below shows the growth in broadband subscriptions since 2009.

²⁸ Using either Chorus' UBA services or UCLL based services. Attachment 2 provides an illustrative diagram of the copper access network in New Zealand.

Figure 2: DSL and fixed broadband subscriptions, 2009-2011

Source: Commission annual sector monitoring

49. Chorus' wholesale bitstream services²⁹ are used by access seekers to provide the majority of all retail broadband services in New Zealand.
50. The price of UBA therefore has a substantial impact on growth and development of the broadband market, and the price paid by end-users for retail broadband services.

²⁹ Both UBA and unregulated commercial bitstream services.

Determining the benchmark set within the IPP framework

51. This section details the approach the Commission has used to derive a benchmark set for setting UBA service prices. Further information on the methodology is included in Attachment 3.
52. The Act requires the Commission to set the regulated price for the additional costs of providing the UBA service based on a benchmark of international regulated prices for services in comparable countries.
53. We have used two main criteria to identify countries to be included in the benchmark set:
 - 53.1 **Forward-looking cost-based pricing method:** the countries must set regulated bitstream prices based on a forward looking, cost-based pricing methodology
 - 53.2 **Comparable countries:** the country characteristics that are relevant to the cost of providing a wholesale bitstream service must be similar to those of New Zealand.
54. The UBA initial pricing principle does not expressly require the Commission to compare the UBA service against similar services. However, the Commission considers that we should focus on services that are generally consistent with the UBA service description, as there will be greater reliability comparing against similar services. Accordingly, we have selected countries for the benchmark set that have a similar bitstream service to New Zealand's UBA service.
55. The Commission's view is that Sweden, Belgium and Denmark should be included in the benchmark set based on the forward-looking cost-based pricing method and comparable countries criteria. However, the Commission considers that, when considering the similarity of services, Belgium should be excluded from the benchmark set.

Initial candidate countries

56. We identified thirty-one countries as possible benchmark candidates for setting the UBA service price. These countries included the United States, Australia, Israel and several European countries. The candidate countries were identified from the following sources:
 - 56.1 the benchmark sample used in the Commission's 2007 and current UCLL decisions³⁰
 - 56.2 the BEREC report on regulatory accounting practice in 2011³¹

³⁰ See the original UCLL STD (Decision 609), and the *Revised draft determination on the benchmarking review for the unbundled local copper loop service* (Commerce Commission draft decision, May 2012).

- 56.3 the Cullen International reports on bitstream regulatory models in 2011³² and 2012³³
57. We removed the United States from this initial candidate set because wholesale bitstream services in the US are mostly un-regulated. The US broadband market was deregulated through a series of decisions and a 2005 Triennial Review. Since 2005, any operator who bundled DSL with internet access could treat the bundle as an 'information service', excluding it from nearly all regulatory obligations. Most operators have bundled DSL in this manner.
58. The process to identify countries with a forward-looking cost-based pricing methodology is described below.

Forward-looking cost-based pricing method

59. The initial pricing principle price is intended to be a proxy for the price that would be set under the final pricing principle. The final pricing principle for the UBA service is TSLRIC.
60. A key criterion for the benchmark set is to select countries that use a forward-looking cost-based approach, such as a TSLRIC approach. A similar approach was applied in the UCLL and MTAS determinations.³⁴
61. We selected countries to include in the benchmark set from the initial candidate list only where the country's regulated UBA price met the following criteria:
- 61.1 **Cost-based price control.** The wholesale bitstream access price is regulated using a cost-based price method.
- 61.2 **Forward-looking TSLRIC.** A TSLRIC methodology, or equivalent, is used to calculate the regulated price
- 61.3 **Current costs.** The regulated price is set based on current (forward-looking) costs. Pure historic cost models would not comply with this requirement, though hybrid historic/current cost models may comply.
- 61.4 **Verified cost model.** The cost model is designed or expressly reviewed and approved by the regulator.
62. The primary source of this information was a questionnaire that was sent to the regulators in the various countries. WIK provided further information on particular issues and gaps.

³¹ See http://berec.europa.eu/doc/berec/bor_11_34.pdf

³² Cullen International report, March 2011, "Table 7: Wholesale naked DSL offers-Regulation and prices"

³³ Cullen International report, April 2012, "Table 10- Wholesale broadband access- Regulation"

³⁴ See the UCLL STD (Decision 609) and *Standard Terms Determination for the designated access services of the mobile termination access service (MTAS) fixed-to-mobile voice (FTM), mobile-to-mobile (MTM), and short messaging services (SMS)* (Commerce Commission, Decision 724), pp57-66, paras 244-266.

63. The criteria were applied sequentially. Countries that remained after the criteria were applied were judged to be countries that meet the forward-looking, cost-based criteria. Table 3 below illustrates the results from applying these criteria.

64. Further details on this screening methodology are included in Attachment 3.

Table 3: Candidate benchmark countries – cost criteria

Country	Price control cost-based?	TSLRIC cost model?	Current costs used?	Model verified and reviewed?
Belgium				
Denmark				
Sweden				
Switzerland				
Greece				
Slovakia				
Poland				
France				
Spain				
Bahrain				
United Kingdom				
Hungary				
Italy				
The Netherlands				
Australia				
Austria				
Cyprus				
Czech republic				
Estonia				
Finland				
Germany				
Ireland				
Israel				
Latvia				
Lithuania				
Malta				
Norway				
Portugal				
Slovenia				
Turkey				

65. The table shows that 19 of the 30 countries do not regulate a wholesale bitstream access price using a cost-based approach. This outcome is represented in the table by those countries being left 'un-coloured' in the 'price-control cost based' column. Most of these 19 countries use a retail-minus approach.

66. Similarly, for the other three cost criteria:

66.1 Four countries (France, Spain, Bahrain and the United Kingdom) do not use a TSLRIC methodology for setting price; instead, these countries use a fully distributed cost (FDC) methodology. These countries are illustrated in the table under the green shading

- 66.2 One country (Poland) uses only historic cost accounting in determining its TSLRIC-based price and therefore is not based on current (forward-looking) cost models
- 66.3 Three countries (Switzerland, Greece and Slovakia) do not have TSLRIC (or equivalent) models that have been verified by the regulator. These countries are highlighted with orange shading in the table.
67. The remaining three countries – Belgium, Denmark and Sweden – meet the forward-looking cost-based pricing method criteria.

Countries meeting the forward-looking, cost-based pricing criteria

68. Table 4 below provides a summary of the ADSL wholesale bitstream products and the cost models used in the three benchmark candidate countries identified in the previous section.

Table 4: Countries meeting the forward-looking cost-based pricing methodology

	Belgium	Denmark	Sweden
Cost model used	BU-LRAIC	Hybrid-LRAIC	Hybrid-LRAIC
Network topology	Fibre to the node	Fibre to the node	Fibre to the node

Source: Commission's summary based on information received from national regulators

69. The regulators in all three countries use a LRAIC (long run average incremental cost) model for setting the unbundled bitstream access price. The Belgium regulator uses a bottom-up (BU) approach. Denmark and Sweden use both BU and top-down (TD) approaches and reconcile the estimates of the approaches to determine a forward-looking cost-based price for wholesale bitstream services (called a 'hybrid-LRAIC approach').

Comparable countries

70. The initial pricing principle requires the Commission to identify those countries within the benchmarking data set that are comparable to New Zealand. In this section, we check whether the countries identified above have broadband market characteristics that are broadly similar to New Zealand. The size of the DSL markets in these countries is particularly important, as UBA services are provided using DSL.
71. The UBA service is largely comprised of active network infrastructure.³⁵ For instance, DSLAMs are major cost components of UBA networks. Accordingly, spatial density factors are less likely to be major cost drivers of UBA networks.

³⁵ Active network infrastructure (or electronic components) includes equipment such as optical network units, switches, management systems, broadband remote access servers (BRAS, called data switches in the UBA STD) and multiplexing equipment such as DSLAMs.

