ISBN no. 978-1-869453-81-7

Project no. 13.01/14544

Consultation paper outlining our proposed view on regulatory framework and modelling approach for UBA and UCLL services

Date: 9 July 2014

Contents

Acronyms and abbreviations

ACCC	Australian Competition and Consumer Commission
Act	Telecommunications Act 2001
ADSL	Asynchronous digital subscriber line
Amendment Act	Telecommunications (TSO, Broadband, and Other Matters) Amendment Act 2011
ATM	Asynchronous Transfer Mode
CPI	Consumer price index
DBA	Danish Business Authority
DSL	Digital subscriber line
DSLAM	Digital subscriber line access multiplexer
FPP	Final Pricing Principle
FTTH	Fibre-to-the-home
FTTN	Fibre-to-the-node
FWA	Fixed wireless access
G-PON	Gigabit Passive Optical Networks
HFC	Hybrid fibre-coaxial
IP	Internet protocol
IPP	Initial Pricing Principle
LFC	Local fibre company
LTE	Long-term evolution
MEA	Modern equivalent asset
P2P	Point-to-point
PSTN	Public switched telephone network
RBI	Rural broadband initiative
RSP	Retail service provider

SLU	Sub-loop unbundling
STD	Standard terms determination
TSLRIC	Total service long run incremental cost
TSO	Telecommunications service obligations
UBA	Unbundled bitstream access
UBA STD	UBA standard terms determination
UCLFS	Unbundled copper low frequency service
UCLL	Unbundled copper local loop
UCLL STD	UCLL standard terms determination
UFB	Ultra-Fast Broadband
VoIP	Voice over internet protocol
WACC	Weighted Average Cost of Capital

Executive summary

1. We are tasked with determining total service long-run incremental cost (TSLRIC) based prices for the UCLL and UBA services for the first time. Although the two price review determinations are distinct processes which require different considerations, we are conducting them in parallel given the savings this offers to both us and interested parties.

2. We have been greatly assisted by the views of submitters gathered over several rounds of consultation, the two workshops held in December 2013 and March 2014, and the expertise of our external expert cost modellers TERA Consultants and economic advisor Professor Ingo Vogelsang.

3. In response to submissions from access seekers and Chorus, we have amended our proposed timetable for undertaking the price review determinations. Specifically, concerns were raised by a number of interested parties that they would be unable to engage fully or submit meaningfully on the FPP processes. While we appreciate that the extension to the timeframe may prolong market uncertainty, our view is that the additional time will allow us to consider a broader range of matters and for parties to more effectively engage in the process.

4. Since receipt of the UCLL and UBA FPP applications, we have been developing our regulatory framework, and working through the key conceptual issues and process options for building TSLRIC cost models for the UCLL and UBA services.

5. In this paper we outline our proposed regulatory framework for determining prices for the UCLL and UBA services in accordance with the respective FPPs. This includes our views on the following:

    5.1 The requirements in the Act, including TSLRIC cost modelling, forward looking costs, the requirements in section 18, relativity, geographic averaging and the prohibition of any double recovery of costs.

    5.2 The appropriate TSLRIC objectives, choice of modern equivalent asset (MEA) and regulatory period to guide our price review determination for the UCLL and UBA services.

    5.3 Although parties have asked us to provide certainty on whether we intend to backdate the UCLL and UBA prices we determine as a result of these processes, we are unable to make a decision on whether to backdate, or not, until the draft pricing review determinations.

6. In April, TERA led a modelling methodology workshop attended by interested parties and analysts. Following input from TERA and interested parties, and informed by our regulatory framework, we have reached preliminary views on a number of key design features to our TSLRIC models for the UCLL and UBA services, including:

    6.1 For the UCLL service we intend to model a fibre-to-the-home network, with fixed wireless in remote area. We will use Chorus' existing number of

connections with no migration to, or away, from the modelled network. We will price the least-cost replacement of the service and propose no deduction if the replacement has higher performance.

6.2 For the UBA service, we will model using Chorus' copper based inputs and the existing scope of the UBA service.

6.3 We propose to value assets at optimised replacement cost (ORC), regardless of whether Chorus' existing assets could be re-used. We do propose to allow for the use of third party infrastructure.

6.4 Our preliminary view is that a tilted annuity depreciation methodology is most appropriate.

7. We are now seeking the views of interested parties on our proposed regulatory framework and key modelling decisions and inputs prior to our experts TERA commencing modelling.

8. Submissions on this paper and the accompanying papers prepared by TERA and Professor Ingo Vogelsang are due on 6 August 2014, followed by Cross-submissions on 20 August 2014.

9. In parallel, we are consulting on two expert reports by Oxera and Dr Martin Lally on the weighted average cost of capital (WACC).[1] This consultation will help inform the appropriate WACC for the UCLL and UBA FPPs. Following the consultation on the papers by Oxera and Dr Martin Lally, the next opportunity to comment on the specific WACC for UCLL and UBA, will be in the draft determination consultation period for the UCLL and UBA FPPs.

10. We appreciate that interested parties may currently be constructing their own cost models which they would like us and others to consider as part of this process. To enable all parties sufficient time to consider any such models without prolonging the proposed process, we request that any party that wishes to provide us with its own cost models should do so by 5pm, 1 December 2014. We will publish any cost models received on 2 December 2014. Any cost models provided after 1 December 2014 will not be considered in the final price review determinations.

[1] These papers and the dates for the consultation period can be found on the UBA / UCLL FPP webpage on our website. http://www.comcom.govt.nz/regulated-industries/telecommunications/regulated-services/standard-terms-determinations/unbundled-copper-local-loop-and-unbundled-bitstream-access-services-final-pricing-principle/

Purpose of this document

12. The purpose of this paper is to set out, and seek the views of interested parties on:

    12.1 our proposed view of the regulatory framework for the UCLL and UBA TSLRIC cost modelling exercises;

    12.2 our preliminary views on a number of fundamental assumptions for the development of a TSLRIC cost model for the UCLL and UBA services; and

    12.3 our updated process, which we have revised in response to:

        12.3.1 concerns raised by parties during the most recent consultation; and

        12.3.2 requests to consider additional matters as part of the TSLRIC cost modelling exercise.

Background to our TSLRIC cost modelling of the UCLL and UBA services

The UCLL and UBA services

13. Since 1 December 2011 (the Telecom-Chorus separation date), Chorus has been the owner of the fixed line access network that carries voice and data traffic between local exchanges and end-user premises. This is sometimes referred to as the "copper network" with each individual link referred to as a "local loop".

14. Access seekers who wish to offer broadband (internet) services utilising the copper network typically do so by purchasing the UCLL service or the UBA service from Chorus. These services are regulated under the Telecommunications Act 2001 (Act). An access seeker may take the UCLL service and install its own equipment in the exchange. This is often referred to as "unbundling".

15. When Chorus provides the UBA service, it handles the broadband traffic between the end-user and the handover point on behalf of the retailer. That is, Chorus manages and provides access to the local loop, the exchange or cabinet (and the equipment in it, including a DSLAM), and the aggregation path to transport the broadband traffic to the "data switch" containing the handover point.

16. The UBA service allows an access seeker to offer a broadband service to end-users without needing to install its own bitstream equipment. Alternatively, as discussed above, an access seeker may take the UCLL service and install its own equipment in the exchange (ie, unbundle).

17. The full UBA price paid by retailers is the sum of the UCLL price per line per month plus a price representing the additional costs incurred in providing the UBA service over and above the UCLL service (eg, provision of a DSLAM in the exchange). Industry usage of the term "the UBA price" refers to the price component that represents the additional costs of providing UBA.

We determined a benchmarked price for the UCLL service under the IPP in the Act

18. The Act requires us to determine a price for the UCLL service. In the first instance we benchmark prices against comparable countries under the initial pricing principle (IPP).

19. In 2012 we initiated a UCLL benchmarking review.[2] The purpose of the UCLL benchmarking review was to update the benchmarking data in order to determine UCLL monthly rental and connection charges.[3] Our 3 December 2012 price determination for the UCLL service:

    19.1 determined a new geographically averaged price for UCLL of $23.52 per line per month, with the new geographically averaged price to come into effect on 1 December 2014;

    19.2 determined a new geographically averaged price for SLU of $14.21 per line per month, with the new geographically averaged price to come into effect on 1 December 2014;

    19.3 updated the geographically averaged price for UCLFS to $23.52 per line per month, with the new price come into effect immediately (that is, from 3 December 2012);[4]

    19.4 updated the non-urban and urban UCLL monthly rental prices to $35.20 and $19.08 respectively, with the prices coming into effect immediately and applying until 30 November 2014; and

    19.5 updated the non-urban and urban SLU monthly rental prices to $21.26 and $11.52 respectively, with the prices coming into effect immediately and applying until 30 November 2014.

We determined a benchmarked price for the UBA service under the IPP in the Act

20. The Act also requires us to determine a price for the UBA service. In the first instance we are required to benchmark prices against comparable countries under the IPP.

21. Prior to the structural separation of Chorus and Telecom on 1 December 2011, the Act provided for the UBA price to be determined on a "retail-minus" basis. The Telecommunications (TSO, Broadband, and Other Matters) Amendment Act 2011 (Amendment Act) changed the UBA pricing principles from "retail-minus" to a forward-looking cost-based price. The new IPP required us to determine cost-based prices for the UBA service that will apply from three years after separation day, that is, from 1 December 2014.

---

2 Under section 30R of the Act and in accordance with the standard terms determination sections of the Act at sections 30K - 30Q.

3 Commerce Commission "Final determination on the benchmarking review of the unbundled copper local loop service" (3 December 2012), NZCC 37, paragraph [32].

4 The UCLFS price was geographically averaged from separation day, 1 December 2011, when the service was introduced.

22. On 5 November 2013, we set cost-based prices for the UBA services as follows:[5]

UBA service	UCLL ($)	UBA additional costs ($)	Total monthly price ($)
Basic UBA	23.52	10.92	34.44
EUBA 40	23.52	13.25	36.77
EUBA 90	23.52	13.82	37.34
EUBA 180	23.52	14.85	38.37

We are now required to determine TSLRIC cost-based prices for the UCLL and UBA services

23. Subsequent to determining prices for the UCLL and UBA services under the respective IPPs, we received applications requiring us to undertake pricing review determinations in accordance with the final pricing principle (FPP) for each service:

    23.1 For UCLL, "TSLRIC"; and

    23.2 For UBA, "The price for Chorus's unbundled copper local loop network plus TSLRIC of additional costs incurred in providing the unbundled bitstream access service".

24. In December 2013, we published a UCLL Process and Issues paper which set out and sought the views of parties on:

    24.1 our proposed process for the cost modelling and price review determination of the UCLL service; and

    24.2 a number of conceptual issues associated with the TSLRIC methodology, including:

        24.2.1 the range of approaches to TSLRIC cost modelling;

        24.2.2 the features and functionality of the UCLL service, and their relevance to selecting the MEA for our modelling of the service; and

        24.2.3 a range of approaches to key modelling decisions including depreciation, demand, cost allocation, and operating expenditure.

25. In February 2014, we released a UBA Process and Issues paper, which set out our preliminary view on the MEA for the UBA service, and our proposed timetable for completing the FPPs for the UBA and UCLL services by 1 December 2014. We also

[5] Commerce Commission "Unbundled Bitstream Access Service Price Review, Decision [2013] Final determination to amend the price payable for the regulated service Chorus' unbundled bitstream access made under s 30R of the Telecommunications Act 2001" (5 November 2013), NZCC 20, paragraph [7].

sought the views of parties on the conceptual issues associated with the TSLRIC methodology raised in the process and issues paper on the UCLL service but in relation to the UBA service.

26. Following our consideration of submissions and cross-submissions, on 3 March 2014, we published a further consultation paper[6] which sought views on:

    26.1 the role of relativity in our price setting process; and

    26.2 preliminary legal views of our external legal counsel James Every-Palmer on:

        26.2.1 the relevant considerations for determining the MEA for the UCLL service; and

        26.2.2 our discretion to backdate the FPP prices.

27. Two workshops were held, on 19 December 2013 and 28 March 2014, to assist interested parties with the submission process. On 9 April 2014, we held a modelling methodology presentation for interested parties with our external consultants, TERA Consultants (TERA).

Our revised process for the UCLL and UBA FPP determinations

28. Since receipt of the UCLL and UBA FPP applications we have been working through the key conceptual issues and process options for the FPPs.

29. We have been greatly assisted by the views of submitters gathered over several rounds of consultation, the two workshops and the expertise of our external consultants TERA and Professor Ingo Vogelsang.

30. In the UBA Process and Issues paper we set out our proposed timeline to complete the FPP for the UBA service by 1 December 2014. We noted that the UBA IPP prices would take effect from that date, and given the UBA price may change under the FPP, any further delay would result in additional uncertainty for the market. In addition, the question of whether we would backdate the FPP price would likely lead to further uncertainty.

31. On 28 March 2014, we confirmed to parties that we intended to complete the FPPs for both the UBA and UCLL services by 1 December 2014.

32. In the most recent round of consultation, access seekers raised significant concerns that our proposed process would not provide them with sufficient time to adequately engage, for instance:

---

[6] In addition, a supplementary paper was published on 25 March 2014. See Commerce Commission "Further consultation paper on issues relating to determining a price for Chorus' UCLL and UBA services under the final pricing principle" (14 March 2014) and Commerce Commission "Further consultation paper on issues relating to determining a price for Chorus' UCLL and UBA services under the final pricing principle - supplementary paper" (25 March 2014).

32.1 Orcon and CallPlus noted that the timeframe had collapsed the initially proposed consultation into a "single omnibus draft determination consultation". Orcon and CallPlus stated that there could not be enough time for us to fully develop a TSLRIC model and allow parties to submit meaningfully on our methodology and draft determination.[7]

32.2 Vodafone submitted that we have not provided a clear or consistent explanation of the basis on which the MEA will be selected, instead only identifying non-exhaustive criteria on which we may rely:[8]

> …the Commission's guiding principle in conducting UBA and UCLL price reviews should be ensuring a robust and analytically rigorous process. Seeking to conclude both reviews by 1 December is most unlikely to deliver the Commission's goal of providing certainty to the industry; it simply increases the prospect that processes will play out in other fora.

32.3 Telecom submitted that our proposed process meant that parties would only have visibility of the cost model and key inputs at the same time as the draft determination, placing considerable focus on this phase. Telecom stated it would be preferable to spread parties' visibility of these inputs and key design parameters across several consultation periods.[9]

33. Chorus also submitted that there are a number of additional matters that it believes we are required to consider more fully than we previously intended to. For instance, if the UCLL and SLU prices differ (as under the benchmark approach) and UBA is averaged as today, then the relativity consideration raises further complications. Put simply, there is a different uplift/differential between SLU and UBA as compared to UCLL and UBA. Chorus considers that in itself is a clear flag that we must think about this much more deeply and more carefully.[10]

34. Chorus' request that we look very broadly at these matters (without expressing its own views as to what is required) has necessarily affected our timeframes given that we had not previously intended to consult on these additional matters prior to our draft determination.

35. Accordingly, on 22 May 2014, we notified parties of an extension to our timetable for determining prices under the FPP for the UBA and UCLL services, and our intention to release an additional paper with preliminary decisions on a number of modelling and conceptual topics in early July.

---

7 Orcon and CallPlus "Submissions by CallPlus and Orcon following the further consultation paper and the workshops" 11 April 2014, paragraphs [13.1]-[13.8].

8 Vodafone New Zealand Limited "Submission to the New Zealand Commerce Commission - Comments on further consultation papers on issues relating to determining a price for Chorus' UCLL and UBA services under the final pricing principle " 11 April 2014, paragraph [C32].

9 Telecom "UCLL and UBA FPP: further consultation and supplementary paper - Submission" 11 April 2014, paragraph [78].

10 Chorus "Submission in response to the Commerce Commission's Further consultation on issues relating to determining a price for Chorus' UCLL and UBA services under the final pricing principle – Consultation Paper (14 March 2014) and Supplementary Paper (25 March 2014)" 11 April 2014, paragraph [34].

36. While we appreciate that the extension to the timeframe may prolong uncertainty in the market, our view, informed by access seekers and Chorus, is that the additional time will allow us to consider a broader range of matters and for parties to more effectively engage in the process.