72. A quantitative approach cannot be used for UBA because the sample of benchmark countries is too small. Instead, the Commission has used a qualitative approach to determine comparability criteria.
73. Because UBA infrastructure is predominantly the active electronics part of the broadband network, the scale of this infrastructure is likely to be a major factor driving network cost. Larger network operators should have a lower unit cost for active parts of their networks due to economies of scale (eg better pricing arrangements with infrastructure vendors).
74. The Commission has therefore used the penetration and absolute numbers of DSL subscribers in the candidate countries as comparability criteria. Table 5 below presents these figures for the three countries in the benchmark set.

Table 5: Broadband subscriptions in other countries

	New Zealand	Belgium	Denmark	Sweden
Number of broadband (DSL) subscriptions	1.1 million	1.9 million	1.2 million	1.5 million
Broadband (DSL) penetration³⁶	25.4%	17.1%	21.7%	16.2%

Source: OECD Broadband statistics for 2011(oecd.org/sti/ict/broadband)

75. The Commission observes that the number and penetration of DSL broadband customers in New Zealand and the benchmark countries are broadly comparable to New Zealand. DSL services in these countries are likely to have similar economies of scale. Accordingly, we are satisfied that all three countries are suitable as benchmarks for setting the UBA service prices.³⁷

‘Similar’ services

76. The Commission must benchmark using services that are sufficiently similar to the UBA service. When those services are not similar to the UBA service, the Commission must decide whether to include those services within the benchmark set, or to make any necessary adjustments to accommodate such differences in the final benchmark price.
77. We have identified four key product characteristics which we used to assess the similarity of bitstream services in the three countries:

77.1 The location of the handover point

³⁶ DSL subscriptions as a percentage of the total population.

³⁷ The Commission considered a number of other possible screening criteria, including teledensity and urbanisation. We found that the additional criteria were unlikely to result in any changes to the benchmark set.

77.2 Class of service

77.3 The speed of the service

77.4 The technology used to provide the service

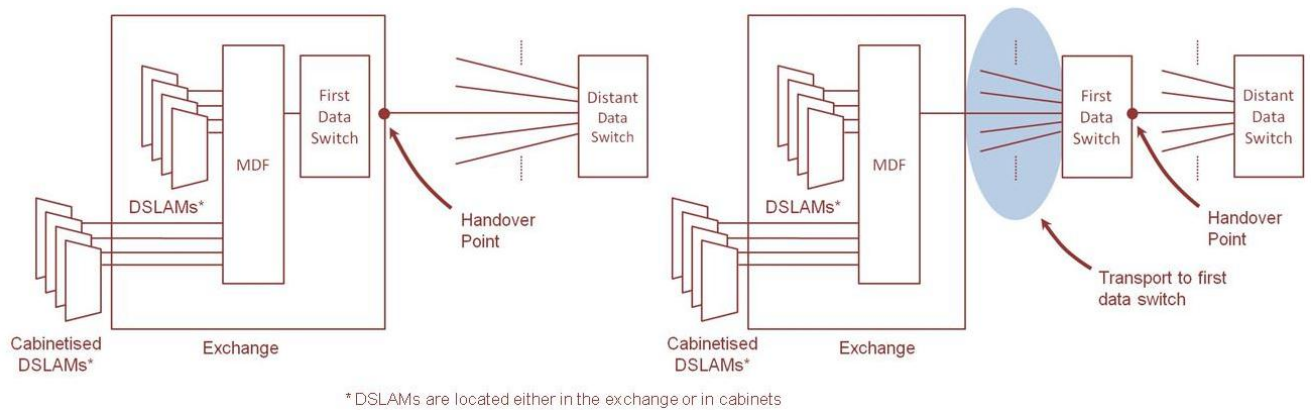
78. These characteristics are briefly explained below.

Location of handover point

79. The current UBA service description defines the UBA handover point as the first data switch. The service includes a transport component in cases where the main distribution frame (MDF) and the first data switch (FDS) are physically separate (around 84% of exchanges are separate from the first data switch).

80. The UBA handover point is illustrated in Figure 3 below.

Figure 3: New Zealand UBA Handover Point



MDF and first data switch are physically co-located in around 90 (or 16%) of exchanges

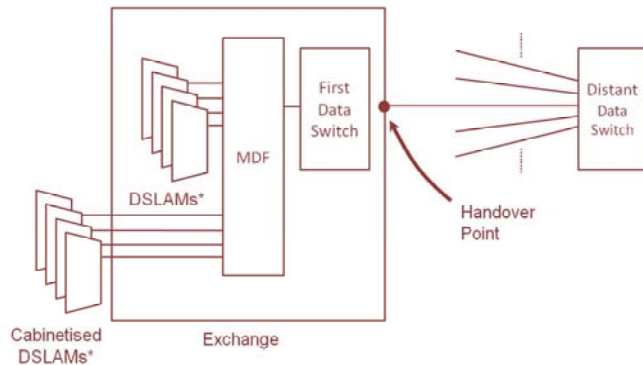
MDF and first data switch are physically separate in around 460 (or 84%) of exchanges

81. Bitstream services in overseas jurisdictions have various handover points, including the DSLAM, the first data switch, the 'distant' data switch and at an 'IP Access' level. A bitstream service that has a handover point located closer to the DSLAM is likely to have higher active network costs (particularly FDS infrastructure) and lower transport costs.³⁸ Conversely, an access point that is further away from the DSLAM is likely to have proportionately more transport costs.
82. In Sweden and Denmark, there are bitstream service options that have a handover point similar to New Zealand's UBA service. The handover point of the Swedish bitstream service is at the 'parent' switch, which is equivalent to the FDS. In Denmark, there are three handover points available to access seekers; one of these is at the layer 2 parent switch, which is similar to the FDS.

³⁸ The transport component includes any civil engineering and equipment costs in providing the UBA service. Any forward-looking UBA price calculated using TSLRIC modelling will include these costs and the appropriate allocation of shared assets and operational expenditure to the regulated handover point.

83. The Belgium service has a different network configuration than New Zealand, Sweden and Denmark. In Belgium, the handover point for the wholesale bitstream service is technically at the FDS. However, the DSLAMs and FDS are co-located in the main distribution frame (MDF). The Belgian configuration is illustrated below.

Figure 4: Belgium Handover Point



* DSLAMs are located either in the exchange or in cabinets

84. Compared to the New Zealand bitstream service (where co-location of the DSLAMs and FDS is only in around 16% of exchanges), this configuration implies that the Belgium service has lower transport costs to the aggregation point, but more FDSs.

Class of service (CoS)

85. The class of service selected for the benchmark set must be similar to that available in New Zealand. The Basic UBA service is 'best efforts' quality. The Enhanced UBA services contain a 'real time' component and in our benchmark the proportion of real time capacity has been used to calculate the uplift for the enhanced services.

Point selection based on service 'speed'

86. There is no differentiation in line speed in New Zealand, with Basic UBA being a full speed/full speed service, subject to throughput limitations. However, in overseas jurisdictions line speed differentiation is common practice. The price points used for benchmarking the New Zealand UBA service should reflect the attributes of the service.
87. A higher line speed over the local access network (the copper pair) does not incur any additional cost when compared to a lower line speed service. A higher price for a higher speed, in a cost-based model, is therefore reflective of the increased variable cost of the shared resource, mostly transport costs.³⁹
88. The slowest speed service therefore provides an indication of the minimum level of fixed costs necessary to provide the service. Additional costs are incurred by the additional transport required for a higher speed service.

³⁹ The WIK report states that "...there is a link between access line speed and average throughput; the higher the access line speed the more throughput a network planner would have to account for when dimensioning the network."

89. The price for the Basic UBA service represents the cost of providing the service with a 32kbps minimum throughput which puts it at the low end when compared to other services overseas. The price point for the slowest speed should therefore be selected in the benchmarked countries.