37. Telecom also highlighted the risk of the process being protracted by a party to the FPP putting an alternative cost model before us at a late stage in the process. Telecom suggested we seek confirmation from parties as to whether they intend to produce their own cost models, and to require them to do so within a certain timeframe.[11] Below, we confirm that any party that wishes to provide us with its own cost models must do so by 5pm, 1 December 2014 if it wishes us to take it into consideration prior to our final determinations. We will publish any cost models received on 2 December 2014.

38. Our indicative dates for the UBA and UCLL FPP processes are set out below:

Next steps	**Indicative date**
Interested parties' cost models due	1 December 2014
Draft Decision released	1 December 2014
Submissions on draft decision due	2 February 2015
Cross-submissions on draft decision due	16 February 2015
Conference	3-6 March 2015
Final decision released	April 2015

We are interested in your views

39. We would like to know your views on the issues raised in this paper. By providing your views, you will help us finalise the approach we take to our TSLRIC cost modelling exercise for the UCLL and UBA services.

40. Submissions on this consultation paper and the accompanying papers prepared by TERA and Professor Ingo Vogelsang are due on 6 August 2014.

41. Cross-submissions are then due on 20 August 2014.

42. Please address responses to: Keston Ruxton (Chief Advisor, Regulation Branch), c/o telco@comcom.govt.nz

[11] Telecom "UCLL and UBA FPP: further consultation and supplementary paper - Submission" 11 April 2014, paragraphs [75]-[80].

Regulatory framework

We are required to determine TSLRIC prices for the UCLL and UBA services

43. The Act requires us to set the prices payable for Chorus' unbundled copper local loop network (UCLL) and Chorus's unbundled bitstream access (UBA) designated access services. Pricing for the UCLL and UBA services consists of an IPP and FPP.[12]

44. As with other regulated services, the Act requires us to set an IPP price first. The IPP price provides a fast-track approximation of the price that would be set under the FPP.

45. Parties can then request that we determine a cost-based price in accordance with the FPP. In doing so, we must:

    45.1 follow the process set out in the Act for pricing review determinations;[13] and

    45.2 determine the prices of the UCLL and UBA services in accordance with the FPP using a forward-looking cost-based method (TSLRIC) by building a cost model for that purpose.[14]

46. We also have the option to request that Chorus calculate the UCLL and UBA prices.[15]

We benchmarked the UCLL IPP price

47. Since the introduction of the UCLL service under the Telecommunications Amendment (No 2) Act 2006:

    47.1 the IPP has been "Benchmarking against prices for similar services in comparable countries that use a forward-looking cost-based pricing methods"; and

    47.2 the FPP has been TSLRIC.

48. We updated our benchmarking of the UCLL IPP price on 3 December 2012. Under this review we:

    48.1 determined the new geographically averaged price for UCLL as $23.52 per line per month, with the new geographically averaged price to come into effect on 1 December 2014;

    48.2 determined a new geographically averaged price for SLU of $14.21 per line per month, with the new geographically averaged price to come into effect on 1 December 2014;

---

12 In relation to each service, the applicable IPP and FPP are set out in subpart 1 of Part 2 of Schedule 1 of the Act.

13 Subpart 4 of Part 2 of the Act.

14 Subpart 1 of Part 2 of Schedule 1 of the Act.

15 Section 45 of the Act.

48.3 updated the geographically averaged price for UCLFS to $23.52 per line per month, with the new price come into effect immediately (that is, from 3 December 2012);[16]

48.4 updated the monthly non-urban and urban UCLL prices to $35.20 and $19.08 respectively, with the prices to come into effect immediately and applying until 30 November 2014; and

48.5 updated the non-urban and urban SLU monthly rental prices to $21.26 and $11.52 respectively, with the prices coming into effect immediately and applying until 30 November 2014.

49. Five parties applied for a FPP pricing review.[17]

We benchmarked the UBA IPP price

50. For the UBA service, with effect from 1 December 2014:

50.1 The IPP is the UCLL price plus benchmarking the additional costs incurred in providing the UBA service against prices in comparable countries that use a forward-looking cost-based pricing methodology.

50.2 The FPP is the UCLL price plus TSLRIC (total service long run incremental costs) of additional costs incurred in providing the UBA service.

51. In the interim, the UBA price has been frozen for three years at the previous "retail-minus" price of $21.46 (per line, per month), which was based on Telecom's unregulated retail broadband prices as at 30 November 2011.

52. Section 77 of the Amendment Act required us to undertake a review of the UBA STD under section 30R of the Act to implement the new pricing principles, applicable from 1 December 2014. On 5 November 2013 we issued our final UBA IPP determination. That set a new price for the Basic UBA service of $10.92 per month.

53. Five parties applied for the price to be reviewed using the FPP.

Section 18

54. Under section 19 of the Act, we must consider the purpose set out in section 18 (including any applicable additional matters set out in Schedule 1 regarding the application of section 18) and make determinations that we consider best give, or are likely to best give, effect to the purpose set out in section 18.

---

16 The UCLFS price was geographically averaged from separation day, 1 December 2011, when the service was introduced.

17 Under section 42(1) of the Act.

55. 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.

56. Section 18(1) of the Act reinforces that competition is the key objective of our pricing review determinations. Our purpose in making the determinations is first and foremost to promote competition in telecommunications markets for the long-term benefit of end-users of telecommunications services within New Zealand.

57. In its recent decision on Chorus' appeal from our determination of the UBA IPP, the High Court held that section 18(1) is the "dominant" provision in section 18. Subsections (2) and (2A) are specified for the purpose of assisting analysis under section 18(1).[18]

58. Section 18(2) requires us to consider the efficiencies that will result, or will be likely to result, from our determination. We have treated "efficiencies" as referring to static (productive and allocative) and dynamic efficiencies. Where there is a trade-off between static and dynamic efficiencies, we have tended to give greater weight to dynamic efficiencies, given the emphasis on promoting competition over the long-term. Dynamic efficiencies are concerned with new and innovative products and services, or existing ones at better quality, which leads over the long-term to greater consumer choices and benefits. It is therefore a significant factor in promoting competition. This emphasis is reinforced in section 18(2A).

[18] *Chorus v Commerce Commission* [2014] NZHC 690 at [34].

59. Section 18(2A) requires us to consider 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." A decision that undermines incentives to invest is likely to undermine competition over the long run, as it would deter future investment, and consequently would not be for the long-term benefit of end-users.

60. In *Chorus v Commerce Commission*, the High Court noted that the statutory language is "not entirely prescriptive" as to the manner in which section 18 is to be applied.[19] Adopting submissions made on behalf of Vodafone, Kós J noted that statutes providing for economic regulation: [20]

> …present a chart of medium scale at best. The exact route to be taken is left to the judgment of the navigator, the decision-maker. Usually, as here, an expert tribunal for that very reason. In such cases, the decision-maker may have an "area of judgment".

61. His Honour also noted that, "to the extent that the language chosen by Parliament left choices open to the Commission, s 18 in my view provides the only relevant guidance necessary."[21]

The role of section 18 in the cost modelling exercise and price review determination

62. Webb Henderson submitted that we are required to best give effect to section 18 of the Act whenever we exercise a statutory discretion.[22]

63. Frontier Economics, on behalf of Vodafone, Telecom and CallPlus submitted that if we are faced with a choice of which of two (or more) approaches to follow on a particular modelling method or parameter, we should choose the method or parameter that is more likely to meet the underlying purpose in section 18.[23] Similarly, Chorus submitted that we should apply a section 18 framework to each choice in the 'decision tree' we face when developing the TSLRIC model.[24]

64. Telecom submitted that we should consider the effect of a package of internally consistent modelling choices, not just individual choices.[25] It also submitted that not each and every specific decision must be made to best give effect to section 18. All of the specific decisions through the process will impact on the assessment of

---

19 *Chorus v Commerce Commission* [2014] NZHC 690 at [139].

20 *Chorus v Commerce Commission* [2014] NZHC 690 at [15].

21 *Chorus v Commerce Commission* [2014] NZHC 690 at [170].

22 Webb Henderson "Memorandum to Vodafone on UCLL and UBA Price Review - Selection of an appropriate MEA" 29 April 2014, Footnote 3.

23 Frontier Economics "Determining a TSLRIC price for Chorus' UCLL service - A report prepared for Vodafone New Zealand, Telecom New Zealand and CallPlus" February 2014, p [7].

24 Chorus "Submission in response to the Commerce Commission's Process and issues paper for determining a TSLRIC price for Chorus' unbundled copper local loop service in accordance with the Final Pricing Principle" 14 February 2014, paragraph [173].

25 Telecom "Submission on Process and issues paper for determining a TSLRIC UCLL price" 14 February 2014, paragraph [19]

whether the overall determination best gives effect to section 18. It is that overall outcome that must best give effect to section 18.[26]

65. Section 18 assists us with our overall assessment of the determination. However, we also consider that section 18 may provide guidance at a number of decision points during the TSLRIC cost modelling exercise, including:

65.1 our choices on model design and approach;

65.2 the determination or selection of individual parameters in the cost modelling exercise; and

65.3 selecting a price within any relevant range provided by the modelling.

Relativity

66. The relativity between UCLL and UBA is an "additional matter" that must be considered regarding the application of section 18 to the UCLL and UBA services.[27]

67. In the UBA IPP decision, our starting presumption was that the relativity consideration would likely be maintained as both UCLL and UBA prices were to be set in accordance with similar TSLRIC-based forward-looking cost-based price methodologies.[28] We noted that this would be likely to provide incentives to unbundle where it was efficient to do so. We did not identify any reasons to believe an adjustment above and beyond forward-looking cost differences between UCLL and UBA would promote competition for the long-term benefit of end-users.

68. In our further consultation paper of 14 March 2014, we sought views on the role of relativity throughout the UBA and UCLL FPP pricing review determination processes, and in particular whether parties consider that there are additional matters or evidence that we should take into account regarding relativity in the FPP pricing review determinations.[29]

69. In its submission, Chorus disagreed with the proposition that applying TSLRIC pricing rules to the UBA and UCLL services can be assumed on its own to satisfy the relativity consideration. In its view, relativity should be used in the exercise of judgment that is involved in applying TSLRIC and making a decision that best promotes section 18.[30]

---

[26] Telecom "Submission on Process and issues paper for determining a TSLRIC UCLL price" 14 February 2014, paragraph [49].

[27] Section 19(b), Schedule 1 of the Act.

[28] Commerce Commission "Unbundled Bitstream Access Service Price Review, Decision [2013] Final determination to amend the price payable for the regulated service Chorus' unbundled bitstream access made under s 30R of the Telecommunications Act 2001" (5 November 2013), NZCC 20, paragraphs [274]-[278].

[29] Commerce Commission "Further consultation paper on issues relating to determining a price for Chorus' UCLL and UBA services under the final pricing principle" (14 March 2014), paragraph [4].

[30] Chorus "Submission in response to the Commerce Commission's Further consultation on issues relating to determining a price for Chorus' UCLL and UBA services under the final pricing principle – Consultation Paper (14 March 2014) and Supplementary Paper (25 March 2014)" 11 April 2014, paragraphs [151]-[153].

Chorus argued that relativity requires us to "…grapple with the ladder of investment and copper to fibre migration implications",[31] and lists a range of factors to which we "will presumably wish to turn [our] mind" as follows:[32]

> …UCLL in the market, the absence of SLU unbundling, that some say the ladder of investment is dead, the significant shift in the industry structure and FTTH policy and implications for migration to fibre and other change in the industry, what [the Commission] considers is efficient investment and what it does not and how [the Commission] makes those judgments.

70. Chorus submitted that the relativity consideration has further complexity if the UCLL and SLU prices differ (as they do under the benchmarked approach), because in those circumstances there is a different uplift/differential between SLU and UBA, and UCLL and UBA.[33] A related point in Chorus' submission is whether the UBA price is nationally averaged (as is currently the case), or disaggregated across UCLL and SLU lines.[34]

71. Chorus also submitted that we need to ask whether the relativity is sufficient to allow efficient investment, taking account of density considerations and having regard to relevant matters to form that view.[35]

72. CallPlus agreed with Chorus that applying TSLRIC pricing rules to the UBA and UCLL services cannot be assumed on its own to maintain relativity considerations.[36] CallPlus submitted that we should favour investment when considering relativity. CallPlus referred to:[37]

> …competitors on the ladder whose business models rely heavily on their ability to leverage their unbundled investments in order to create compelling consumer propositions both copper and fibre. Without the ability to refresh, keep current and make a return on those investments the ability of those competitors to transition to the fibre world will be seriously impacted.

---

31 Chorus "Submission in response to the Commerce Commission's Further consultation on issues relating to determining a price for Chorus' UCLL and UBA services under the final pricing principle – Consultation Paper (14 March 2014) and Supplementary Paper (25 March 2014)" 11 April 2014, paragraph [153].

32 Chorus "Submission in response to the Commerce Commission's Further consultation on issues relating to determining a price for Chorus' UCLL and UBA services under the final pricing principle – Consultation Paper (14 March 2014) and Supplementary Paper (25 March 2014)" 11 April 2014, paragraph [154].

33 Chorus "Submission in response to the Commerce Commission's Further consultation on issues relating to determining a price for Chorus' UCLL and UBA services under the final pricing principle – Consultation Paper (14 March 2014) and Supplementary Paper (25 March 2014)" 11 April 2014, paragraphs [34] and [164].

34 Chorus "Submission in response to the Commerce Commission's Further consultation on issues relating to determining a price for Chorus' UCLL and UBA services under the final pricing principle – Consultation Paper (14 March 2014) and Supplementary Paper (25 March 2014)" 11 April 2014, paragraph [139.2].

35 Chorus "Submission in response to the Commerce Commission's Further consultation on issues relating to determining a price for Chorus' UCLL and UBA services under the final pricing principle – Consultation Paper (14 March 2014) and Supplementary Paper (25 March 2014)" 11 April 2014, paragraphs [35] and [140].

36 CallPlus "Cross Submission on the further consultation on issues relating to chorus' UCLL & UBA services" April 2014, paragraph [22].

37 CallPlus "Cross Submission on the further consultation on issues relating to chorus' UCLL & UBA services" April 2014, paragraph [26].

73. Conversely, Telecom submitted that prices determined under TSLRIC were not susceptible to further adjustment on relativity grounds.[38] Telecom submitted that although the ladder of investment may have formed part of the policy framework for the 2006 reforms to the Act, it has little relevance to today's legislative framework following the 2011 amendments.[39] In Telecom's view, relativity requires us to take a consistent approach to determining a TSLRIC cost-based price of each relevant service.[40]

74. Our preliminary view is that the correct position on relativity may lie somewhere in between the approaches articulated by the various submitters. Relativity is a mandatory consideration in its own right under the Act; it is not enough simply for us to adopt TSLRIC pricing. For example, we agree that, if the SLU and UCLL prices continue to differ as a result of the pricing review determinations, we will need to consider the different relativities that result, in terms of our application of section 18. This is discussed in greater detail in relation to our approach to mapping costs to services.

75. In the UBA Price Review Update Paper, we noted that a higher UBA price may lead to further unbundling of urban exchanges by Telecom, once its prohibition on unbundling expires on 1 December 2014.[41] However, we recognised that this was uncertain as Telecom may choose not to unbundle widely, or at all, if it decides that a rapid migration of end-users to the UFB is its best competitive strategy.[42] In any event, the potential benefits to end-users from Telecom unbundling may be muted.[43] And a UBA price above the median would be likely to increase the prices faced by end-users.[44] Accordingly, in our UBA benchmarking decision, we concluded

---

38 Telecom "UCLL and UBA FPP: further consultation and supplementary paper - Cross submission" 30 April 2014, paragraph [77].

39 Telecom "UCLL and UBA FPP: further consultation and supplementary paper - Cross submission" 30 April 2014, paragraph [80].

40 Telecom "UCLL and UBA FPP: further consultation and supplementary paper - Cross submission" 30 April 2014, paragraph [83].

41 Commerce Commission "Unbundled Bitstream Access Service Price Review - Update on matters relevant to the UBA price review" (13 August 2013), paragraph [97]. Telecom is excluded from the definition of "access seeker" in the designated access service "Chorus's unbundled copper local loop service", Schedule 1, Part 2, Subpart 1 of the Act.