Technology used to supply the service

90. The comparable services identified in the benchmark do not include any bitstream services delivered using SDSL, VDSL or VDSL2 technology.

Summary of benchmarked countries

91. Table 6 below summarises the comparable services identified in the benchmarked countries. Further details for each country are included in Attachment 4.

Table 6: Summary of similar services

Characteristics	Denmark	Sweden	Belgium
Handover point	FDS	FDS	FDS, but access at every MDF
CoS parameters	Not set	“Best efforts” and “VoIP” quality	“Best efforts” and “Highest priority” quality
Speed point	256 kbps	250 kbps	No differentiation
Access technology	ADSL	ADSL	ADSL
Protocol	Ethernet	Ethernet	Ethernet

Source: Commission’s summary based on information received from national regulators

92. Having examined the potentially comparable services in the three countries, the Commission considers that Denmark and Sweden have broadly similar unbundled bitstream access services to New Zealand.
93. As discussed above, the Belgium network configuration for wholesale bitstream services is different to that in New Zealand. In particular, the Belgium service is not directly comparable to Basic UBA at the handover point.
94. To use the Belgium bitstream service in the benchmark set the Commission would need to adjust for the differences in the New Zealand and Belgium services. There are no comparable services from which to derive this adjustment, and therefore any adjustment would introduce additional uncertainty to the comparability of the Belgian service. Further, there is no intuitive and transparent way of determining such an adjustment. It is also our impression that it is not possible to perform such adjustment due to lack of appropriate data given the specific product constellation. Accordingly the Commission has excluded Belgium from the benchmark set used to calculate the UBA service price.

Conclusion on benchmark set

95. Based on the analysis in this section, the Commission considers that the benchmark set that is used to set the prices for UBA services should include Sweden and Denmark.
96. The Commission recognises that this is a small sample set. The IPP requires the Commission to determine a cost-based price for the UBA service by benchmarking the bitstream services in comparable countries that use a forward-looking cost-based pricing method. The Commission considers that a robust analysis must use benchmark observations that are comparable. Our analysis has found that the above two countries are the only countries that have regulated bitstream access prices that are consistent with the IPP for UBA.

Determining the price of the UBA services

97. This section summarises the approach the Commission has used to calculate the cost-based UBA monthly rental prices for New Zealand.
98. This section explains:
 - 98.1 currency conversion of international benchmarked prices
 - 98.2 price point selection for the Basic UBA service
 - 98.3 price of the EUBA variants
 - 98.4 price of other charges

Currency conversion

99. In the Commission's UCLL, Sub-loop and Backhaul determinations, the Commission used a 50/50 blend of purchasing power parity (PPP) and a 10 year average for market exchange rates to convert the international benchmarked prices from the relevant local currencies to New Zealand dollars. The blended approach reflects the fact that these services are comprised of approximately 50% of non-tradable components (such as labour) with the other 50% relating to tradable capital inputs.
100. While the use of exchange rates is appropriate for tradable goods and services, PPP rates are specifically designed to capture differences in the standard of living between countries by measuring the relative price of a basket of services and goods. This is achieved by converting currencies at a rate that eliminates differences in price levels between countries, or in other words, at a rate that ensures parity in the purchasing power in each country.
101. For this UBA price review, we considered whether the same weightings for non-tradable components (such as labour) and tradable capital inputs should be used.
102. We would expect bitstream services to be less labour-intensive to install than passive network elements. However, our understanding is that active equipment also draws higher operating expenses than passive networks.
103. In addition, trenching costs for transport to the FDS need to be taken into consideration. We also compared the weightings of tradable components and non-tradable components in the passive and active network components found in the Swedish model, the only model in the benchmark set expressly setting out this information. The Swedish model shows that the weightings are similar for both the passive and active networks.
104. The Commission considers that the same blended approach that was used in the UCLL, Sub-loop and Backhaul determinations (50% for non-tradable components (such as labour) and 50% for tradable capital inputs) should be used for calculating UBA service prices.

105. We used the following to convert the international benchmarked prices from the relevant local currencies to New Zealand dollars:

105.1 2011 PPPs⁴⁰

105.2 the 10-year average exchange rate, calculated to 30 June 2012.^{41,42}

Price point selection for the Basic UBA variant

Benchmark price points

106. The price points for the comparable services for each benchmarked country are summarised below. The price point calculation takes the full monthly standalone price for the wholesale bitstream service plus any additional transport. Any local loop cost is then deducted from the monthly price which leaves the additional costs of the UBA service.

Table 7: Price point summary

Component	Denmark	Sweden
Monthly UBA	Kr 82	128 kr ⁴³
Full loop price	Kr 34 ⁴⁴	88 kr
Transport	Included in price	Included in price
Blended exchange rate	4.52	5.39
Monthly UBA less full loop, plus transport (NZD) ⁴⁵	\$10.51	\$7.36
Forward-looking cost-based price (mean/median)		\$8.93

107. Although Belgium was excluded from the benchmark set because its bitstream service is defined differently to New Zealand, we note that its bitstream price is \$6.76.

⁴⁰ World Bank PPP rates for GDP. See <http://data.worldbank.org/indicator/PA.NUS.PPP>

⁴¹ Sourced from oanda.com.

⁴² We used the 10-year average as this provides a consistent approach between the UBA and the UCLL, Sub-loop and Backhaul determinations.

⁴³ The 'economic space' margin is removed from the Swedish price.
http://www.pts.se/upload/Ovrigt/Tele/Bransch/Kalkylarbete%20fasta%20nätet/revidering%202011/10-420-kostnadsresultat-slutlig-hybridmodell-v%208_1.pdf

⁴⁴ The Danish regulator advised us that only the shared loop cost is included in the bitstream price. The shared loop cost is half that of the full loop.

⁴⁵ There may be rounding differences due to exchange rates.

108. The Commission is required to determine a forward-looking cost-based UBA monthly rental price. The Commission typically selects a price point within the range of the benchmark sample, such as:
- 108.1 a measure of central tendency, such as the mean or median
 - 108.2 a price point above the median, such as the 75th percentile
 - 108.3 a price point below the median, such as the 25th percentile.
109. The Commission's approach is to start with the mean or median and then consider whether there are grounds to deviate from that point (eg, expected differences in costs, or to address s 18 concerns such as relativity).

Section 18 considerations for price point selection

110. The Commission appreciates that the UBA price affects UCLL unbundling in the near term and may affect the transition to fibre in the medium term. We have considered whether it might be appropriate to pick a higher price point than the mean benchmarked UBA price to encourage investment. Our preliminary view is that selecting the mean price point is consistent with s 18. Our view is that an adjustment to this price is not required in order to maintain appropriate incentives for access seekers to invest in UCLL based services, since both UCLL and UBA prices are forward-looking cost-based prices. On balance, it is not clear that additional incentives would promote competition to the long-term benefit of end-users.
111. In reaching this preliminary conclusion, we have considered a number of issues as part of our overall assessment of long-term benefit for end-users and the specific matters required by s 18 and s 19 of the Act. Given the complexity of some of these issues, and given that we are assessing a price point that will start in two years time, we are particularly interested in submitters views on:
- 111.1 the relativity between the prices of the UBA and UCLL services and the implications for investment in these services;
 - 111.2 whether there are asymmetric economic costs in setting the UBA price too high or too low; and
 - 111.3 the likely impact on incentives to invest in broadband services, whether over copper or fibre, and the effects on end-users.
112. These factors are discussed below.

Relativity

113. As part of its s 18 considerations, the service description for UBA requires the Commission to assess the relativity of the UBA and UCLL services, in this setting just the UBA additional costs that we are benchmarking. The difference in price between the UBA and UCLL services may affect the incentives for access seekers to invest in UCLL.

114. The price relativity between UBA and UCLL is one of several influences on the incentives to invest in unbundling. Other influences were noted in the Commission's original UBA STD assessment of relativity.⁴⁶ These include the number of customers served by the access seeker from each exchange, the payback period of the investment at the exchange, access seekers' ability to offer new services when using UCLL, and the possibility of saving costs in the provision of a voice service. Our current view is that there is still a positive incentive for UCLL.
115. Given that these positive incentives exist for access seekers to continue to invest in UCLL based services; it is unclear to the Commission that a UBA price above the mean would give best effect to the long-term interests of end-users.

Asymmetric cost

116. We recognise that the IPP is a proxy for estimating the UBA price under an FPP (ie, a forward-looking cost-based price). As such, it is possible that the IPP may arrive at a calculated price that is different from a price based on the forward-looking costs of providing the service. A benchmarked price that is different from this 'true' price could affect access seekers' decisions in a way that may not be beneficial for end-users. There is an asymmetric cost on the access seeker or access provider when the economic cost of an incorrect estimate in one direction is greater than the opposite direction.
117. At this stage it is uncertain whether the implications of a 'too-low' benchmark price are greater or smaller than the affects of a price that is 'too-high'. For instance:
- 117.1 a price that is 'too high' raises prices to end-users
- 117.2 a price that is 'too low' may discourage investment by access seekers in UCLL and competitive bitstream services that would benefit end-users in the long-run.
118. We are interested in your views as to whether a higher price point than the benchmark mean would be justified by an asymmetric cost of error.

Impact on incentives to invest in broadband services

119. In selecting the mean price point, we have also considered—as part of the wider s 18 considerations—whether there are any potential incentives or disincentives to innovate and invest in new telecommunications services that involve significant capital investments (such as UFB or copper local loop unbundling).
120. Section 18(2A) requires that the Commission consider “incentives to innovate that exist for, and the risks faced by, investors in new telecommunications services that involve significant capital investment and that offer capabilities not available from established services.” Submissions to the Commission since the Amendment Act

⁴⁶ *Standard Terms Determination for the designated service Telecom's unbundled bitstream access*, (Commerce Commission Decision No. 611, 12 December 2007), page 81, paras 436-439.

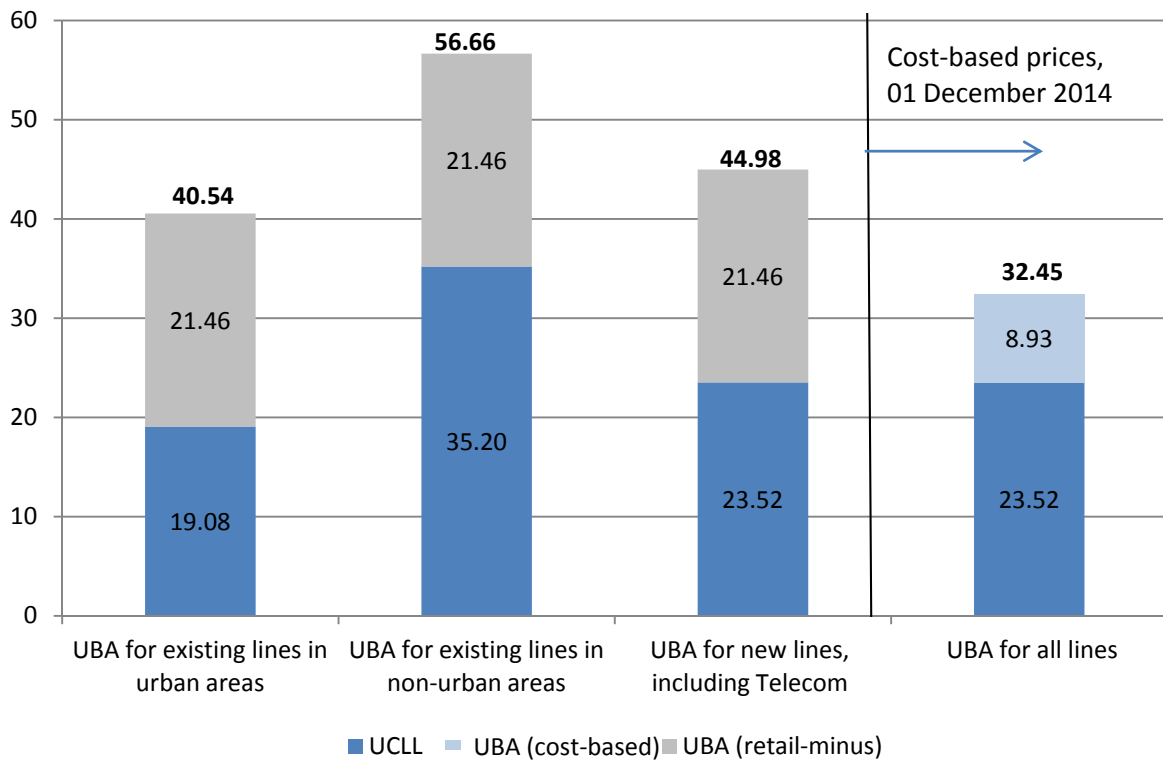
came into force have argued that the requirement to consider refers to, variously, just the UFB rollout or even-handedly, the UFB rollout and copper unbundling (UCLL).

121. Our view is that, in the case of setting the UBA price, the Commission does not need to decide whether the s 18(2A) requirement refers to the UFB rollout or to UCLL unbundling, since the implications for the UBA would be the same in either case. For both UCLL and UFB the issue is whether the UBA price encourages investment and a take-up of competing services that will benefit end-users.
122. It is unclear whether a UBA price higher than the mean is likely to lead to investment in new innovative services, whether over copper or fibre, since access seekers will have an incentive to upgrade to fibre in order to differentiate their services from copper-based services. Accordingly, our preliminary view is that the mean price point best gives effect to the interests of end-users.
123. We welcome your views on whether s 18(2A) warrants an increase in the UBA price above the legislated cost base.

Basic UBA price selection

124. Figure 5 illustrates the changes in the price of the UBA service that will occur on 1 December 2014 under the current proposed benchmarked price. Prices for the additional cost in providing a Basic UBA service, prior to 1 December 2014, are based on retail-minus pricing methodology. The price for the additional cost for UBA, post 1 December 2014, is based on a cost-based methodology. Figure 5 also illustrates the current UCLL prices, prior to 1 December 2014, and the UCLL prices to apply post 1 December 2014.

Figure 5: Net impact on Basic UBA price of moving to a cost-based methodology



Source: Commerce Commission

125. Figure 5 shows that the wholesale price for purchasing UBA from 1 December 2014 is as follows:

125.1 The price for purchasing UBA from 1 December 2014 is \$32.45 per month for all lines. This price is based on the geographically averaged UCLL price and proposed benchmarked price for the additional cost in providing Basic UBA service.

125.2 In selecting the mean as the price point of the benchmark set, the forward-looking cost-based price for the additional cost in providing Basic UBA service is \$8.93 per month. The movement to a cost-based price for additional costs in providing a Basic UBA service results in a price decrease of \$12.53, from \$21.46 (based on a retail-minus methodology) to \$8.93 (based on a cost-based methodology).

126. As illustrated in Figure 5, the impact on the wholesale price for the UBA service varies depending on whether the end-user is a customer of either of the following categories:

126.1 A customer of Telecom prior to 30 November 2011 and all end-users first subscribing to a retail broadband service after 30 November 2011. This category is referred to as 'new lines, including Telecom'.

126.2 A customer of another access seeker, prior to 30 November 2011, in urban areas. This category is referred to as 'existing lines in urban areas'.