42 Commerce Commission "Unbundled Bitstream Access Service Price Review - Update on matters relevant to the UBA price review" (13 August 2013), paragraph [104]. See also John Wesley-Smith's comments on behalf of Telecom at the UBA Price Review Conference on 13 June 2013 (Transcript at 240): "I want to be really clear about this, we do not want to undertake large-scale unbundling. We see that as creating a disincentive for migration to fibre. It requires a large upfront investment on Telecom's part which is not in keeping with an overall strategy of driving our customer base towards fibre. That is - that's categorical… the greater the increment above UBA cost that you put the IPP and the FPP at, the greater the incentive on us to unbundle will be, and we will resist that for as long as we can because we want to support UFB."

43 Commerce Commission "Unbundled Bitstream Access Service Price Review - Update on matters relevant to the UBA price review" (13 August 2013), paragraph [105].

44 Commerce Commission "Unbundled Bitstream Access Service Price Review - Update on matters relevant to the UBA price review" (13 August 2013), paragraph [96].

that we would not need to make a further adjustment to the price of the Basic UBA service to address relativity.[45]

76. We also note that the ladder of investment is not only reflected in the relativity principle, but in the staggered nature of the services in Schedule 1 of the Act.

77. As Telecom's submissions on the UBA Price Review Conference demonstrate, there are other drivers, apart from unbundling, that are relevant to access seekers' incentives to invest in local loop services.[46] In particular, the migration to fibre is affecting access seekers' investment intentions in a way that means that we cannot be sure that any incentives we attempt to introduce through these pricing reviews in favour of unbundling will in fact lead to unbundling, or will instead simply result in end-users paying more. In terms of our obligations under section 18, we must do what is most likely to promote competition in telecommunications markets *for the long term benefit of end-users*. We would, therefore, hesitate before attempting to incentivise unbundling unless it was clear that, by doing so, we would be promoting efficient investment decisions in a way that is likely to benefit end-users. We are not currently persuaded that these objectives would be achieved.

78. In relation to CallPlus' submission, we note that the 2011 amendments to the Act were expected to disincentivise further unbundling in urban areas, but that existing unbundlers were protected to some degree by the transitional arrangements that would apply until 2014.[47]

79. Our preliminary view is, therefore, that the relativity consideration guides us less towards attempting to promote further investment in the form of unbundling, and more towards the efficiency aspect of the section 18 purpose.

How we believe section 18 may affect the UCLL and SLU FPP

80. Section 18 will guide us in our decision making in carrying out the FPPs. As discussed earlier, we have decided that to help build predictability in regulation, we will respect what we see as reasonable investor expectations in relation to major telecommunications infrastructure. The link to section 18 is that predictability supports investment, and investment promotes competition for the long-term benefit of end-users. This concern for investment and competition is reflected in our rejection of assuming re-use of Chorus' assets and our rejection of a capability-based performance adjustment to the UCLL FTTH MEA. Here we assess whether we can directly promote competition for the long-term benefit of end-users by choosing an interpretation of TSLRIC or dealing with parameter uncertainty in such a way as to raise prices beyond what we see as reasonable expectations.

---

45 Commerce Commission "Unbundled Bitstream Access Service Price Review, Decision [2013] Final determination to amend the price payable for the regulated service Chorus' unbundled bitstream access made under s 30R of the Telecommunications Act 2001" (5 November 2013), NZCC 20, paragraph [278].

46 See footnote 42 above.

47 See also, Telecom "UCLL and UBA FPP: further consultation and supplementary paper - Cross submission" 30 April 2014, paragraph [82].

81. We considered the impact on migration during the UBA IPP:[48]

> We recognise that increasing the UBA price above the median may lead to greater migration to the UFB. We note that the asymmetric impact of setting a price that under-estimates the UBA price has greater negative impacts to investment and innovation than erring on a price which may over-estimate the UBA price. If the price is incorrectly set below forward-looking cost, this would adversely impact on returns to investment in new and innovative services and may act to discourage such investment. In turn this can impact on competition in the longer-term which can be dependent on such investment.

82. We believe the analysis undertaken as part of the UBA IPP is relevant to UCLL and SLU, although we recognise that the extent to which prices may be erroneous is likely to be smaller because we are now building a full cost model.

83. While the impact on migration to alternative networks from an increase in the UBA price is potentially mixed, there is no such mixed impact expected with the UCLL and SLU prices. This is because a higher UBA price may also increase unbundling which would tend to hinder migration to alternative networks. A higher UCLL or SLU price would not incentivise unbundling.

84. Since the UBA IPP, we have received advice from Professor Vogelsang, which has two main points:

    84.1 First, that there is unlikely to be a promotion of competition for the long-term benefit of end-users from upwardly biasing prices.[49]

    84.2 Second, he has pointed to the potentially positive network externality effects from higher prices:[50]

    > Innovation benefits will come from the financial benefits for other networks and for content providers serving these networks. Additional externalities will accrue to the pre-existing subscribers of these services, who benefit from the additional or cheaper content made available to them.

85. We have also received submissions on how the FPPs may impact investment and innovation. The main points raised by submitters were:

    85.1 Telecom emphasised the importance of setting prices at TSLRIC levels. In particular, it suggests that any accelerated migration from copper to fibre should be a policy choice by government, not the regulator.[51]

---

48 Commerce Commission "Unbundled Bitstream Access Service Price Review - Update on matters relevant to the UBA price review" (13 August 2013), paragraph [120].

49 Professor Ingo Vogelsang "The effects of the UCLL contribution to the UBA aggregate on competition for the long-term benefit of end-users in New Zealand telecommunications markets" 2 July 2014, paragraph [4].

50 Professor Ingo Vogelsang "The effects of the UCLL contribution to the UBA aggregate on competition for the long-term benefit of end-users in New Zealand telecommunications markets" 2 July 2014, paragraph [27].

51 Telecom "Submission on Process and issues paper for determining a TSLRIC UCLL price" 14 February 2014, paragraphs [69]–[73].

85.2 Telecom also submitted that a TSLRIC price would provide the right incentives for other investments and innovation.[52] In particular, we should not be influenced by a view that a bias towards fibre is more likely to facilitate dynamic efficiency and innovation, and that therefore the UCLL price should include a premium.[53]

85.3 Vector submitted that we should recognise the potential for asymmetric costs in estimating regulatory prices.[54]

85.4 Chorus noted that there is a tension between the "ladder of investment" and incentives to invest in and migrate to fibre.[55]

86. Our preliminary view is that our intention to respect reasonable investor expectations to avoid the risk of chilling investment, when combined with the associated positive externalities and migration efficiencies from the generally higher prices that may result (from our decisions on the performance adjustment, and re-use of Chorus' assets), will best give effect to the section 18 purpose – without directly raising prices further.

How we believe section 18 and relativity may affect the UBA FPP decisions

87. We note that, given prices are geographically averaged, neutral incentives to unbundle can only be achieved on average. To the extent any particular geographic area has TSLRIC costs below the average, then unbundling will be incentivised and vice versa. In respect of encouraging unbundling, it would be at the overall long-term cost to consumers to ensure unbundling was plausible for an efficient operator at the highest costs areas. It is also possible that within these areas unbundling would nonetheless not occur.[56] Therefore, a position of competitive neutrality can only occur on average.

88. Our preliminary view is that section 18, and relativity, is best met for UBA by a position of competitive neutrality in respect of unbundling. The UBA price (and the method by which this is constructed under a TSLRIC model) should not independently incentivise or disincentivise unbundling. This will allow for unbundling to occur where it is efficient.

89. We believe this is in the long-term benefit of end-users, given actively incentivising unbundling implies placing a premium on the UBA price. As noted by Professor Ingo

---

52 Telecom "Submission on Process and issues paper for determining a TSLRIC UCLL price" 14 February 2014, paragraph [51].

53 Telecom "Submission on Process and issues paper for determining a TSLRIC UCLL price" 14 February 2014, paragraphs [50].

54 Vector, "Submission to the Commerce Commission on the Scoping and Issues Discussion Paper for UCLL TSLRIC" 14 February 2014, paragraphs [30]-[48]. Vector also makes submissions as to the application of asymmetric costs in regulation under Part 4 which is not a relevant consideration for the FPPs.

55 Chorus "Submission in response to the Commerce Commission's Further consultation on issues relating to determining a price for Chorus' UCLL and UBA services under the final pricing principle – Consultation Paper (14 March 2014) and Supplementary Paper (25 March 2014)" 11 April 2014, paragraphs [74]-[77].

56 There are many factors other than the UBA cost which affect unbundling, for example backhaul costs.

Vogelsang, such a premium can only be in the long-term benefit of end-users where other effects, such as enhanced quality, dominate.[57]

90. This is not to under-estimate the benefits that may accrue if, in particular, Telecom chooses to unbundle and sub-loop unbundle. However, a position of competitive neutrality will not prevent this, but will let this occur where it is efficient.

91. As part of the UBA FPP process, we have received submissions relevant to these questions and have received further information regarding unbundling in response to section 98 information requests. The main considerations arising from the submissions are:

    91.1 CallPlus and Orcon noted the importance of unbundling as a competitive constraint on Telecom, Vodafone and Chorus and the alternative fibre network.[58]

    91.2 In particular CallPlus submitted that there are asymmetric risks in setting the UBA price. It submitted that a UBA price which is too low may disadvantage unbundlers and reduce retail competition.[59] We note that if the UBA price is based on TSLRIC, this should match the costs of an efficient operator and, as such, efficient unbundlers should not be adversely affected.

    91.3 Chorus, in contrast, has noted that unbundling has been small scale and has achieved lower cost inputs in a few places.[60] We consider that unbundling has provided benefits to end-users; while the number of unbundled lines remains modest, the lines addressable from unbundled exchanges form a large percentage of lines in New Zealand.[61]

92. We have also gathered further information on unbundling which has indicated that:

    92.1 unbundling and sub-loop unbundling by Telecom would be an economic option once its prohibition on unbundling has expired;[62] and

---

57 Professor Ingo Vogelsang "The effects of the UCLL contribution to the UBA aggregate on competition for the long-term benefit of end-users in New Zealand telecommunications markets" 2 July 2014, paragraph [2].

58 Orcon and CallPlus "Submissions by CallPlus and Orcon following the further consultation paper and the workshops" 11 April 2014, paragraphs [9.3]-[9.13].

59 CallPlus "Submission on the further consultation on issues relating to Chorus UCLL and UBA services - Public version" April 2014, paragraphs [48]-[51],[104]-[105].

60 Chorus "Submission in response to the Commerce Commission's Further consultation on issues relating to determining a price for Chorus' UCLL and UBA services under the final pricing principle – Consultation Paper (14 March 2014) and Supplementary Paper (25 March 2014)" 11 April 2014, paragraph [74].

61 Commerce Commission "Unbundled Bitstream Access Service Price Review - Update on matters relevant to the UBA price review" (13 August 2013), paragraph [86]-[90].

62 Telecom's internal documentation indicates that unbundling has been considered and that unbundling under current price points would be incrementally profitable. However there are considerations other than the regulated prices which are relevant to this decision and, taking these considerations into account, Telecom has informed the Commission that its strategic preference is not to have to unbundle.

92.2 whereas, during the UBA IPP we believed that the reduction in UBA price following the move from retail-minus to a forward-looking based pricing substantially reduced the prospect of further unbundling by existing unbundlers, this appears more balanced.[63]

93. On balance, we believe a position of competitive neutrality will best meet the promotion of competition to the long-term benefit of end-users for UBA. We expect that any increase in the UBA price so as to promote competition will only be in the long-term benefit of end-users where the improvements to service quality outweigh the impact of increasing the price.[64] In this context, we note that those end-users who place the highest value on quality are the most likely to migrate to the fibre networks being rolled out.

TSLRIC

94. The FPP processes we are currently undertaking will lead us to model TSLRIC prices for the UCLL and UBA services for the first time.

95. TSLRIC is defined in the Act:[65]

> 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.

96. TSLRIC is an estimate of the costs that an efficient supplier would incur in the long-run in supplying the service in question.

96.1 "Total service" refers to the total quantity of service supplied by the network operator.

96.2 "Long run" means that costs are to be considered over a sufficient time horizon such that the way the service is delivered can be optimised.

---

63 Documentation received from CallPlus and Vodafone indicates that consideration has been given to further unbundling such as planning documents indicating further exchanges which may be unbundled. However we do note that substantial unbundling of further exchanges has occurred since the 2011 Amendment Act and further unbundling could not be precluded. We also note the CallPlus submission which notes the ongoing investment requirement for unbundlers.

64 Professor Ingo Vogelsang "What effect would different price point choices have on achieving the objectives mentioned in s 18, the promotion of competition for the long-term benefit of end-users, the efficiencies in the sector, and 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? - Paper Prepared for the New Zealand Commerce Commission" 5 July 2013, paragraphs [31(c)],[39] and [42].

65 Clause 1 of schedule 1 of the Act.

96.3 "Incremental costs" refers to the cost of supplying the service as an addition to Chorus' other services.

97. Understanding how to approach a TSLRIC cost modelling exercise based on the definition provided in the Act is not straightforward. Our starting point is the definition of "the service" in the TSLRIC definition.

98. James Every-Palmer's advice of 12 March 2014 summarised the various interpretations as follows:[66]

> In my view, there are four candidate interpretations for the phrase "the service" in terms of the application of the TSLRIC concept:
>
> (a) the actual service provided by Chorus;
>
> (b) the service described in the relevant STD;
>
> (c) the designated access service as described in Schedule 1; or
>
> (d) a more abstract description of the regulated service that is technology neutral and captures its core functionality.

99. Dr Every-Palmer went on to prefer option (d) above, on the basis that it is supported by a mix of contextual and purposive indicators, as follows:[67]

> (a) My understanding is that TSLRIC models attempt to determine "the costs that would be incurred by an operator using the most efficient means at any point in time to provide the service" and that this is captured in the expression "forward-looking costs". The reference to costs over the "long run" also points to the ability for all factors of production to be changed.
>
> (b) The TSLRIC approach would normally involve constructing a hypothetical about what would be the efficient cost today for an equivalent service that would not be constrained by the historic technology choices of Chorus (or of end-users) or the details of contingent and technologically dependent obligations like the TSO. In other words, the TSLRIC approach conventionally involves abstracting from the nuts and bolts of the *in situ* service.
>
> (c) The application of the TSLRIC approach would also normally entail a significant degree of choice and judgment including in determining whether to take a top-down or bottom-up approach and the extent of optimisation.
>
> (d) If one of the interpretations (a), (b) or (c) was adopted, the range of options for the Commission's TSLRIC model would be dramatically constrained. That is, rather than exercising its discretion based on s 18 and other relevant considerations to determine an appropriate degree of optimisation, the Commission would be required to adopt an extreme position on the continuum of TSLRIC approaches where there is very little or no optimisation of the current facilities. Accordingly, I

[66] James Every-Palmer "FPP determination: Issues re service description and the modern equivalent asset - a report prepared for the Commerce Commission" 12 March 2014, paragraph [13].

[67] James Every-Palmer "FPP determination: Issues re service description and the modern equivalent asset - a report prepared for the Commerce Commission" 12 March 2014, paragraph [16].

see these three interpretations as being at odds with taking a TSLRIC approach to pricing, and in my view, if Parliament had intended such a constrained application of TSLRIC principles it would have used much clearer language.

(e) In terms of the legislative history, I have reviewed the key documents in the legislative history around the 2001 Act and the 2006 and 2011 amendments, and have not found any suggestion that the abstracting process and discretion that would be part of a typical TSLRIC exercise was intended to be restricted in this way.

(f) I also note that the definitions of TSLRIC and forward-looking common costs refer to the "service provider" rather than the "access provider". The Act uses "service provider" generically, whereas it would have been natural to refer to the "access provider" if it was intended to model Chorus' actual network.

(g) The IPP approach of benchmarking against "comparable countries that use a forward-looking cost-based pricing method" also tells against Chorus' approach. That is, an IPP approach based on prices in other jurisdictions, which do not generally depend entirely on historic build choices, would be an odd proxy for the modern cost of Chorus' actual copper network.

(h) To the extent that this approach results in any mismatch between the underlying STD and the TSLRIC price, it may be possible to make price adjustments where the hypothetical service is superior (or inferior) to the actual STD service.

100. Chorus' submission recorded its disagreement with Dr Every-Palmer's view. The interpretation preferred by Chorus focuses closely on the literal words of the TSLRIC definition, in particular "the facilities and functions that are directly attributable to, or reasonably identifiable as incremental to, the service". These words lead Chorus to focus heavily on the functionality of its real-world existing network, and conclude that the MEA must be capable of delivering the full functionality of the existing STD service, not just its "core functions". Chorus stated that concepts like core functionality do not appear in the Act and cannot be read in.[68]

101. Orcon and CallPlus took a similar view, suggesting that the modelling of the UCLL and UBA services should be based on the existing footprint of commercially available DSL services.[69]

102. We find these submissions, which read down the statutory definition of TSLRIC, unsupported by the statutory language, context and broader scheme of the Act, and therefore unpersuasive. As Dr Every-Palmer suggested, if such an interpretation of the Act was intended, we would have expected Parliament to be clear and unequivocal that this was its intent.

---

[68] Chorus "Submission in response to the Commerce Commission's Further consultation on issues relating to determining a price for Chorus' UCLL and UBA services under the final pricing principle – Consultation Paper (14 March 2014) and Supplementary Paper (25 March 2014)" 11 April 2014, paragraphs [9]-[11], [58], [61].

[69] Orcon and CallPlus "Submissions by CallPlus and Orcon following the further consultation paper and the workshops" 11 April 2014, paragraph [2.11].

103. Our view, consistent with other submitters, is that Parliament intended us to undertake a more conventional TSLRIC exercise, by building a TSLRIC cost model to determine the costs incurred by a hypothetical operator using the most efficient means at any point in time to provide the service.[70] As Telecom put it:[71]

> The difficulty with Chorus' and Callplus' proposed approaches is that, by tying the MEA tightly to characteristics of the current Chorus network and the way in which Chorus provides services today, it artificially bounds the scope for Commission's assessment of efficient costs. This means the Commission can't set a price that best reflects FPP or section 18 outcomes.

104. We find the contextual and purposive factors Dr Every-Palmer points to persuasive. Accordingly, in our view TSLRIC does not require us to be constrained in our modelling choices by Chorus' existing network. If we were to do so, there is a possibility that we could end up setting a price based on inefficient costs, which would be inconsistent with section 18 and the concept of TSLRIC.

105. Accordingly, we intend to make a hypothetical assessment of the efficient cost today for an equivalent service, unconstrained by Chorus' (or end-users') historic technology choices, but capturing the "core functionality" of the regulated service.[72]

TSLRIC and section 18

106. In its submission, Chorus argued that TSLRIC objectives should only be relevant to the extent that they inform section 18. In its view:[73]

> The better approach is that the Commission should develop and apply a single, section 18, framework. Any other approach risks confusion and drifting away from the Act.

107. We consider the reverse is correct – that is, section 18 informs the TSLRIC objectives that we should seek to achieve in determining the UBA and UCLL FPP prices. We therefore prefer a view that section 18 should be considered throughout, but cannot override a specific task or direction – for instance, we do not intend to disregard TSLRIC objectives purely on the basis that they do not appear in section 18. We note that Vodafone's submission that consideration of section 18 must not displace a proper analytical approach to determining TSLRIC is consistent with our view.[74] There is no uniform approach to TSLRIC cost modelling. As noted in the UCLL Process and Issues paper, we have previously considered TSLRIC applied in the New

---

70 See for example Telecom "UCLL and UBA FPP: further consultation and supplementary paper - Submission" 11 April 2014, p [1]; Orcon "Cross-submission on the further consultation on issues relating to Chorus' UCLL and UBA services" 30 April 2014, paragraph [7.4]; Telecom "UCLL and UBA FPP: further consultation and supplementary paper - Cross submission" 30 April 2014, p 2 and paragraph [31].

71 Telecom "UCLL and UBA FPP: further consultation and supplementary paper - Cross submission" 30 April 2014, paragraph [15].

72 The term core functionality refers to the essential features of the relevant service rather than functionality of the core network.

73 Chorus "Submission in response to the Commerce Commission's Process and issues paper for determining a TSLRIC price for Chorus' unbundled copper local loop service in accordance with the Final Pricing Principle" 14 February 2014, paragraph [182].

74 Vodafone New Zealand Limited "Comments on process and issues paper for the unbundled copper local loop (UCLL) final pricing principle" 14 February 2014, paragraph [C2.12]-[C2.13].

Zealand context,[75] as well as an international body of literature on the various outcomes that a TSLRIC-based price may promote. In implementing TSLRIC, other regulators have stressed build or buy choices, effective competitive market outcomes and creating "economic space".

108. Below we discuss the TSLRIC objectives guiding our framework.[76]

TSLRIC objectives

109. In setting a regulatory price through TSLRIC we are limiting the prices that can be charged to access seekers and, as with any price that is independent from actual costs, we are providing incentives for Chorus to operate efficiently. Our view is that the essential feature of TSLRIC is that it sets prices based on a replacement cost and, therefore, affects both the value of the relevant Chorus copper assets and provides for their upkeep. The choices we make in deciding how to implement TSLRIC in setting price caps for UCLL, SLU and UBA could affect investment and therefore competition for the long-term benefit of end-users.

110. Taking into account responses and international precedent, we prefer the following objectives for both the UCLL and UBA services:

    110.1 **investment efficiency:** both in terms of unbundling (the relativity consideration), and enabling Chorus to continue to invest in the copper network as a competitive alternative; and

    110.2 **predictability**: this is our first implementation of a TSLRIC model for the UCLL and UBA services and achieving regulatory certainty takes time, but nevertheless, we should respect what we see as reasonable investor expectations, so as to promote investment, hence competition for long-term benefit of end-users.

111. We have also assessed whether choosing an interpretation or implementation of TSLRIC that raises or lowers prices could directly promote competition for the long-term benefit of end-users.

Why should a TSLRIC-based price promote efficient investment?

112. A common theme internationally and in our previous approach to TSLRIC is the ability of a TSLRIC price to incentivise efficient build or buy choices.

113. This approach emphasises the use of forward-looking costs, resulting in a price that reflects the efficient costs of building an equivalent service today.[77] The intention is that an access seeker who has access to more efficient alternatives will choose to

---

75 Commerce Commission "Process and issues paper for determining a TSLRIC price for Chorus' unbundled copper local loop service in accordance with the Final Pricing Principle" (6 December 2013), paragraph [57].

76 We have previously referred to the 'outcomes' a TSLRIC price may 'promote', and we now refer to 'objectives' of a TSLRIC price. Those words are imprecise and readers should not place significance on this change of terminology.

77 For a TSLRIC model this is closely connected to the concepts of MEA and optimisation.

build such an alternative rather than purchase the regulated access product. Alternatively, the price will be competed down to the point that the access seeker will purchase the regulated access product. Efficiency overall should be enhanced where this is possible. Likewise, where an access seeker is not more efficient it will purchase the regulated access product, ensuring no inefficient duplication of assets.

114. For an incumbent considering further incremental investment in its network, this should remain profitable in so far as the incumbent is efficient. For incremental expansion of the network, we have an expectation that the incumbent would be efficient.

115. This approach to investment differs to that under a Part 4 type building block methodology, where the primary emphasis is on incentivising efficient investment by the regulated incumbent, not the customers.

116. Incentivising efficient build or buy choices sits comfortably with the section 18 purpose of promoting competition, which could include investment in alternative infrastructure, for the long-term benefit of end-users.

117. We note the concern raised by Frontier Economics and other submitters in respect of the re-use of Chorus assets on whether the build or buy decision is ever a realistic option for parts of the network such as the ducts. On balance, we continue to believe the build or buy decision may have some relevance. We consider this issue further when discussing the re-use of Chorus assets.

Why should a TSLRIC-based price aid predictability?

118. Regulatory predictability supports investment, and therefore promotes competition for the long-term benefit of end-users. Predictability of price over time can encourage efficient entry in dependent markets and enable firms to make appropriate investment decisions.

119. This is our first implementation of a TSLRIC model for the UCLL and UBA services so we are not in a position to maintain consistency with previous decisions, other than considering our previous views on the approach to TSLRIC.[78]

120. We note that given the focus is typically on long-lived assets, predictability should matter more for UCLL than for UBA.

121. However, predictability of price may be difficult to achieve in the TSLRIC context given it is the hypothetical efficient operator's costs that are being modelled, rather than Chorus' actual costs.

122. The Court of Appeal has acknowledged (in the context of Part 4 of the Commerce Act 1986) that certainty is a relative rather than an absolute value and may take time to achieve. Moreover, participants in competitive markets generally face conditions of

[78] Commerce Commission "Process and issues paper for determining a TSLRIC price for Chorus' unbundled copper local loop service in accordance with the Final Pricing Principle" (6 December 2013), paragraph [57].

considerable uncertainty: that is the nature of competition.[79] We note that it is generally accepted that TSLRIC is inherently less predictable than RAB-based regulation. However, we expect predictability will increase over time as TSLRIC prices bed in.

123. We believe our best contribution to building predictability will be by respecting what we see as reasonable investor expectations (while noting that our task is to apply the Act and that regulatory environments may change over time).

124. Where there are choices that aid or detract from predictability, our approach will be to give some weight to predictability. We believe this is reinforced by section 18(2A).

Competition for the long-term benefit of end-users

125. As we discussed earlier under section 18, by respecting what we see as reasonable investor expectations, we should avoid any chilling effect on investment leading to a reduction in competition and a reduction in the long-term benefit to end-users.

126. For example, this concern for investment will influence our choices on the re-use of Chorus' assets and the rejection of a capability-based performance adjustment for the UCLL MEA.

127. This concern may also affect our consideration of adjustments, if any, to the modelled price either upwards or downwards.

Forward-looking costs

128. We must set a price that is forward-looking. Clause 1 of Schedule 1 of the Act defines TSLRIC as "…the forward-looking costs over the long run of the total quantity of the facilities and functions …" Forward-looking costs are left undefined in the Act.

129. Our view is that, while there are different ways of interpreting forward-looking in the context of TSLRIC, it will generally involve looking at optimised replacement costs (ORC).

130. In the UCLL issues paper, we defined the concept of forward-looking costs as follows:[80]

> Forward-looking costs reflect the costs that a network operator would incur if it built a new network today using assets collectively referred to as the modern equivalent asset, which we discuss further below. The costs of these assets are the costs of currently available equipment as opposed to the costs of older equipment that may actually still be in use.

131. In 2002, we defined forward-looking costs as:[81]

---

79 *Commerce Commission v Vector Ltd* [2012] NZCA 220, 2 NZLR 525 at [34].

80 Commerce Commission "Process and issues paper for determining a TSLRIC price for Chorus' unbundled copper local loop service in accordance with the Final Pricing Principle" (6 December 2013), paragraph [68].

> …costs that will be incurred in the future in providing the service. This involves estimating costs on the basis of current and future prices of inputs and given the availability of modern technologies and assets. The aim is to estimate the cost of providing the services in the future rather than the past.

132. Both definitions are consistent with forward-looking costs being ORC. An alternative view is that forward-looking costs are costs that are actually likely to be incurred going forward and not limited to replacement cost.

133. Chorus has referenced our previous statements that the appropriate basis for asset valuation is ORC.[82] Chorus also submits that asset valuation should be valued at "current replacement cost".[83] Our view is that the replacement cost must allow for optimisation. Optimisation is a key component of the ORC methodology for asset valuation.

134. Telecom has submitted a view on forward-looking costs that appear, to us, to be consistent with ORC.[84]

> …the emphasis on "forward looking costs in the long run" captures an important point. In a workably competitive market, in the long run, cost-based prices converge with the economic cost of supplying products and services based on the most efficient current technologies and associated productivity benefits at a given time point, and irrespective of the sunk costs actually incurred by market participants. For this reason, forward looking long run costs at a given time point provide the right signals, for most efficient resource use and allocation, to incentivise innovation, and to drive new investment.

135. However, Telecom has also noted that this may not be applicable to all assets and, in particular where assets are re-used, these should not be subject to ORC valuation, which may lead to windfall gains.[85]

136. Vodafone has submitted that we should "take into account the elapsed economic life of the assets used by Chorus in providing the UCLL service to ensure that those costs are not double-recovered through the TSLRIC model".[86] Vodafone's view relies on advice from Frontier Economics and advocates a move away from a pure ORC

---

81 Commerce Commission "Application of a TSLRIC Pricing Methodology - Discussion Paper" (2 July 2002), paragraph [32].

82 Chorus "Submission in response to the Commerce Commission's Process and issues paper for determining a TSLRIC price for Chorus' unbundled copper local loop service in accordance with the Final Pricing Principle" 14 February 2014, paragraphs [65]-[68].

83 Chorus "Submission in response to the Commerce Commission's Process and issues paper for determining a TSLRIC price for Chorus' unbundled copper local loop service in accordance with the Final Pricing Principle" 14 February 2014, paragraph [78]. See also Analysys Mason "Report for Chorus - Response to Commission" 12 February 2014, pp 1-4.

84 Telecom "UCLL and UBA FPP: further consultation and supplementary paper - Submission" 11 April 2014, paragraph [11].

85 Telecom "Submission on Process and issues paper for determining a TSLRIC UCLL price" 14 February 2014, pp [1]-[2].

86 Vodafone New Zealand Limited "Comments on process and issues paper for the unbundled copper local loop (UCLL) final pricing principle" 14 February 2014, recommendation 16, p 20.

methodology. Vodafone also points to the recommendations of the European Commission which are also covered in the TERA literature review.[87]

137. Frontier Economics' report for Vodafone, Telecom, and CallPlus draws the distinction between long-lived assets that will be re-used and other assets. For the former class of assets, its report recommends the use of alternative valuation methodologies that recognise past recoupment of the sunk costs.[88]

138. Our preliminary view is that ORC is appropriate for the model although noting that exceptions may be appropriate for certain assets. We note this is consistent with our previous approach and our TSLRIC objectives of predictability and efficient investment. An ORC methodology will set the correct level of costs for bypassing elements of the network and should best incentivise the efficient build buy choice.

139. These questions are closely linked to asset re-use and the MEA, which are discussed in the following sections.

Re-use of Chorus assets

140. We must set TSLRIC-based prices for the UBA and UCLL services that are forward-looking.[89] As discussed above, our view is that while there is a range of ways of interpreting "forward-looking" in the context of TSLRIC, it will generally involve valuing assets at ORC, which our previous approach has followed.

141. However, we must also consider how to treat existing Chorus assets that may be re-used. Different approaches to asset valuations may be used in the TSLRIC model, depending on whether the assets in question will be re-used or not.

142. Frontier Economics, for Vodafone, Telecom and CallPlus, submitted that key assets that would be likely to be re-used if a hypothetical new network was constructed today (such as the ducts and trenches), should be valued at their depreciated optimised replacement cost, rather than ORC. [90]

143. Similarly, Vodafone[91] submitted that re-used assets should not be revalued over time, and Telecom[92] stated that we should estimate the costs of an efficient provider, building a modern network that recognises the re-use of these assets.

---

87 Vodafone New Zealand Limited "Comments on process and issues paper for the unbundled copper local loop (UCLL) final pricing principle" 14 February 2014, paragraph [D4.2]-[D4.6]. See also TERA Consultants "TSLRIC literature review on UBA and UCLL costing approaches" June 2014, pp [11]-[17].

88 Frontier Economics "Determining a TSLRIC price for Chorus' UCLL service - A report prepared for Vodafone New Zealand, Telecom New Zealand and CallPlus" February 2014, pp 34-36.

89 Clause 1 of Schedule 1 of the Act

90 Frontier Economics "Determining a TSLRIC price for Chorus' UCLL service - A report prepared for Vodafone New Zealand, Telecom New Zealand and CallPlus" February 2014, pp [34]-[36].

91 Vodafone New Zealand Limited "Comments on process and issues paper for the unbundled copper local loop (UCLL) final pricing principle" 14 February 2014, paragraph [C5.4].

92 Telecom "Submission on Process and issues paper for determining a TSLRIC UCLL price" 14 February 2014, p [1].

144. Analysys Mason, on behalf of Chorus, submitted that ducts and poles could be re-used, but will also be replicated in some LFC areas. As a result, replacement cost would be an entirely fair way for them to be valued today.[93]

145. We understand from TERA that there is an international trend to include asset re-use in cost models. For example, in the European Commission's guidelines on costing methodologies, the recommendation is to value re-usable civil engineering assets at current cost, based on an indexation method.[94] This would represent a change in our previous approach to asset valuation under a TSLRIC methodology.