- 126.3 A customer of another access seeker prior to 30 November 2011 in non-urban areas. This category is referred to as 'existing lines in non-urban areas'.
127. The vast majority of customers fall within the new lines category. A small minority of customers fall within the existing lines for both urban and non-urban categories.
128. Figure 5 shows that the wholesale prices for purchasing UBA prior to 1 December 2014 for each customer category as follows:
- 128.1 The price payable by customers in the new lines category is \$44.98. This price is based on the retail-minus price for the additional cost of providing a Basic UBA service and the geographically averaged UCLL price. As indicated above, this price is applicable to the majority of customers.
- 128.2 The price payable by customers in the existing lines category in urban areas is \$40.54. This price is based on UBA for existing lines in urban areas based on the retail-minus price for the additional cost of providing a Basic UBA service and the current UCLL price in urban areas.
- 128.3 The price payable by customers in the existing lines category in non-urban areas is \$56.66. This price is based on UBA for existing lines in urban areas based on the retail-minus price for the additional cost of providing a Basic UBA service and the current UCLL price in non-urban areas.
129. We can observe from Figure 5 that the net impact as a result of the movement to a cost-based price and a geographically averaged UCLL is \$8.09 (existing lines in urban areas); \$24.21 (existing lines in non-urban areas); and \$12.53 (new lines).

Conclusion – price point selection for Basic UBA

130. The Commission considers that the mean of the benchmark sample is the appropriate price point for the Basic UBA service. This gives a forward-looking cost-based price for the additional costs of providing the Basic UBA service (which would be incurred in addition to the UCLL charge) of \$8.93 per month.

Price setting for the EUBA variants

131. We have calculated the price of the EUBA variants by considering the percentage premium in price that benchmarked enhanced services have over standard bitstream services. The Commission considers this to be a simple and pragmatic approach to calculating these prices.
132. A similar approach was used in the original UBA determination. In that determination the Commission identified two UK broadband providers that offered retail plans with prioritisation for real-time class of service (CoS) and without prioritisation for real-time CoS. A percentage retail premium for prioritisation was calculated by comparing services similar on attributes such as monthly data cap with

and without prioritisation.⁴⁷ The premiums were based on retail prices. In this current determination, we have calculated the premiums using forward-looking, cost-based wholesale prices.

133. The process the Commission followed to calculate the EUBA prices is discussed below.
134. Sweden is the only country in the benchmark set which offers differentiated quality of service products. There are three CoS profiles offered for whole line bitstream; “Standard” which is comparable to a “best efforts” class of service; “VOIP” which is comparable to a “real time” class of service; and “MIX” which sits between these two offers.⁴⁸ The price of the local loop component has been excluded from the price points.
135. These CoS profiles are offered with varying speeds⁴⁹ with the symmetrical 2 Mbps option chosen for the calculation.
136. Due to the unique combination of throughput and CoS for the New Zealand UBA variants the Commission’s view is that the premium percentage between Sweden’s “Standard” CoS and “VOIP” CoS best reflects the difference between the Basic UBA service and the EUBA180 service.
137. The percentage difference between the price of the “Standard” and “VOIP” services is 21.3%. This percentage is added to the BUBA service to calculate the price of the EUBA180 service. The price of the EUBA90 and the EUBA40 services are then determined as a proportion of the difference in throughput with the EUBA180 service (for example the increase in price of the EUBA90 service is half that of the EUBA180 service).⁵⁰ A summary of the products used and the calculation of the percentage is provided in Table 8.

⁴⁷ UBA STD page 44

⁴⁸ http://www.teliasoneraic.com/icons/groups/public/documents/regulatedproductdocument/ts_008384.pdf, page 7

⁴⁹ 2 Mbps down / 2 Mbps up, 10 Mbps down / 2 Mbps up, 24 Mbps down / 3 Mbps up

⁵⁰ $EUBA90 = ((180 \text{ kbps} - BUBA) / 180) \times 90 + BUBA$

Table 8: Calculation of quality of service premium percentage

Product description	Sweden (kr/mth)	Comment
"Bitstream DSL Pro" Standard profile	202 kr	Comparable to "best efforts"
"Bitstream DSL Pro" VOIP profile	245 kr	Comparable to "real time"
CoS Premium %	21.3%	

BUBA	\$	8.93
EUBA40	\$	9.35
EUBA90	\$	9.88
EUBA180	\$	10.84

- Difference between BUBA price and EUBA180 price = CoS Premium

- EUBA40 = ((EUBA180 - BUBA) / 180) x 40 + BUBA

- EUBA90 = ((EUBA180 - BUBA) / 180) x 90 + BUBA

138. Table 9 below provides a summary of the prices for the UBA variants in comparison to the current retail-minus prices for UBA variants.

Table 9: Comparing retail-minus and cost-based monthly prices for UBA variants (NZD)

Variant	Retail-minus price	Cost-based price
BUBA	21.46	8.93
EUBA40	25.86	9.35
EUBA90	33.91	9.88
EUBA180	40.78	10.84

Non-recurring UBA charges

139. In regulating the UBA service and variants, the Commission also determined connection and transfer charges in accordance with the IPP. The original (retail-minus) IPP set the charges based on the prices charged by Telecom's retail unit, resulting in a cost of connection of \$0 (as Telecom offered free connection when retail customers agreed to a fixed-term contract).
140. Schedule 2 of the UBA STD sets out the prices for a number of services available to access seekers in relation to the provisioning of the UBA service. These relate to non-recurring charges which are classified as either 'core' or 'sundry' charges.
141. The Commission concluded in the UBA STD that all core charges must be determined in accordance with the initial pricing principle.⁵¹
142. Core and sundry charges are reviewed and updated annually in accordance with the processes set out in clause 3.1.1 and 3.1.2 of Schedule 2 to the UBA STD. These

⁵¹ UBA STD, para 129.

prices are generally determined with reference to increases in the labour cost index and/or the prices paid by Chorus to field service companies under contract.

143. A number of the service charges include the following cost components, with the direct front office and administration charges adjusted annually by the labour cost index:⁵²
- 143.1 a 10% mark-up for common costs
 - 143.2 a front office charge to cover the costs of managing the transaction
 - 143.3 an administration charge
144. Several 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.

Core charges

145. Core charges include, in addition to the monthly service charges for the UBA services, the price for:
- 145.1 New connections, and
 - 145.2 Transfers.
146. The Commission has determined that these prices must be set using the initial pricing principle. For consistency with the benchmark set used to set the prices for the additional costs of the Basic and Enhanced services, we have benchmarked against comparable core charges applied in Denmark and Sweden.
147. To be able to determine the comparable services in the benchmarked set, the core charges are split into 3 categories:
- 147.1 New service connection (assisted)⁵³
 - 147.2 Transfer between services (no port change)⁵⁴
 - 147.3 Transfer between services (port change)⁵⁵
148. A list of the core charges and the mapping mentioned above are shown in Attachment 5.

⁵² The front office and administration charges are Chorus confidential information.

⁵³ Component 1.1 of schedule 2 of the UBA STD, see attachment 6.

⁵⁴ Components 1.31, 1.32, 1.33, 1.34, 1.35 and 1.36 of schedule 2 of the UBA STD; where there is no port change at the DSLAM. See attachment 6.

⁵⁵ Components 1.32 and 1.36 of schedule 2 of the UBA STD; where a port change at the DSLAM is required. See attachment 6.

149. We have been unable to identify comparable benchmarks for components 1.9 and 1.10. These charges have been calculated by applying the current ratios between these components and 1.32 to the benchmarked 1.32 charge.⁵⁶
150. Due to a lack of directly comparable services the Commission has made a number of assumptions to enable comparability. Table 10 details the mapping of the service charges in Denmark and Sweden that the Commission considers provide the most robust comparability.

Table 10: Mapping of services

	Denmark	Sweden
New service connection (assisted)	Have used "Oprettelse - m/tekniker" > BSA new install assisted	Have used "Bitstream DSL Consumer - hel ledning (tillkommande natarbete)" > shipping cost for whole line with additional networking
Transfer between services (no port change)	Have used "Fra BSA uden PSTN telefoni" > Changing service from naked to clothed > assume no site visit required	Have used "Bitstream DSL Consumer - Produktbyte från Delad till Hel ledning" > Product Switching from Shared to Full management > assume no site visit required
Transfer between services (port change)	Have used "Konvertering fra ATM BSA til eBSA" > Converting from ATM to ethernet > assume site visit by technician required	Have used "Bitstream DSL Consumer och Business - migrering (från Kopparaccess eller TeliaSonera IP Stream)" > Migration from Copper Access or TeliaSonera IP Stream > assume site visit by technician required

151. These services result in the following price points shown in Table 11. There is a decrease in the cost of transferring between services and an increase in the cost of a new service connection.

⁵⁶ For 1.9 and 1.10 with a port change at the DSLAM, the calculated charge is $(\$96.75/\$109.55) \times \$74.6 = \65.88 . For the service variants that do not involve a port change at the DSLAM, the calculated charge is $(\$4.82/\$23.03) \times \$15.17 = \3.17 . See attachment 4 for a list of core charges, including current and new prices.

Table 11: Core charges price points

Service type	Denmark	Sweden			
New service connection (assisted)	kr 805	1,114 kr			
Transfer between services (no port change)	kr 72	95 kr			
Transfer between services (port change)	kr 426	385 kr			
			Average	Current Charge	Variance
New service connection (assisted)	NZD 157.50	NZD 190.54	NZD 174.02	NZD 145.05	20%
Transfer between services (no port change)	NZD 14.09	NZD 16.25	NZD 15.17	NZD 23.03	-34%
Transfer between services (port change)	NZD 83.35	NZD 65.85	NZD 74.60	NZD 109.55	-32%
PPP rate	5.11	5.85			

152. Attachment 5 provides the current and proposed prices. For component 1.1 there is a more expensive price point which includes a modem. The new price is the “new service connection (assisted)” price plus the difference between the current prices, which is the cost of the modem.

Sundry charges

153. Sundry charges are reviewed and updated annually in accordance with the processes set out in clause 3.1.1 and 3.1.2 of Schedule 2 to the UBA STD. These prices are generally determined with reference to increases in the labour cost index and/or the prices paid by Chorus to field service companies under contract.

154. As sundry charges are updated annually, the Commission’s view is that we do not need to re-determine the price of sundry charges at this time.

Other considerations

155. Fixed-line voice services, commonly referred to as **POTS**, or ‘Plain Old Telephone Service’, are resold by Telecom (under an agency arrangement with Chorus) to access seekers, who use the service – often in combination with the UBA service – to provide voice services to their end-users. Fixed-line voice services⁵⁷ are listed as regulated under Schedule 1 of the Act, but are not currently subject to price regulation.
156. The UBA service and Telecom’s resold POTS service both use Chorus’ unbundled copper local loop network.
157. The Act requires that the Commission ensure that access providers do not double-recover costs – such as the unbundled copper local loop – for regulated services:⁵⁸

Application of pricing principles for designated access services

In applying an applicable initial pricing principle or an applicable final pricing principle, the Commission must ensure that an access provider of a designated service does not recover costs that the access provider is recovering in the price of a designated or specified service provided under a determination prepared under section 27 or 30M or a designated or specified service provided on commercial terms.

158. As the Commission does not currently set the price of the local access and calling service, the Commission is compelled by the Act to put in place some provision to ensure there is no double-recovery of the full unbundled copper local loop price for end-users, once in the price of the resold POTS service, and again in the price of the UBA service. We therefore propose to put in place the following condition, to have effect from 1 December 2014:

For service component charges 2.1 – 2.8 which include the Geographically Averaged UCLL component of the UBA service charge, Chorus may not assess a separate charge to the Access Seeker or any other party that includes the costs of Chorus’ full unbundled copper local loop network for that line and must, if the non-UBA service being purchased by the Access Seeker or other party includes such costs, deduct such costs from the price paid for the other service.

⁵⁷ See Local access and calling service offered by means of fixed telecommunications network, Schedule 1 of the Act.

⁵⁸ Clause 4B of Schedule 1 of the Act.

Glossary

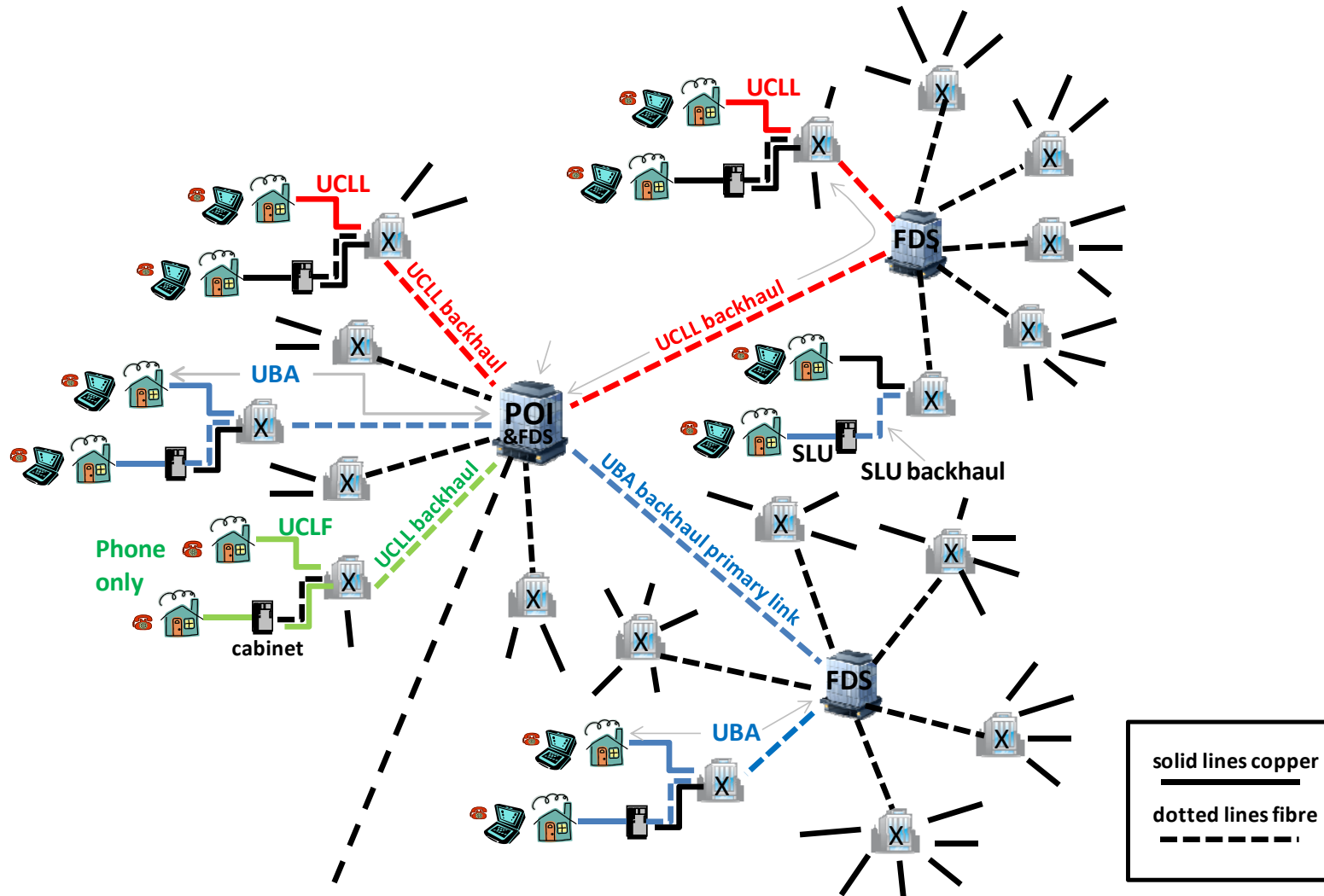
Act	Telecommunications Act 2001
ADSL	Asymmetric Digital Subscriber Line
Amendment Act	Telecommunications (TSO, Broadband, and Other Matters) Amendment Act 2011
ASNAPOI Handover Point	The Access Seeker side of the data switch in the ASNAPOI
ATM	Asynchronous Transfer Mode
Chorus	Chorus New Zealand Limited
DSLAM	Digital Subscriber Line Access Multiplexer. A network device that connects multiple customer digital subscriber line (DSL) interfaces to a high-speed digital communications channel
FDS (first data switch)	The UBA Service first data switch (or equivalent facility) in Chorus's Network where the Access Seeker is being supplied with, or may potentially be supplied with, the UBA service
FDS Handover Point	The Access Seeker side of the data switch in the FDS
FPP	Final pricing principle
IPP	Initial pricing principle
OFDF	Chorus' Optical Fibre Distribution Frame
UBA STD	Chorus' unbundled bitstream access standard terms determination (Commerce Commission decision 611, 12 December 2007)
UBA Backhaul STD	Standard Terms Determination for the designated service Chorus' unbundled bitstream access backhaul (Commerce Commission decision 627, 27 June 2008)
UCLL	The designated service Chorus' unbundled copper local loop, describe in Schedule 1 of the Act
UCLL STD	Standard Terms Determination for the designated service Chorus' unbundled copper local loop (Commerce Commission Decision 609, 7 November 2007)
UFB	Ultra-fast broadband