146. Where new entry at the duct level is unlikely to occur, it has been viewed as efficient to include asset re-use in TSLRIC models.[95] However, where asset re-use is applied to Chorus assets, it is not clear whether, and at what cost, access would be granted to Chorus' ducts. It raises the difficult issue of how to value these assets and which assets should or should not be considered re-usable. We note that, unlike Europe, there is no regime for mandating access to ducts in New Zealand.

147. Our view is that there would have been a reasonable expectation that assets would be valued at ORC under a TSLRIC model. This suggests that having special rules for valuing re-used assets may not best meet the requirements of section 18. Asset valuation is one of the key determinants in any cost-based method of regulation on the level of revenues. Therefore, significant changes in asset valuation methodology should not be undertaken lightly, as this can lead to windfall gains and losses to all parties.

148. Accordingly, our preliminary view is to value assets at ORC, regardless of whether existing Chorus assets could be re-used.

149. We consider there to be a distinction between re-use of existing Chorus assets and sharing of third party assets, such as electricity poles. In our view, the latter should be taken into account. We discuss this below under cost allocation.

Modern equivalent asset

150. A standard approach to TSLRIC cost modelling internationally is to adopt the concept of a modern equivalent asset (MEA). The MEA concept enables the calculation of costs a hypothetical efficient provider investing today in fixed telecommunications networks would face.

151. We have consulted on issues relevant to MEA selection for the TSLRIC FPP prices for the UBA and UCLL services, and have received many helpful submissions.

---

93 Analysys Mason "Report for Chorus - Paper in support of UCLL cross-submissions" 26 February 2014, p [6].

94 European Commission "Commission recommendation of 11.9.2013 on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment" 11 September 2013, paragraphs [34]-[36].

95 The European Commission 2013 recommendation only concludes that depreciated valuation is appropriate because "the build option is not economically feasible for this asset category".

MEA for the UCLL service

152. Chorus submitted that the Act requires us to model its current copper network as the MEA for UCLL.[96] As discussed above, our task is to set a price that is forward-looking. In doing so, we will select a MEA that will be based on the costs that a network operator would incur if it built a new network asset today. To the extent that it invites us to model its actual network, Chorus' approach would unduly restrict the optimisation and expert judgment that TSLRIC involves. We do not consider that this interpretation is supported by the Act.[97]

153. Wigley & Co, for Orcon, submitted that the Act requires us to model a MEA using a scorched earth approach and that we are prohibited from using a scorched node approach.[98] We disagree that the Act requires us to adopt a scorched earth MEA. A scorched node approach is commonly adopted as part of a forward-looking TSLRIC modelling exercise.[99] As discussed above, we consider that the Act affords us the discretion to draw on TSLRIC theory and exercise our judgment, having regard to the specific requirement and scheme of the Act in making a choice on the appropriate MEA.

154. In the UCLL Process and Issues paper we listed the possible characteristics of the UCLL service that we could use to assess candidates for the MEA.[100]

155. We also set out the following technologies that we considered met the characteristics we had identified for the UCLL service:[101]

    155.1 P2P FTTH;

    155.2 G-PON FTTH;

    155.3 FTTN;

    155.4 a combination of P2P FTTH and FWA.

---

96 Chorus "Submission in response to the Commerce Commission's Process and issues paper for determining a TSLRIC price for Chorus' unbundled copper local loop service in accordance with the Final Pricing Principle" 14 February 2014, paragraphs [36]-[64], [71]-[74], [92]-[108], [207]-[212], [227]-[244], [259]-[260], and [271]-[274].

97 See also, James Every-Palmer "FPP determination: Issues re service description and the modern equivalent asset - a report prepared for the Commerce Commission" 12 March 2014, paragraphs [13]-[18] and [42].

98 Wigley & Co Solicitors "UBA AND UCLL FPP Price Review Determinations – Memorandum for Cross-submissions on behalf of Orcon" 30 April 2014, paragraphs [2.1]-[2.26].

99 See ERG, "ERG Common Position: Guidelines for implementing the Commission Recommendation C (2005) 3480 on Accounting Separation & Cost Accounting Systems under the regulatory framework for electronic communications" 2005. TERA Consultants "TSLRIC literature review on UBA and UCLL costing approaches" June 2014, p [59].

100 Commerce Commission "Process and issues paper for determining a TSLRIC price for Chorus' unbundled copper local loop service in accordance with the Final Pricing Principle" (6 December 2013), paragraphs [97]-[103].

101 Commerce Commission "Process and issues paper for determining a TSLRIC price for Chorus' unbundled copper local loop service in accordance with the Final Pricing Principle" (6 December 2013), paragraphs [104]-[117].

156. Telecom and Vodafone agreed with both our preliminary assessment of the possible characteristics of the key features and functionality of the Chorus UCLL service and that the technologies listed by us complied with the characteristics.[102] Vodafone also considered that we should include a fifth option using a combination of G-PON FTTH and FWA.[103]

157. As discussed above, Chorus and Analysys Mason submitted that we are required to model a network that can deliver the full functionality of the UCLL STD service and that the only technology that can do so is the existing copper network.[104] Even if we were to adopt what is in our view a strained interpretation of the Act, from a forward-looking perspective, low speed data services such as alarms and facsimiles are services based on legacy technology. These services reflect historic technology choices that have been made. Alarm devices could be adapted relatively easily to work over IP (broadband) or GPRS (cellular) networks. Although existing fax services will not work over most VOIP codecs (coder-decoders), the modern equivalent of a facsimile is an email attachment.

158. We note Telecom's submission that the paramount question to be considered is how a hypothetical new network builder would choose the type of network it would deploy.[105] This aligns with our views.

159. As noted by TERA, there are several access network technologies that are capable of delivering voice and broadband services in New Zealand today.[106] These include:[107]

    159.1 copper (Chorus' network);

    159.2 FTTH (operated by LFCs, either by Chorus or an alternative operator);

    159.3 FWA (operated by Vodafone, for example in the RBI areas);

    159.4 HFC (known colloquially as "cable", operated by Vodafone); and

---

102 Telecom "Submission on Process and issues paper for determining a TSLRIC UCLL price" 14 February 2014, paragraph [129]; and Vodafone New Zealand Limited "Comments on process and issues paper for the unbundled copper local loop (UCLL) final pricing principle" 14 February 2014, paragraph [E1.1].

103 Vodafone New Zealand Limited "Comments on process and issues paper for the unbundled copper local loop (UCLL) final pricing principle" 14 February 2014, paragraphs [G2.2]-[G2.5].

104 Chorus "Submission in response to the Commerce Commission's Process and issues paper for determining a TSLRIC price for Chorus' unbundled copper local loop service in accordance with the Final Pricing Principle" 14 February 2014, paragraph [225]. Analysys Mason "Report for Chorus - Response to Commission" 12 February 2014, p [13].

105 Telecom "Submission on Process and issues paper for determining a TSLRIC UCLL price" 14 February 2014, paragraph [131].

106 TERA Consultants "TSLRIC price review determination for the Unbundled Copper Local Loop and Unbundled Bitstream Access services: Modern Equivalent Assets and relevant scenarios" July 2014, p [9].

107 TERA Consultants "TSLRIC price review determination for the Unbundled Copper Local Loop and Unbundled Bitstream Access services: Modern Equivalent Assets and relevant scenarios" July 2014, p [9]. To note, TERA states in its paper that it has not considered satellite in addition to the above technologies because although "satellite is sometimes considered in very rural areas which are difficult to connect by wired or wireless networks … it is generally used in combination with a wired or wireless network return path".

159.5 mobile (operated by Telecom, Vodafone and 2degrees).

160. We consider that as a starting point each of these five available technologies should be evaluated for use as the UCLL MEA.[108]

161. With the assistance of our experts TERA, we have used the following technical factors to choose a UCLL MEA from the technologies listed above:

161.1 **Technological performance** – involves comparing the performance and capabilities of the different technologies (and includes the characteristics we used for the selection of MEA candidate technologies).

161.2 **Cost** – involves comparing the costs of rolling out access networks under different technologies based on benchmark data, information, meetings and site visits with industry.

161.3 **Operator strategy** – involves studying current deployment in New Zealand to determine the technologies that have in fact been preferred by operators.

161.4 **Subscriber and retail price** – involves studying consumers' subscription choices to determine technologies preferred by operators and comparing prices of retail products based on different technologies.[109]

162. TERA has considered the above factors and reached the following recommendations on the appropriate technologies from which we can select the UCLL MEA:

162.1 Technological performance: FTTH, HFC and FWA provide the same or higher downstream and upstream capacity as copper. TERA considers that technologies offering dedicated capacity for end-users are likely to provide superior performance to consumers than technologies offering shared capacity as there is greater control of the physical medium and unbundling is possible.

162.2 Cost: it is difficult to predict whether the cost of a FTTH or FWA network will be cheaper than copper. However, its overall recommendation favours FTTH for the following reasons:

162.2.1 A FTTH network offers higher speeds over longer lines than copper/FTTN;

---

[108] In doing so, we note Telecom's submission that "A further approach to explore is to ascertain the technology roadmap envisaged by equipment vendors, and the current intention from network operators as to what modern technology would be in general use in the medium term. The answer is provided by taking say a 3 or 5 year forward look. Unfortunately the New Zealand and Australian settings are unlikely to provide the optimal answer due to the Government involvements in the UFB programme and the NBN in those countries. As a result, we suggest the Commission should examine what is being deployed and planned for in other countries to gain some guidance." Telecom "Submission on Process and issues paper for determining a TSLRIC UCLL price" 14 February 2014, paragraph [132].

[109] We note that TERA places less weight on this last factor than the others given the uncertainty surrounding consumer prices, preferences and choices.

162.2.2 Cable prices tend to suggest that the cost of FTTH will decrease in comparison to copper; and

162.2.3 Operating expenditure on FTTH is significantly cheaper compared to copper.

162.3 Operator strategy: based on operator behaviour, FTTH is the MEA for copper in most areas. FWA is more likely in some rural areas; and

162.4 Subscriber and retail price: FTTH take-up rate suggests that subscribers are increasingly requiring the capabilities offered by FTTH. Users are often ready to pay more for the superior experience offered by these services. However, as noted above, this criterion is less relevant than the others, given the uncertainty surrounding consumer prices, preferences and choices.

163. Based on TERA's engagement with our regulatory framework and the above criteria, its recommendation is that the MEA for UCLL should be FTTH for the majority of the network, and FWA in less dense rural areas.

164. Our current view is that we will model FTTH, and at the edges of the network we will model FWA. Our approach to determining the edges of the network is to take the current, and projected, RBI fixed wireless footprint.[110]

165. TERA suggests that an adjustment should be made to our proposed MEA technology to reflect the fact that it is different from the current copper technology.[111] We outline TERA's advice and our proposed approach in our discussion on performance adjustments later in the paper.

MEA for the UBA service

166. In the UBA process and issues paper, we stated that our (then) current thinking was that the UBA MEA would utilise Chorus' copper based inputs, potentially with some RBI fixed wireless in place of copper in some rural areas.[112]

167. Chorus submitted that the UBA MEA should use Chorus' copper inputs, but that RBI was not relevant to our calculation. That was because end-users within the geographic scope of the UBA STD in RBI fixed wireless areas are currently served by Chorus using ADSL or ADSL2+.[113]

---

110 We note that while we will not include in the model any subsidy received by Chorus for its RBI contract, we will consider it in our subsequent cost to price analysis.

111 TERA Consultants "TSLRIC price review determination for the Unbundled Copper Local Loop and Unbundled Bitstream Access services: Modern Equivalent Assets and relevant scenarios" July 2014, p [40].

112 Commerce Commission "Determining a TSLRIC price for Chorus' unbundled bitstream access service under the final pricing principle: Process and issues paper" (7 February 2014), paragraphs [15]-[16].

113 Chorus "Submission in response to the Commerce Commission's Process and issues paper for determining a TSLRIC price for Chorus' unbundled bitstream access service in accordance with the Final Pricing Principle" 21 February 2014, paragraphs [24]-[28].

168. We agree that we should limit our consideration of the UBA MEA to Chorus' existing copper network, rather than adding RBI fixed wireless, as this is the network presupposed by the service description in the Act.[114] Accordingly, MEA principles are only relevant to the "additional costs" component of providing the UBA service. In other words, for the UBA service, the existing copper network must be taken as a given, and the TSLRIC and MEA principles only be applied in relation to the facilities associated with the "additional costs".

169. Telecom agreed that we should model UBA incremental to the local loop network, but considered that the degree to which the UBA service can be assumed to be based on the existing layer 1 services will depend on our UCLL price review approach.[115] Telecom also considered that wireless technologies may have a role in determining an optimised MEA.[116]

170. Vodafone did not support our preliminary view that the appropriate MEA for the UBA service should utilise Chorus' copper based inputs, potentially with RBI fixed wireless in place of copper in some rural areas. That was because it considered that "a single (optimised) MEA should be adopted for the cost model for both the UCLL and UBA services" and that "a TSLRIC cost-price should not permit Chorus to be compensated for any inefficiencies in its underlying copper network at the layer 2 level (the UBA uplift), as much as it should not be compensated for inefficiencies in the layer 1 level (the UCLL input)."[117]

171. We do not consider that either of these approaches is open to us under the Act.

172. Given the access network is limited to the existing copper network, TERA's view is that for the core network, two technologies meet the eligibility criteria: Ethernet and ATM.[118] In our view, Ethernet is the most appropriate layer 2 protocol, on the basis that Ethernet is the current in-use technology, with higher speeds. ATM is no longer available as a best in use technology in New Zealand, and is being actively retired by Chorus.

173. We also note that for unbundlers, the decision of whether to unbundle is based on the costs of Chorus' existing copper network, not a fibre network. For that reason, we consider that a copper based MEA for UBA is likely to best give effect to the

---

114 See also, James Every-Palmer "FPP determination: Issues re service description and the modern equivalent asset - a report prepared for the Commerce Commission" 12 March 2014, paragraph [29] and the table following that paragraph. Dr Every-Palmer noted that the RBI may nevertheless be relevant for other purposes (for example, the RBI subsidy may need to be netted out from the TSLRIC cost calculations).

115 Telecom "Process and issues paper for determining a TSLRIC UBA price Submission" 21 February 2014, paragraph [16].

116 Telecom "Process and issues paper for determining a TSLRIC UBA price Cross submission" 5 March 2014, paragraph [23].

117 Vodafone New Zealand Limited "Submission to the New Zealand Commerce Commission - Comments on process and issues paper for the unbundled bitstream access service (UBA) final pricing principle" 21 February 2014, paragraph [D3].

118 TERA Consultants "TSLRIC price review determination for the Unbundled Copper Local Loop and Unbundled Bitstream Access services: Modern Equivalent Assets and relevant scenarios" July 2014, p [67].

purpose set out in section 18. The use of copper based inputs and Ethernet also meets the forward-looking requirement in the TSLRIC definition in the Act.

174. Accordingly, our view is that the UBA MEA will use Chorus' copper based inputs, with Ethernet as the layer 2 protocol.

Adjustments

175. In our UCLL Process and Issues paper, we identified three types of adjustment that can be made if a fibre MEA is used, to reflect that it is different from the current copper technology:[119]

175.1 adjustment based on willingness to pay/consumer preference;

175.2 adjustment based on technologies and performance; or

175.3 adjustment based on costs.

176. Submitters have provided a range of views on this topic. For example:

176.1 Chorus submitted that a performance adjustment would be inappropriate.[120] In Chorus' view, any adjustment would need to be cost-based, which means we would need to model the copper network in order to identify any adjustment. Chorus also submitted that would arguably be inconsistent with a TSLRIC approach (Switzerland has addressed this issue through legislative change).[121] Analysys Mason, on behalf of Chorus, submitted that performance adjustments are not consistent with the requirement of the Act for a TSLRIC approach to FPP. Such adjustments do not provide correct incentives for investment by Chorus (or a hypothetical new entrant) and are more costly to undertake.[122]

176.2 Vodafone submitted that a cost-based adjustment is appropriate if a fibre MEA is selected.[123] Frontier Economics submitted on behalf of Vodafone, Telecom and CallPlus that any TSLRIC modelling based on such a predominantly fibre MEA would need to make appropriate performance

---

119 Commerce Commission "Process and issues paper for determining a TSLRIC price for Chorus' unbundled copper local loop service in accordance with the Final Pricing Principle" (6 December 2013), paragraphs [118]-[125]

120 Chorus "Submission in response to the Commerce Commission's Process and issues paper for determining a TSLRIC price for Chorus' unbundled copper local loop service in accordance with the Final Pricing Principle" 14 February 2014, paragraphs [245],[248], and see also Analysys Mason "Report for Chorus - Response to Commission" 12 February 2014, pp [29]-[32].