Attachment 1: Service Description

The full UBA service description is attached as a separate document.

<http://www.comcom.govt.nz/assets/Telecommunications/STD/UBA-Standard-Term-Determination-30-Nov-2011/UBA-STD-Sch.-1-Service-Description-Consequential-Amendments-Updated-30-November-2011.pdf>

Attachment 2: Illustrative diagram of Chorus' copper network



Attachment 3: Detailed benchmarking methodology

Price control method

159. Under the Act, the Commission is required to set an IPP price for the UBA service that is a proxy for the price that would be set under the FPP. The FPP for the UBA service is TSLRIC, total service long-run incremental cost.

160. TSLRIC is defined in the Act as:

TSLRIC, in relation to a telecommunications service,—

(a) means the forward-looking costs over the long run of the total quantity of the facilities and functions that are directly attributable to, or reasonably identifiable as incremental to, the service, taking into account the service provider's provision of other telecommunications services; and

(b) includes a reasonable allocation of forward-looking common costs

161. Starting from an initial benchmark set of 30 countries, we have selected benchmark countries that use a TSLRIC approach for setting the price of UBA services. The following criteria have been used for making this selection:

- 1.1 **Cost-based price control.** The unbundled bitstream access price is regulated using a cost-based price method.
- 1.2 **Forward-looking TSLRIC.** A TSLRIC methodology, or equivalent, is used to calculate the regulated price.
- 1.3 **Current costs.** The regulated price is set based on current (forward-looking) costs.
- 1.4 **Verified cost model.** The cost model is designed or expressly reviewed and approved by the regulator.

Cost-based price control

162. We found that regulators in 19 of the countries do not use a cost-orientated price control method for setting UBA prices, for example:

163. **The Netherlands** only uses a cost-orientated price control approach for a high-quality, business market service. This service is not a comparable benchmark for the New Zealand UBA service.

164. **Australia** uses a retail-minus price control method to set regulated prices for wholesale bitstream services.

165. **Italy** sets a price based on a cost-based price for the LLU services with an 'economic space' margin added to reflect the additional cost in the provision of wholesale bitstream services. The economic space has been set according to the wholesale prices approved by the Italian regulator, AGCOM, before the cost model was

developed, which was a retail-minus approach. Consequently, the regulated wholesale bitstream price is not fully cost-based.

166. **Hungary** applies a retail-minus approach to setting bitstream access prices for all service components beyond DSLAM access. The only part of the wholesale bitstream service that is priced on a cost basis is the access at the DSLAM. This handover point is not comparable to New Zealand.

TSLRIC model (or equivalent)

167. TSLRIC is an economic approach to costing that can be determined using a top-down or a bottom-up costing approach. TSLRIC, as set out in the Act, requires a determination of the direct and incremental costs of providing a service, and an allocation of the common costs.
168. We have benchmarked only against countries where prices for wholesale bitstream services are set using a TSLRIC (or equivalent) pricing methodology. The Commission has previously accepted models based on a long-run incremental cost (LRIC+) or a long-run average incremental cost (LRAIC) methodology as being equivalent to TSLRIC, on the basis that these methodologies estimate forward-looking costs over the total service increment and include a reasonable allocation of common costs.⁵⁹
169. The Commission considers that models based on a fully distributed cost (FDC) methodology are not a good proxy for a TSLRIC model. The literature we have reviewed indicates that the FDC and TSLRIC methods may lead to substantially different results and that FDC approaches are not a reasonable proxy for TSLRIC.⁶⁰ The Commission has previously rejected FDC models from benchmark sets in UCLL and MTAS. Accordingly, we have excluded countries using FDC models to set regulated prices from its benchmark sets.
170. France, Spain, Bahrain and the United Kingdom have been excluded from the current benchmark set because these countries use FDC models for setting UBA prices.

The cost standard of the model is current cost

171. Consistent with the forward-looking requirement of the IPP, the benchmark prices are required to be based on forward-looking costs. Forward-looking costs are costs that will be incurred in the future in providing the services. This involves estimating costs on the basis of the current prices of inputs and given the availability of modern technologies. The aim is to estimate the cost of providing services in the future rather than the past.

⁵⁹ Standard Terms Determination for the designated services of the mobile termination access services (MTAS) fixed-to-mobile voice (FTM), mobile-to-mobile voice (MTM) and short messaging services (SMS) (Commerce Commission Decision 724, 5 May 2011) (MTAS STD) at [245].

⁶⁰ Charles River Associates, July 2012, *“Costing methodologies and incentives to invest in fibre”* (Charles River Associates); Plum Consulting, March 2011 *“Costing methodology and the transition to next generation access”*

172. TSLRIC (or equivalent) models can be based on CCA or historic cost accounting (HCA). CCA is a forward-looking costing methodology, where assets are valued at their current replacement cost. The HCA methodology is based on historic cost information, where assets are valued and depreciated at the cost recorded at the time of their purchase.
173. As the cost needs to be forward-looking to comply with the IPP, we have eliminated those countries using only HCA.
174. Poland was excluded from the benchmark set because it uses HCA in its LRIC model used for setting UBA prices.

The cost model is verified by the regulator

175. We have only included countries in the benchmark set where the cost model has been verified and reviewed by the regulator. This verification requirement ensures that the regulated prices in each benchmark country are developed using a TSLRIC methodology, with a set of forward-looking, efficient costs.
176. We have removed the following three countries from the benchmark set, due to non-verified cost models or models being under review:
177. **Slovakia** is not considered to meet the benchmarking criteria because its cost model is currently in an appeal process and no final results are available.
178. In **Switzerland** the incumbent operator provides the model to the regulatory authority to set the price for wholesale bitstream services. The Swiss regulatory authority, BAKOM, will only review prices on demand of access seekers. The regulator has confirmed that the cost model for the bitstream services component of the network has not been reviewed. We cannot, therefore, be certain that the model meets all the requirements for efficient network costs.
179. In **Greece**, the incumbent operator's top-down LRIC model is used for setting the UBA price. The model is checked by the regulator, although the extent to which the model is verified is unknown. It appears that the model does not use efficient, forward-looking costs; and the top-down model that is used is likely to include the current inefficiencies in the network and therefore over-estimates the costs of UBA.

Attachment 4: Dimensions of the UBA service in Denmark, Sweden, Belgium

Denmark

- 180. The Danish service is similar to the Basic UBA service. A hybrid (bottom-up and top-down) LRAIC cost model has been employed using a fibre-to-the-node architecture with Ethernet and IP technology.
- 181. There are 3 handover points available to Danish access seekers; at the DSLAM, at the Layer 2 parent switch (FDS) and at the Layer 3 router. The parent handover point is similar to that in New Zealand.
- 182. The product is ADSL based and has a number of line speeds available; from 256kbps to 50Mbps. The Commission has chosen the price for the 256kbps speed service. Transport to the FDS is included in the service price.
- 183. There is no differentiation for quality of service and it is assumed this is a best efforts service.

Sweden

- 184. Sweden also uses a hybrid LRAIC cost model utilising fibre-to-the-node (FTTN) architecture with Ethernet technology.
- 185. The Swedish regulator allows the incumbent to add an additional 6% to 9% allowance for “economic space” between local loop and bitstream services. The prices used by the Commission exclude this allowance.
- 186. The handover point is at the FDS and is differentiated into “Consumer” and “Business” segments. The “Consumer” data has been used by the Commission.
- 187. Both ADSL and VDSL services are offered. The ADSL service line speed ranges from 250kbps to 24Mbps while the VDSL service is from 30Mbps to 60Mbps. The Commission has chosen the price for the 250kbps speed ADSL service. Transport to the FDS is included in the service price.
- 188. There is also a “Pro” service which offers different class of service levels. The service offered as “VOIP” quality has been used as comparable to the “real time” service as defined for Enhanced UBA services.

Belgium

- 189. Belgium has a bottom-up LRAIC model which models a fibre-to-the-node network and uses Ethernet technology.
- 190. The handover point for the wholesale bitstream service is technically at the parent switch but the network configuration is different to that in New Zealand. The DSLAM and FDS are collocated in the main distribution frame (MDF) which means that there is little transport to the aggregation point. Conversely there are many more FDSs than is found under the configuration in New Zealand. Whether the cost of additional FDSs would offset the additional transport required in New Zealand has

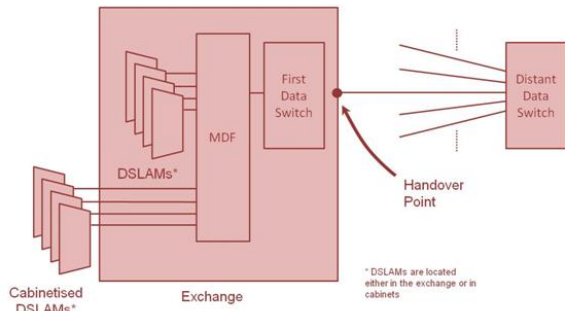
not been quantified. This difference means that the Belgian service is not directly comparable to Basic UBA at the handover point.

- 191. The bitstream service can be purchased as a “best efforts” or “highest priority” service. The “highest priority” would be comparable to the “real time” service as defined for enhanced services.

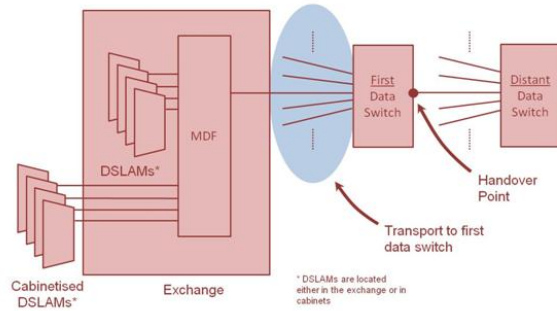
Figure 6: NZ and Belgium - differences in handover points

New Zealand

MDF and first data switch are physically co-located in around **90 (or 16%) of exchanges**

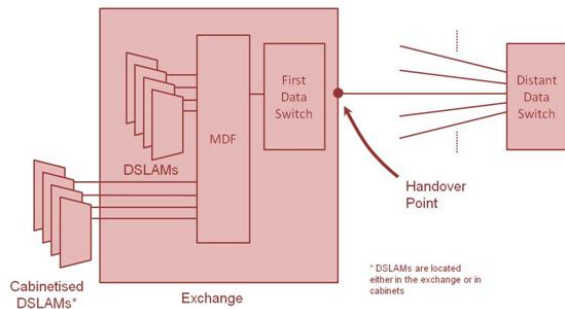


MDF and first data switch are physically separate in around **460 (or 84%) of exchanges**



Belgium

No physical separation between MDF and first data switch in **all exchanges**



Attachment 5: Summary of core charges

Service Component	Description	Current Prices	New Prices	Comparable Service
1.1 UBA Service New Connection, any instance	The establishment of a new service instance of the UBA Service (i.e. there is no UBA change plan). The UBA service is without POTS and where the upstream speed is unrestricted.	145.05 183.06	\$ 174.02 \$ 212.03	New service connection (assisted)
1.9 Other broadband service (including UBS) to any UBA service plan.	The change plan of an End User from broadband services (other than the UBA Service) provided over Chorus's Network to any UBA service, as authorised by the End User.	4.82	\$ 3.17 \$ 65.88	Same differential as between 1.32
1.10 Any UBA service to any other UBA service change plan	The change plan of an End User from any UBA service to any other UBA Service (including, until three years after Separation Day, any change to a UBA service with or without POTS), as authorised by End User.	4.82	\$ 3.17 \$ 65.88	Same differential as between 1.32
1.31 Transfer of Basic UBA Service from an Access Seeker to a Basic UBA Service with another Access Seeker	The transfer of a Basic UBA Service with one Access Seeker to a Basic UBA Service with another Access Seeker, as authorised by the End User.	23.03	\$ 15.17	Transfer between services (no port change)
1.32 Transfer of Basic UBA Service from an Access Seeker to an Enhanced UBA Service with another Access Seeker.	The transfer of a Basic UBA Service with one Access Seeker to an Enhanced UBA Service with another Access Seeker, as authorised by the End User.	23.03	\$ 15.17 \$ 74.60	Transfer between services (no port change) & (port charge)
1.33 Transfer of Enhanced UBA Service from an Access Seeker to a Basic UBA Service with another Access Seeker.	The transfer of an Enhanced UBA Service with one Access Seeker to a Basic UBA Service with another Access Seeker, as authorised by the End User.	23.03	\$ 15.17	Transfer between services (no port change)
1.34 Transfer of Enhanced UBA Service from an Access Seeker to an Enhanced UBA Service with another Access Seeker.	The transfer of an Enhanced UBA Service with one Access Seeker to an Enhanced UBA Service with another Access Seeker, as authorised by the End User.	23.03	\$ 15.17	Transfer between services (no port change)
1.35 Transfer of other broadband service from an Access Seeker to a Basic UBA Service with another Access Seeker.	The transfer of a broadband service (other than the UBA Service) provided over Chorus's Network with one Access Seeker to a Basic UBA Service with another Access Seeker, as authorised by the End User.	23.03	\$ 15.17	Transfer between services (no port change)
1.36 Transfer of other broadband service from an Access Seeker to an Enhanced UBA Service with another Access Seeker.	The transfer of a broadband service (other than the UBA Service) provided over Chorus's Network with one Access Seeker to an Enhanced UBA Service with another Access Seeker, as authorised by the End User.	23.03	\$ 15.17 \$ 74.60	Transfer between services (no port change) & (port charge)
1.39 UBA Service Relinquishment	Where the Access Seeker terminates supply of the UBA Service in respect of a particular Access Seeker's End User. This entails Chorus updating its records and billing. Chorus may either physically disconnect the UBA at any point between the exchange and the End User's premises or leave the MPF circuit intact.	Apply clause 4a		
1.40 UBA Service move address	The costs for this service are aligned with Chorus's charges at retail for move addresses and are in three categories: Connection only, connection and wiring, and Modem installation charges.	Apply clause 4a		
1.41 Data interleave toggle	This is the switching of the data interleave. The default setting is on for the Basic Service and high for Enhanced Services. End Users can ask their Access Seeker to have interleave turned off (for the Basic Service) or low (for Enhanced Services) in relation to services provided over the UBA Service.	no charge		
2.13 Handover fibre space rental charge	Monthly space rental charge for Handover Fibres co-located on Chorus property.	27.09		