121 Chorus "Submission in response to the Commerce Commission's Process and issues paper for determining a TSLRIC price for Chorus' unbundled copper local loop service in accordance with the Final Pricing Principle" 14 February 2014, paragraph [115]; and Chorus "Submission in response to the Commerce Commission's Further consultation on issues relating to determining a price for Chorus' UCLL and UBA services under the final pricing principle – Consultation Paper (14 March 2014) and Supplementary Paper (25 March 2014)" 11 April 2014, paragraph [18].

122 Analysys Mason "Report for Chorus - Response to Commission" 12 February 2014, p [29].

123 Vodafone New Zealand Limited "Comments on process and issues paper for the unbundled copper local loop (UCLL) final pricing principle" 14 February 2014, recommendation 20, p 25.

adjustments. Failure to make such adjustments would likely result in access prices that reflect a level of network quality that does not correspond to the network that will actually deliver the UCLL service.[124]

176.3 Telecom submitted that if an adjustment has to be made, given that the existing copper network offers lower speeds and performance than the MEA network, it is appropriate that the price of UCLL should be set by taking TSLRIC for access to the MEA network and then adjusting this downwards by some factor to reflect the lower speeds and performance available to copper network users.[125] It is legally and conceptually permissible to use a consistent MEA in a way that ensures that the efficiently incurred additional costs of UBA can be properly identified and accounted for.

176.4 Orcon and CallPlus submitted that a downward adjustment will be needed where modern technology offers superior service and flexibility, such as (from TERA's MEA Assessment report for DBA) adjustments for: consumer preference; technologies and performances; and costs. But if a copper/FTTN MEA is chosen, it should not incorporate reduced demand to reflect migration to UFB.[126]

177. TERA discusses issues concerning performance adjustments in its report accompanying this paper.[127] TERA points out drawbacks of adjustments based on consumer preference – namely that it might be difficult to calculate consumer willingness with precision, and that the willingness to pay extra for FTTH/FWA is likely to change over time and depend on the types of services being provided over these networks. TERA also suggests that adjustments based on consumer preference may not encourage investing in the most cost-efficient technology, given that the differential of prices between copper and FTTH/FWA does not represent the differential of costs.[128]

178. TERA also points out drawbacks of adjustments based on technological performance, in particular that making an adjustment based on the relative capabilities of the different technologies could lead to the price of copper becoming uncorrelated to its associated cost, leading to regulatory inconsistencies.[129]

---

124 Frontier Economics "Determining a TSLRIC price for Chorus' UCLL service - A report prepared for Vodafone New Zealand, Telecom New Zealand and CallPlus" February 2014, p [v] and 25.

125 Telecom "Submission on Process and issues paper for determining a TSLRIC UCLL price" 14 February 2014, paragraph [142].

126 Orcon and CallPlus "Submissions by CallPlus and Orcon following the further consultation paper and the workshops" 11 April 2014, paragraphs [7.23]-[7.24].

127 TERA Consultants "TSLRIC price review determination for the Unbundled Copper Local Loop and Unbundled Bitstream Access services: Modern Equivalent Assets and relevant scenarios" July 2014, p [40].

128 TERA Consultants "TSLRIC price review determination for the Unbundled Copper Local Loop and Unbundled Bitstream Access services: Modern Equivalent Assets and relevant scenarios" July 2014, p [41].

129 TERA Consultants "TSLRIC price review determination for the Unbundled Copper Local Loop and Unbundled Bitstream Access services: Modern Equivalent Assets and relevant scenarios" July 2014, p [42].

179. Accordingly, TERA concludes that adjustments based on consumer preference or technological performance should not be used in New Zealand. We agree, and consider the following additional reasons support this:

179.1 First, a performance adjustment is not objectively observable now, and therefore not consistent with our predictability outcome.

179.2 Second, it is also, arguably, not compatible with the replacement cost view of TSLRIC. We are interested in parties' views on this.

180. Although our UCLL MEA is FTTH, TERA recommends modelling two networks, a copper network and a FTTH/FWA network, and deciding whether or not to make a cost adjustment to our FTTH MEA depending on the results to identify the least cost, subject to section 18 considerations. If the copper cost appears to be higher than FTTH/FWA cost, adjustments are not necessary and the UCLL price is set based on the FTTH/FWA cost.[130] Our preliminary view is that we will adopt this approach.

181. We welcome submitters' views on our proposed approach.

Additional legal requirements for determining TSLRIC prices for the UCLL and UBA services

182. The Act sets out a number of additional legal requirements we must consider when determining FPP prices for the UCLL and UBA services, which we discuss below.

Clause 4A – geographically averaged price

183. Clause 4A of Schedule 1 of the Act provides that in applying the FPP for the UCLL and UBA services, we must determine a geographically averaged price.

184. Telecom submitted that disaggregating layer 1 local access prices for similar services that all use Chorus' unbundled local loop network would directly contravene the requirement in clause 4A. Instead, Telecom submitted that a more coherent and supportable interpretation would be one that results in aligned pricing for all similar regulated layer 1 services that utilise the local access network. This would mean that the price for UCLL is the same as the price for UCLFS; which is the same as the price for the unbundled copper local loop component of the UBA price, and is the same as the price for SLU+SLU Backhaul. This interpretation, in Telecom's view, gives effect to clause 4A and creates sensible and consistent incentives for access seekers.[131]

185. Clause 4A was introduced by the Amendment Act to address the inability of a structurally separated Telecom to cross-subsidise urban and non-urban services. Under the TSO, Telecom, unlike its competitors, has to provide national pricing for some services, despite facing de-averaged input prices, and therefore cross-subsidise them. However, Telecom faces profit erosion in this area, and a structurally

130 TERA Consultants "TSLRIC price review determination for the Unbundled Copper Local Loop and Unbundled Bitstream Access services: Modern Equivalent Assets and relevant scenarios" July 2014, p [47].

131 Telecom "UCLL and UBA FPP: further consultation and supplementary paper - Cross submission" 30 April 2014, p 3 and paragraph [52]; and Telecom "UCLL and UBA FPP: further consultation and supplementary paper - Submission" 11 April 2014, p 2.

separated Telecom could no longer cross-subsidise losses between the new Telecom and Chorus entities.[132]

186. The purpose of clause 4A, therefore, appears to have been somewhat more limited than that for which Telecom contends. We do, however, have some sympathy for Telecom's argument, especially as cabinetised lines are predominantly located in urban areas (and vice versa). It may be that Telecom's argument has some merit, at least by analogy, in support of aggregated pricing. We would be interested to hear any other views from submitters on this matter.

Clause 4B – double recovery of costs

187. Clause 4B of Schedule 1 provides that, in applying an applicable FPP, we 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.

188. Vodafone, Orcon and CallPlus submitted that Chorus should not be permitted to double-recover for shared assets, either between the regulated services that are currently subject to the price review, or through other services. They submitted that this outcome would be inconsistent with the long-term benefit of end-users of telecommunications services.[133] We agree.

189. We intend that whenever we reset the UBA and UCLL price, we will review the routing table that determines how much a given service uses a given network asset. The review of the routing table will be based on the existing regulated and commercial services at the time of the price reset and will ensure that costs are recovered only once.

Combining FPP processes for UCLL and UBA

190. Chapman Tripp, on behalf of Chorus, submitted that we may not "undertake a joint analysis which establishes a price applicable to both UCLL and UBA services. Rather, although parallel work may be sensible and efficient, the intellectual work must be done separately for each service".[134] We are not entirely sure what is meant by this submission. We accept that we will have to ensure that our overall approach will need to work regardless of whether a particular service is subject to FPP or IPP pricing, and that we will need to ensure that the MEA and FPP price applicable for a particular service should not be affected by the time at which the application was

---

132 Report of Finance and Expenditure Committee on Telecommunications (TSO, Broadband, and Other Matters) Amendment Bill Government Bill at 19.

133 Vodafone New Zealand Limited "Cross-Submission on UBA Issues Paper" 5 March 2014, paragraph [11]. Orcon and CallPlus "Submissions by CallPlus and Orcon following the further consultation paper and the workshops" 11 April 2014, paragraphs [4.4]-[4.5].

134 Chapman Tripp "Memorandum to Chorus on unbundled copper local loop (UCLL) and unbundled bitstream (UBA) access services - pricing review determination (PRDs) - legal framework" 11 April 2014, paragraph [15].

made or what other FPP applications were live at the same time.[135] But, to the extent that the submission implies that we cannot conduct the UCLL and UBA FPP processes in tandem, or that we are not legally permitted to use the same cost model to determine prices for each service, we disagree. We also note Russell McVeagh's submission in response, that it was open to us to use the same model to determine the price for the UCLL and UBA services, provided doing so was consistent with TSLRIC and section 18, which we consider to be correct.[136]

[135] See also, James Every-Palmer "FPP determination: Issues re service description and the modern equivalent asset - a report prepared for the Commerce Commission" 12 March 2014, paragraph [38].

[136] Russell McVeagh "Memorandum to Telecom on UCLL and UBA Final Pricing Reviews" 30 April 2014, paragraphs [5]-[9].

Mapping the local loop cost to services

191. All submitters agreed that we should model the "full" local loop network (including, for example, the SLU component).[137] We confirm that we will do so.

192. Once we have modelled the TSLRIC costs for UCLL, we will need to ensure that they are appropriately mapped to prices for the applicable services, as set out in the Act and the STDs made under it.

193. In this section of the paper, we set out the framework for how we propose to map TSLRIC costs to prices in the STDs.

    193.1 First, in response to submissions received, we explain why the existence of the SLU service, involving cabinetised lines, does not require us to use an FTTN MEA. In other words, we consider that a single FTTH MEA will work for both of the UCLL and SLU services.

    193.2 Second, we explain our preliminary views on how we propose to map costs to prices for UCLL and SLU in light of the economic considerations reflected in section 18, the objectives of TSLRIC and the scheme of the Act.

Our cost model will provide us with prices for the UCLL and SLU STDs

194. The prices determined in accordance with the FPP will be included in the relevant STDs.[138]

195. In relation to the UCLL service designated in the Act, there are two relevant STDs:

    195.1 the UCLL STD, which relates to the unbundled copper local loop between the end-user and the exchange;[139] and

    195.2 the SLU STD, which relates to the unbundled copper local loop between the end-user and the distribution cabinet.[140]

196. As discussed earlier in this paper, our MEA for UCLL will be based on the costs that a hypothetical network operator would incur if it built a new network asset today. It will not exactly reflect the configuration of the current network, but will reflect the

---

137 Chorus "Submission in response to the Commerce Commission's Process and issues paper for determining a TSLRIC price for Chorus' unbundled copper local loop service in accordance with the Final Pricing Principle" 14 February 2014, paragraphs [70], [129]. CallPlus "Submission on the Commissions process and issues paper for determining a TSLRIC price for UCLL in accordance with the FPP" 14 February 2014, p 1; and Frontier Economics "Determining a TSLRIC price for Chorus' UCLL service - A report prepared for Vodafone New Zealand, Telecom New Zealand and CallPlus" February 2014, p [iv] and Figure 1.

138 Section 30P(1)(a)(i) of the Act.

139 Commerce Commission "Standard Terms Determination for the designated service Telecom's unbundled copper local loop network" (7 November 2007), Decision 609.

140 Commerce Commission "Standard Terms Determination for the designated services of Telecom's unbundled copper local loop network service (Sub-loop UCLL), Telecom's unbundled copper local loop network colocation service (Sub-loop Co-location) and Telecom's unbundled copper local loop network backhaul service (Sub-loop Backhaul)" (18 June 2009), Decision 672.

basic functionality of the UCLL service, allowing the cost that is derived from the TSLRIC model to be subsequently mapped to the current STDs.

197. As the FTTH MEA we have chosen will not contain any cabinets, a question arises as to how we translate the costs derived from the TSLRIC modelling process into a price for the UCLL and SLU services. The model itself will not produce separate costs for UCLL and SLU because the model does not equate to the current network that actually exists. Instead, it will model the cost of a hypothetical, optimised network. We will then map costs to prices using section 18, TSLRIC objectives and the scheme of the Act.

We will not have a separate FTTN MEA for SLU

198. We do not consider that the need to produce prices for each of UCLL and SLU governs our choice of MEA, or requires us to have a separate (FTTN) MEA for SLU. If we allowed the particular configuration of the existing network to govern our choice of MEA, then that might not meet the requirement to assess "forward-looking costs".

199. Chorus submitted that we may not use the pricing review determinations to redefine the existing services.[141] We do not intend to use TSLRIC to redefine the services. Instead, we will use TSLRIC to calculate the forward-looking costs of providing the relevant services.

200. However, we consider that we can commence a process under section 30R to amend an STD (other than the UCLL, SLU and UBA STDs) in conjunction with or following the pricing review determination. If, as a result of the TSLRIC cost modelling exercise, we think section 18 supports a different approach to the current configuration of STDs, including more efficient pricing, we may conduct a section 30R review, either of our own volition, or following an application by an interested party.

201. Vodafone submitted that we must determine TSLRIC prices for both the non-cabinetised local loop network (NUCLL), to meet the UCLL price review application, and the full local loop network (FUCLL), as an underlying input for UBA, UCLFS and SLU.[142]

202. As discussed above, the UCLL pricing review determination requires us to set prices for UCLL and SLU. However, the TSLRIC modelling process does not require us to individually model the non-cabinetised local loop network and the full local loop network, because our modelling will not involve exactly replicating the current existing network. Once we have carried out the modelling exercise, we will consider

---

141 Chorus "Submission in response to the Commerce Commission's Further consultation on issues relating to determining a price for Chorus' UCLL and UBA services under the final pricing principle – Consultation Paper (14 March 2014) and Supplementary Paper (25 March 2014)" 11 April 2014, paragraph [57].

142 Vodafone New Zealand Limited "Comments on process and issues paper for the unbundled copper local loop (UCLL) final pricing principle" 14 February 2014, paragraph [C6.2].

whether we need to set two different prices for NUCLL and FUCLL, or whether the same (averaged) price can apply.[143]

203. We note that in our UCLL benchmarking determination we signalled that an inquiry under the TSLRIC FPP would provide an opportunity to model costs across the cabinetised and non-cabinetised network.[144]

Our preliminary analysis supports an aggregated approach

204. In considering how to map costs to services, we are guided by section 18.

205. Our preliminary analysis leads us to prefer an aggregated approach. An aggregated approach means that the same price applies for access between the end-user and the exchange, irrespective of whether the line is cabinetised or non-cabinetised.

206. The reasons why we prefer an aggregated approach to map costs to services are:

206.1 Competitive neutrality between layer 1 and layer 2 is important to ensure that unbundling is incentivised where it is efficient to do so, and not incentivised where it would be inefficient to do so.[145]

206.2 An aggregated approach is more likely to promote the long-term benefit of end-users. We believe that a disaggregated approach raises the danger that the higher priced service may act as a cost floor to retail pricing where access seekers are constrained in differentiating their retail prices.[146]

206.3 TSLRIC-based prices, based on an aggregated approach, may not fully reflect forward-looking costs. However, we note that mandatory geographic averaging of UBA already dislocates costs and prices by area of New Zealand, meaning that cost reflective prices by cabinetised and non-cabinetised lines may not achieve efficiency benefits.

207. In considering section 18 and how we map costs to prices, we have considered whether any of the following are relevant:

207.1 competition between the copper network and other networks;

207.2 competition on the copper network, in particular competitive neutrality; and

207.3 other considerations including economic efficiency.

---

143 Commerce Commission "Final determination on the benchmarking review of the unbundled copper local loop service" (3 December 2012), NZCC 37, paragraph [319].

144 Commerce Commission "Final determination on the benchmarking review of the unbundled copper local loop service" (3 December 2012), NZCC 37, paragraphs [318]-[319].

145 These section 18 considerations are discussed above in more detail.

146 A disaggregated approach means that we set different prices for between the end-user and the exchange for cabinetised lines and non-cabinetised lines

Competition between the copper network and other access networks

208. In considering how we map costs to services, we are not affecting the quantum of the TSLRIC costs but may be affecting the relative prices between different services.

209. It is, therefore, unlikely to alter the averaged combined price of regulated services. As such, the relative regulated prices between the copper network and other access networks will most likely, on average, be unaffected by the approach we adopt to map costs to services.

Competitive neutrality between cabinetised and non-cabinetised lines

210. We are, however, of the preliminary view that mapping costs to services could potentially impact competition on the copper network, in particular, unbundling.[147] We believe that the reason for this impact on competition is that any approach to map costs to prices is likely to affect the relative prices between layer 1 and layer 2 services, and cabinetised and non-cabinetised lines.

211. The table below lays out the elements of costs incurred in purchasing a wholesale UBA product in comparison to unbundling and sub-loop unbundling.

Table 1: Comparing UBA with the cost to unbundle cabinets and exchanges

Service	Costs
Purchasing the UBA service	UCLL price UBA "additional costs"
Unbundling on non-cabinetised lines	UCLL costs for DSLAMs, Co-location Backhaul to FDS
Unbundling on cabinetised lines	SLU and SLU Backhaul costs for DSLAMs, Co-location Backhaul from the exchange to FDS

212. The UBA price and the UCLL, SLU and SLU Backhaul prices are relevant to the analysis of how mapping costs to services may impact on unbundling. If we disaggregate costs between cabinetised and non-cabinetised lines for UCLL, then:[148]

212.1 the cost of access for an unbundler will differ depending on whether they are unbundling a non-cabinetised line (local loop unbundling – UCLL) or cabinetised line (sub-loop unbundling – SLU and SLU Backhaul);

212.2 unless the UBA costs are also disaggregated across cabinetised and non-cabinetised lines, this means the relativity (or economic space) will differ for unbundlers and sub-loop unbundlers;[149] and

147 Unbundling refers to both unbundling of cabinets and exchanges.

148 We estimate that the proportion of lines that are cabinetised is 43% based on the data provided by Chorus during the UBA and UCLL FPP process.

149 Most importantly, UBA on cabinetised lines would include SLU Backhaul whereas UBA on non-cabinetised lines would not.

212.3 this may materially discourage sub-loop unbundling where it is efficient to do so (on average).[150]

213. Therefore, we would not achieve a position of competitive neutrality described in our section 18 framework. Consequently, our preliminary view is that UBA, UCLL and SLU plus SLU Backhaul must either be all aggregated or all disaggregated to achieve competitive neutrality.

Other considerations in determining an aggregated or disaggregated approach

214. While either a disaggregated or aggregated approach could maintain competitive neutrality, we believe an aggregated approach is more likely to be for the long-term benefit of end-users. This is because there is a danger that disaggregated prices may adversely impact on retail prices. Our concerns here are that:

214.1 the ability of access seekers to differentiate prices to end-users, who are geographically very close, may be constrained, at least to some extent; and

214.2 if this is the case, we note that this could mean that average retail prices based on separate cabinetised and non-cabinetised prices could be higher than prices set under an aggregated approach. This would be because the higher of the access charges may act as a cost floor on retail prices.[151]

215. This leads us to preferring an aggregated approach, ie, no differentiation between cabinetised and non-cabinetised lines from the end-user to the exchange.

216. We have also considered the potential benefits of aligning prices more closely with forward-looking costs, which a disaggregated approach would achieve. In the UCLL IPP decision, we noted the possibility that the costs of cabinetised lines could differ to non-cabinetised lines. A key driver for this possibility was the difference in the copper loop length.[152]

217. However, given the mandatory geographic averaging under the Act, we believe any such benefits are muted.

Conclusion

218. At this stage, our preference is an aggregated approach rather than a disaggregated approach to map TSLRIC costs to services.

---

150 Until the costs are modelled, we cannot be sure how material this will be.

151 Alternatively the supplier could simply refuse to serve higher cost areas which would not promote competition.

152 See, for example, Commerce Commission "Final determination on the benchmarking review of the unbundled copper local loop service" (3 December 2012), NZCC 37, paragraphs [292]-[293], [309] and [315].

Responses to submissions

219. In its submission on the UCLL Process and Issues paper, Telecom suggested that we should model the full network but use an average pricing approach to set prices for services that share the network:[153]

> A decision to model and set a single nationally averaged price for these services [UCLL, UCLFS and the access network uplift component of the UBA service] is consistent with the current application of the Act, protects the coherence of the regulatory framework and provides sensible investment incentives on access providers and access seekers. It allows New Zealand to continue to regulate UCLL at a full-loop price (our current UCLL price is a full-loop price) in the same way as other OECD jurisdictions; or
>
> A decision to disaggregate the costs of the access network into separate prices for these services will irrevocably alter those incentives in ways never contemplated by Parliament and, importantly, will create a logical incompatibility in the regulatory framework currently encapsulated in the Act. It would require New Zealand to shift UCLL pricing from a full-loop basis to a non-cabinetised price. There is no international precedent for this approach.

220. We note that some submitters argued that the SLU Backhaul cost cannot be recovered in SLU or UCLL. For example, CallPlus submitted that the cost of SLU Backhaul cannot be recovered in UCLL because:[154]

220.1 UBA is the service that uses the fibre that feeds the cabinets;

220.2 UBA is the service that drives the need for active cabinets and an increase in the number of cabinets;

220.3 fibre is not a cost component in those services; and

220.4 allocating SLU Backhaul to UCLL and SLU does not comply with the Act.

221. In our worked example below, these concerns are addressed.

A potential approach of aggregation

222. In this section, we provide an example of a possible aggregated approach to ensure competitive neutrality between cabinetised and non-cabinetised lines. We invite submissions on our proposal and alternative approaches to map costs to services.

223. In this example, we assumed the following principles are important to map costs to services:

223.1 The approach should not lead to double recovery.

223.2 The approach should lead to competitive neutrality.

---

153 Telecom "Submission on Process and issues paper for determining a TSLRIC UCLL price" 14 February 2014, p 2, also see paragraphs [54], [61]-[63] and [70]-[71].

154 CallPlus "Submission on the further consultation on issues relating to Chorus UCLL and UBA services - Public version" April 2014, paragraphs [30]-[35] and [40]-[45]; and Orcon and CallPlus "Submissions by CallPlus and Orcon following the further consultation paper and the workshops" 11 April 2014, Section 3.

224. A process that is consistent with our assumed principles is as follows:

224.1 Determine the average cost of all local loop lines.

224.2 Determine an efficient price for SLU Backhaul.

224.3 Share the cost of the local loop between SLU and UCLL until the SLU cost equates to the UCLL cost less the SLU Backhaul cost.

224.4 This example ensures that costs are mapped to services so that the UCLL cost is equal to the cost for SLU and SLU Backhaul.

224.5 Maintaining an averaged UBA cost, and allowing UCLL to be equal to SLU plus SLU Backhaul, potentially neither incentivises nor disincentivises unbundling on average.

224.6 We assume that in an optimal network, the UCLFS customer would pay SLU plus SLU Backhaul to get voice traffic back to the exchange. Therefore, the UCLFS price would be the same as the UCLL and SLU plus SLU Backhaul price.

224.7 In this example SLU Backhaul continues to be recovered as a separate service. We note that a section 30R review of the SLU Backhaul STD would be necessary to give effect to this proposal. The current SLU Backhaul price reflects Chorus' actual costs. It may make sense to revisit this in light of the TSLRIC exercises. We may also revisit how the prices are structured and whether they should be aligned with other layer 1 pricing.

The need to ensure the pricing review determinations stand on their own

225. Finally, we note that our overall approach for the UCLL pricing review determination must be able to stand on its own, independently of the approach we are taking for the UBA pricing review. For example, the costs derived from our FTTN model for UBA, will not provide the basis for setting the UCLL prices (including SLU). Rather, those prices will be derived from the FTTH model we employ in the UCLL pricing review.[155]

[155] See also James Every-Palmer "FPP determination: Issues re service description and the modern equivalent asset - a report prepared for the Commerce Commission" 12 March 2014, paragraph [38].

Key inputs to TSLRIC model

226. As noted earlier in the paper, our view is that our TSLRIC objectives and section 18 will help to inform the modelling of the TSLRIC-based prices for the UCLL and UBA services. This section sets out our preliminary views on the following key inputs to our TSLRIC model:

226.1 Demand;

226.2 Depreciation;

226.3 Taxation; and

226.4 Cost allocation.

Demand

227. As discussed in the TERA paper, there are two high level decisions to be made on demand:

227.1 for UCLL – the overall level of network demand;[156] and

227.2 the level of demand assumed for UBA.[157]

228. As TERA notes in its paper, these demand parameters are important inputs to derive both the scale of the network being modelled and unit prices.[158]

Overall network demand

229. In the UCLL Process and Issues paper, we considered that the starting point for demand in the access network should be the current connection volume of Chorus lines. The access network could then be dimensioned for total connections with cost allocation occurring only across active lines.[159]

230. In its submission on our UCLL Process and Issues paper, Chorus submitted that:[160]

> …the size of the network to be modelled is based on what Chorus is obliged to provide under the UCLL STD, which does not require forecasting. When modelling that size, the Commission

---

156 TERA Consultants "TSLRIC price review determination for the Unbundled Copper Local Loop and Unbundled Bitstream Access services: Modern Equivalent Assets and relevant scenarios" July 2014, p [56].

157 TERA Consultants "TSLRIC price review determination for the Unbundled Copper Local Loop and Unbundled Bitstream Access services: Modern Equivalent Assets and relevant scenarios" July 2014, p [].

158 Total demand is used to dimension the network, namely the number and location of subscribers affects the quantity of network assets required.

159 Commerce Commission "Process and issues paper for determining a TSLRIC price for Chorus' unbundled copper local loop service in accordance with the Final Pricing Principle" (6 December 2013), paragraph [133].

160 Chorus "Submission in response to the Commerce Commission's Process and issues paper for determining a TSLRIC price for Chorus' unbundled copper local loop service in accordance with the Final Pricing Principle" 14 February 2014, paragraph [269].

should have regard to all active and inactive lines. In other words, when it comes to modelling the network, changing connection volumes are irrelevant.

231. Analysys Mason, for Chorus, submitted that it is not appropriate to assume that future demand on the modelled network will be equal to current demand. In its view, it is likely to be lower due to both mobile substitution (for the subset of consumers for who mobile-only is a viable option) and competition from alternative fixed access networks. In its view, as there are competing LFC networks in some geographies, any assumption of 100% local market share would result in a super-efficient cost level that cannot be reached by any of the actual operators.[161]

232. Telecom's view was that demand in the UCLL FPP model should in the first instance be based on all current end-users.[162] Vodafone supported the principle that demand should be modelled for a single efficient next generation access network that includes end-users that may migrate to Chorus' fibre network.

233. TERA has advised us that we also need to consider whether to model an initial ramp-up in demand to current levels.[163] Accordingly, we have considered three potential options for the overall level of network demand:

    233.1 demand which ramps-up to 100% demand over time, reflecting either a quick or graduated build-up of demand on the modelled network;

    233.2 demand which reflects the expected migration pattern away from the modelled network to alternative networks; and

    233.3 all demand with neither migration to, or away, from the modelled network.

234. As discussed earlier in this paper, our TSLRIC outcomes include setting regulated prices which will reflect efficient build or buy investment decisions.

235. Models that reflect migration of demand to the network, or migration away from the network, will impose additional costs on end-users which are not necessarily efficient:

    235.1 Modelling demand to include migration to the network will not reflect an efficient benchmark. For example, in a competitive market a new network operator would only be able to attract end-users from alternative networks if its quality or price was more attractive. Therefore, for an operator to efficiently displace an existing network, it may need to absorb the costs of the initial under-utilisation of that network, rather than end-users bearing those costs.

---

161 Analysys Mason "Report for Chorus - Response to Commission" 12 February 2014, pp 7-8.

162 Telecom "Submission on Process and issues paper for determining a TSLRIC UCLL price" 14 February 2014, paragraph [152].

163 TERA Consultants "TSLRIC price review determination for the Unbundled Copper Local Loop and Unbundled Bitstream Access services: Modern Equivalent Assets and relevant scenarios" July 2014, p [56].

235.2 If migration away from Chorus' actual network to alternative networks is included within the model, this again will not reflect an efficient outcome. Here again, declining utilisation of the network would imply a higher cost to end-users and could attract build decisions where that is not efficient.[164]

236. Accordingly, our view is that we should model 100% of demand and assume no initial ramp-up or migration away to alternative networks.

237. By modelling the efficient costs of building a network to meet 100% of demand, we believe the appropriate incentives to invest are provided. As we note above, setting demand assumptions that impose the cost of transitioning from one network to another on end-users would not reflect efficient incentives to invest (or innovate).

238. In this respect, the TSLRIC-based price represents an efficiency benchmark – the regulated prices will be based on the efficient costs of building the network at the existing level of demand. This level will promote the efficient choice (on average) of whether to build or buy. We do not believe that modelling either ramping up demand or expected migration away from Chorus' copper network will meet this objective. This has led us to conclude that modelling 100% of demand will best meet the TSLRIC objectives.

239. TERA has noted that providing a fast growing migration assumption may provide investment signals, but not necessarily efficient outcomes.[165]

240. We have also considered whether section 18, and in particular subsections 18(2) and 18(2A), should guide us to an alternative conclusion. For the same reasons as above, we do not.

Demand for UBA

241. TERA's paper has noted that there are two potential approaches for modelling the scale of the operator for the UBA service:[166]

241.1 an equally efficient operator (EEO) level of demand, which reflects the economies of scale of the incumbent; and

241.2 a reasonable efficient operator (REO) level of demand, which reflects an alternative operator with a smaller number of customers than the incumbent.

242. Therefore, we have considered whether it is unrealistic to consider that unbundlers could achieve the same scale as Chorus at local exchanges in the provision (or self-provision) of bitstream. If this is the case, we would need to further consider

---

164 We also note that the declining utilisation could lead to a cost spiral – increasing costs would likely accelerate migration away from the network, leading to further cost increases to end-users that remain on the network.

165 TERA Consultants "TSLRIC price review determination for the Unbundled Copper Local Loop and Unbundled Bitstream Access services: Modern Equivalent Assets and relevant scenarios" July 2014, p [57]

166 TERA Consultants "TSLRIC price review determination for the Unbundled Copper Local Loop and Unbundled Bitstream Access services: Modern Equivalent Assets and relevant scenarios" July 2014, pp [68]-[69].

whether modelling all demand may actively discourage unbundling and whether this would be contrary to section 18.

243. The largest potential unbundler going forward will be Telecom who currently purchases over half the active UBA connections provided by Chorus.

244. Given the scale of Telecom, we do not consider that there is a significant distinction between an equally and realistically efficient operator in New Zealand. This is largely driven by the vertical separation of Telecom into the Telecom and Chorus businesses.

245. We therefore consider that an EEO level of demand is appropriate for UBA because it will be more likely to achieve a position of competitive neutrality, where unbundling will occur where it is efficient to do so. This involves modelling 100% of demand for the UBA service.

Depreciation

246. Most of the costs incurred in providing the UBA and UCLL services are on fixed infrastructure assets or capital goods that are useful over many years. A forward-looking cost-based price assumes that these costs are recovered over a number of years. Depreciation determines the amount of an asset that the network operator can recover each year through the regulated access price.

247. In the UCLL Process and Issues paper, we outlined our preliminary assessment that a tilted annuity approach should be used rather than straight-line or economic depreciation.[167] In that paper, we asked submitters whether an alternative depreciation approach to tilted annuity should be used and if so, why it would be preferable.

248. Submitters responded as follows:

248.1 Frontier Economics, for Vodafone, Telecom and CallPlus, submitted that a tilted annuity methodology should be used for depreciation, and that economic depreciation should not be used due to the complexities. In doing so, Frontier recommended against using straight line depreciation given its tendency to front load allowed revenues.[168]

248.2 Telecom stated that economic depreciation would generally be preferred to the tilted annuity methodology in telecommunications cost models, but given that the economic depreciation methodology is difficult, a tilted annuity

[167] Commerce Commission “Process and issues paper for determining a TSLRIC price for Chorus' unbundled copper local loop service in accordance with the Final Pricing Principle” (6 December 2013), paragraphs [167]-[168].

[168] Frontier Economics "Determining a TSLRIC price for Chorus’ UCLL service - A report prepared for Vodafone New Zealand, Telecom New Zealand and CallPlus" February 2014, p [41].

methodology may well provide an acceptable proxy for economic depreciation if all relevant factors are fully considered.[169]

248.3 Both Chorus and Analysys Mason (on behalf of Chorus) submitted that an adjusted tilted annuity (with an additional tilt for demand changes) and simple economic depreciation would both be superior to tilted annuity, given the possibility of a future migration to an alternative access technology. Both submitted that the adjusted tilted annuity may be an appropriate simplification to ensure the model results are delivered by December 2014.[170]

248.4 Vodafone argued that a standard or straight line annuity should apply to re-used assets, while a titled annuity methodology (using CPI adjustments) should apply to assets valued at ORC.[171]

249. We note that while an economic depreciation methodology is considered to be the most robust methodology, it is the most complex to implement and the availability of the necessary information may be limited.

250. Our view is that the tilted annuity methodology is a good proxy for economic depreciation where the demand profile is stable. Therefore, given our preliminary preference is to adopt a stable demand profile, a tilted annuity methodology is likely to produce a similar result to an economic depreciation methodology.

251. Likewise, an adjusted tilted annuity methodology, as recommended by Chorus and Analysys Mason, is only superior to tilted annuity where demand is stable.

252. Accordingly, our preliminary view remains that a titled annuity methodology is the most appropriate for our TSLRIC modelling exercise, because:

252.1 A tilted annuity methodology is the most widespread depreciation methodology used in electronic communication regulations, and we have previously adopted a tilted annuity methodology in the TSLRIC context. In our view this approach is therefore most consistent with our TSLRIC objective of predictability.

252.2 Over the lifetime of the assets, a tilted annuity will result in a relatively constant rate of change in prices in a situation where a stable demand profile

---

169 Telecom "Submission on Process and issues paper for determining a TSLRIC UCLL price" 14 February 2014, paragraphs [166]-[168].

170 Chorus "Submission in response to the Commerce Commission's Process and issues paper for determining a TSLRIC price for Chorus' unbundled copper local loop service in accordance with the Final Pricing Principle" 14 February 2014, paragraphs [79] and [279]; and Analysys Mason "Report for Chorus - Response to Commission" 12 February 2014, p [34].

171 Vodafone New Zealand Limited "Comments on process and issues paper for the unbundled copper local loop (UCLL) final pricing principle" 14 February 2014, recommendations 24 and 25, p 28.

is modelled.[172] This will avoid windfall gains and losses being caused by the depreciation profile over the life of the assets.

Modelling basis for taxation

253. The TSLRIC-based price we derive will be a pre-tax amount, however tax costs would be incurred by the hypothetical efficient operator in supplying the UCLL and UBA services.

254. Given that the price we derive needs to be a pre-tax amount, our preliminary view is to adjust the tilted annuity capital charges for each type of asset by taking into account an appropriate tax depreciation rate.

255. The reason for our preliminary decision is to ensure that the result is not an inaccurate TSLRIC-based price due to an over estimation of the hypothetical tax position of a hypothetical efficient operator.

256. Our understanding (from discussions with TERA) is that internationally, TSLRIC models for UBA and UCLL typically use a pre-tax WACC when deriving the tilted annuity capital charge (comprising a return on and return of the hypothetical efficient operator's asset value).

257. However, transforming a post-tax WACC value to a pre-tax basis can be controversial, because simple analytical transformations (eg, only taking into account the corporate tax rate), often materially over-estimate (or in some cases under-estimate) the resultant pre-tax WACC.[173] This is particularly the case where:

    257.1 the effective tax rate differs from the corporate tax rate due to the use of diminishing value depreciation permitted by tax rules; and

    257.2 the asset value for pricing purposes is revalued (as would be the case under a tilted annuity approach that takes into account asset price inflation for each type of asset), because under tax rules the tax asset value is not revalued.

258. We propose to provide for tax costs in the TSLRIC price by deriving a tax-adjusted tilted annuity charge for each type of asset modelled. In addition to taking into account the relevant asset lifetime and asset price inflation rate, each tax-adjusted tilted annuity charge will take into account a diminishing value tax depreciation rate appropriate to that type of asset. Attachment A provides a potential approach for deriving a tax-adjusted tilted annuity charge.

---

[172] However, as is explained below, over the regulatory period (which will typically be shorter than the lifetimes of many types of assets) we are proposing to set a TSLRIC price for UBA and UCLL services that is constant in nominal terms.

[173] For example, in our recent review of the effectiveness of information disclosure regulation in limiting excessive profits at Christchurch Airport, we drew attention to the complications in undertaking such a transformation: Commerce Commission, Report to the Ministers of Commerce and Transport on how effectively information disclosure regulation is promoting the purpose of Part 4 for Christchurch Airport, 13 February 2014, at [F47]-[F48].

TSLRIC price profile for UBA and UCLL services

259. Our preference is to set a constant TSLIRC price in nominal terms over the regulatory period. This would be equivalent in present value terms to the tax-adjusted tilted annuity prices over the regulatory period.

260. Our reasons for preferring this price profile are:

260.1 The price profile would be consistent with the current price profile for UBA and UCLL services.

260.2 This price profile also smooth's prices over the regulatory period and, therefore provides stability in regulated prices during that period.

Cost allocation

261. The Act requires us to include a reasonable allocation of forward-looking common costs, including other telecommunication services. The Act prescribes that: [174]

> 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.

262. We interpret 'reasonable' to be a level of cost between standalone cost and incremental cost.[175] This view was also provided in the UCLL Process and Issues paper.[176]

263. Our view is that a TSLRIC model needs to take into account both regulated and unregulated services to capture the right economies of scope and scale. Cost allocation based only on regulated services is unlikely to result in efficient price signals. Such an approach is likely to result in higher prices, relative to prices including non-regulated services.

264. The allocation of common costs is a significant regulatory challenge. In a telecommunications network, it is unusual for assets to be used exclusively for one

---

[174] Clause 1 of Schedule 1 of the Act.

[175] The stand-alone cost of deploying all of the elements that deliver the UCLL Service eg ducts, poles, exchange buildings, provisioning systems etc. Incremental cost is the additional cost to provide UCLL over and above other existing service(s) provided over the UCLL network eg UCLFS bears the common cost of ducts, poles, exchange buildings, provisioning systems etc.

[176] Commerce Commission "Process and issues paper for determining a TSLRIC price for Chorus' unbundled copper local loop service in accordance with the Final Pricing Principle" (6 December 2013), paragraph [139].

set of services. Instead, they are shared between a group of services or even among an entire portfolio of services offered by an operator.[177]

265. This section sets out our preliminary views, reasoning and responses to submissions on our approach to:

265.1 defining services to consider for the purposes of cost allocation;

265.2 defining cost categories; and

265.3 allocating cost within the categories defined.

Services that we will consider for cost allocation

266. Our preliminary decision is that our model will allow for a reasonable allocation of UBA/UCLL services of costs shared with:

266.1 Telecommunication services, including both regulated and unregulated services, provided by the service provider.

266.2 Non-regulated services for assets shared with third parties, such as electricity poles.

267. Our view is that this approach is likely to lead to a reasonable allocation of costs to each regulated service that lies between the incremental (or directly attributable) costs and the standalone cost of each regulated service.

268. Unlike our discussion on re-use of Chorus' assets, we do not believe there are any section 18(2A) considerations relevant here. Chorus shares some poles in delivering its services today. Based on the data we have received from Chorus and other LFCs, it seems that asset sharing is primarily restricted to existing poles.[178]

269. Our preference is to determine the non-regulated services as follows:

269.1 TERA advised us that non-regulated services for the hypothetical efficient provider could be based on the services offered by Chorus in the market at the time we determine a final price.

269.2 Non-regulated services for assets shared with third parties, namely where assets owned by parties other than the service provider form part of the hypothetical network (eg, power poles and ducts), the cost of these shared assets is also taken into account. [179]

---

[177] TERA Consultants "Modification and development of the LRAIC model for fixed networks 2012-2014 in Denmark - Final Model Reference Paper prepared for the Danish Business Authority" July 2013, p 36.

[178] Re-use of ducts seems to be limited to service lead-ins. As for the rest of the access network, new ducts for fibre are apparently being built, so here re-use of ducts is minimal.

[179] Also refer to Commerce Commission "Process and issues paper for determining a TSLRIC price for Chorus' unbundled copper local loop service in accordance with the Final Pricing Principle" (6 December 2013), paragraph [71].

Defining cost categories

270. Our preliminary view is that we should distinguish between costs and assets that are directly attributable and not directly attributable to services being modelled for the purposes of our TSLRIC modelling: [180]

270.1 Costs directly attributable are defined as those that can be wholly or solely associated with a single type of service; and

270.2 Costs not directly attributable are all other costs, namely those that cannot be wholly or solely associated with a single type of service.

271. Our approach is likely to lead to an allocation of costs to each service which lies between the incremental (or directly attributable) costs for the UBA and UCLL services, and the standalone cost of each.

272. Using the concepts discussed in our UCLL Process and Issues paper, this means:

272.1 shared costs will be dealt with as costs not directly attributable; and

272.2 non-network and network costs will fall into directly attributable or not directly attributable categories as appropriate.

273. Our preliminary view is that we will use the following cost categories to allocate cost in the TSLRIC model:

273.1

273.2 Network costs. These costs encompass common network elements, such as exchange buildings.

273.3 Non-network costs. These costs comprise of corporate overheads, such as finance, human resources, legal, and planning departments.

Allocation of network costs that are not directly attributable

274. As stated above, network costs encompass common network elements such as exchange buildings. Network costs are related to both operating expenditure and capital expenditure.

275. Our preliminary view is to adopt different cost allocation approaches, depending on whether cost drivers can be identified or not.

276. In considering a cost allocation approach, where cost drivers can be identified, our preliminary decision is to adopt different approaches for UCLL and UBA for the cost allocation related to network costs.

---

[180] The definition is based on Input Methodologies (EDBS and GPBs) reasons paper, see Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), paragraph [3.2.24].

277. For the UBA service, our preliminary view is to adopt a causal approach, if cost drivers can be identified. The table below provides a summary of the possible cost drivers, a description of the cost driver and our preliminary view on whether the cost driver is appropriate or not for our TSLRIC modelling exercise.

Table 2: UBA service: Cost drivers for a causal approach

Cost driver	Description	Appropriate?
Input-based	Costs can be allocated to a service based on known inputs employed in the production of that service, such as labour. Another example is civil engineering; the cost is allocated between the different network levels based on the number of cables used, or size of cables.	Yes. Mostly used for the cost allocation for civil engineering.
Output-based	Costs can be allocated using output indicators, such as traffic levels on the network.	Yes. Relevant for UBA and is mostly used in BU-TSLRIC models.
Value-based	Cost can be allocated based on demand factors, such as revenues or consumers' willingness to pay.	No. difficult to observe.

Source: Commission's own analysis

278. For the UCLL service, our approach is likely to be different given that the UCLL service is not driven by traffic or active customers, but rather by the number of premises to connect.

279. If cost drivers cannot be identified, our preliminary view is to use, as appropriate, either a capacity-based methodology or a Shapley Shubik methodology to allocate costs that are not directly attributable for network costs.[181] Our preference, at this stage, is to use this approach for both the UBA and UCLL services.

280. Both the cost allocation methodologies are summarised in table 3 below.

[181] Shapley-Shubik allocation is a game-theory rule which consists of setting the cost of a service equal to the average of the incremental costs of the service after reviewing every possible order of arrival of the increment.

Table 3: Methodologies to allocate network costs that are not directly attributable

Options	Description	Appropriate?
Capacity-based method	Common and shared costs attributed in proportion to their share of capacity required by each service to total capacity.	Yes. Traditional approach used in most TSLRIC models. Linked to traffic that is a cost driver.
Shapley Shubik method	Common and shared costs attributed based on game-theory rules.	Yes. Complex and requires the model to run several times. Based on a cost allocation basis per service. This approach has been used in France, Ireland and Denmark.

Source: Commission's own analysis

281. Section 18 considerations will guide us in respect of allocating costs between services, where relevant.

Allocation of non-network costs that are not directly attributable

282. As described above, non-network costs comprise of corporate overheads, such as finance, human resources, legal, and planning departments.

283. In considering cost allocation for non-network costs for both UBA and UCLL, we considered both the Equi-proportional mark-up (EPMU) methodology and the Ramsey-pricing methodology.

284. Table 4 below summarises the two methodologies to allocation costs for non-network services.

Table 4: Methodologies to allocate non-network costs that are not directly attributable

Options	Description	Appropriate?
EPMU	Common costs attributed in proportion to direct and indirect attributable costs of the service.	Yes. This approach is appropriate for non-network costs and is used widely.
Ramsey method	Common cost allocated on the basis of relative demand elasticities.	No. Complex. Elasticities along the demand curves are very difficult to observe. Rarely used in practice.

285. Our preliminary view is to use the EPMU methodology. Utilising the EPMU method ensures that costs are spread across all relevant services by the same percentage. The percentage is calculated as the ratio of total common costs to the total incremental costs.

286. In response to our UCLL Process and Issues paper, most parties supported use of the EPMU methodology.[182]

287. Telecom added that when common costs are allocated across the regulated portfolio of products and the unregulated portfolio of products, the likely disparity in demand elasticities makes the use of EPMU questionable and that we should: [183]

> consider the use of a range of options including [input, output and value-based cost drivers] where there is doubt as to the scale of difference in demand elasticities, where there is a clear difference, or, in the absence of evidence to the contrary, where there is a mix of regulated and unregulated products across which common costs must be allocated.

288. We have taken Telecom's submission on board on this topic and, where possible, we will seek to identify causal factors for allocating costs and assets to the UBA and UCLL services.

[182] Chorus "Submission in response to the Commerce Commission's Process and issues paper for determining a TSLRIC price for Chorus' unbundled copper local loop service in accordance with the Final Pricing Principle" 14 February 2014, paragraph [277]; and Frontier Economics "Determining a TSLRIC price for Chorus' UCLL service - A report prepared for Vodafone New Zealand, Telecom New Zealand and CallPlus" February 2014, p [26].

[183] Telecom "Submission on Process and issues paper for determining a TSLRIC UCLL price" 14 February 2014, paragraph [160].

We have discretion to backdate the UCLL and UBA FPP prices

289. In our supplementary consultation paper, dated 25 March 2014, we attached legal advice suggesting that we have a discretion whether to backdate the FPP prices, but that we could not make a final decision on backdating until the relevant final pricing review determinations were made. We invited submissions on the relevant considerations and evidence that we should have regard to in deciding whether to backdate. We also sought submitters' views on how to implement backdating if a decision to backdate is taken.[184]

290. Chorus submitted that backdating is required by the Court of Appeal's decision in *Telecom New Zealand Ltd v Commerce Commission*,[185] but that we can apply mechanisms such as smoothing to implement backdating.[186] In its view, the FPP prices should be backdated until the date the IPP prices came into effect.

291. Telecom does not favour backdating, taking the view that we have the discretion not to backdate.[187] Telecom notes that efficiency considerations are relevant to our decision whether or not to backdate[188] and that our primary task is to ensure that our decision is consistent with our statutory obligations, section 18 in particular.[189] Telecom also expressed concerns about Chorus' suggested mechanisms to implement backdating as being likely to have the effect of holding inefficient prices for an extended period, suggesting that it would be more efficient to simply determine not to backdate in the first instance.[190]

292. Telecom also submitted an opinion from its legal advisors Russell McVeagh to the effect that in making a decision on backdating, we will need to take account of the following considerations:

    292.1 The Act is silent on backdating.

---

184 Commerce Commission "Further consultation paper on issues relating to determining a price for Chorus' UCLL and UBA services under the final pricing principle - supplementary paper" (25 March 2014), paragraph [5].

185 Telecom New Zealand Ltd v Commerce Commission CA75/05, 25 May 2006.

186 Chorus "Submission in response to the Commerce Commission's Further consultation on issues relating to determining a price for Chorus' UCLL and UBA services under the final pricing principle – Consultation Paper (14 March 2014) and Supplementary Paper (25 March 2014)" 11 April 2014, paragraph [2]; Chapman Tripp "Memorandum to Chorus on unbundled copper local loop (UCLL) and unbundled bitstream (UBA) access services - pricing review determination (PRDs) - legal framework" 11 April 2014, paragraphs [5.8], [9], [33]; Chorus "Cross-submission in response to the Commerce Commission's Further consultation on issues relating to determining a price for Chorus' UCLL and UBA services under the final pricing principle – Consultation Paper (14 March 2014) and Supplementary Paper (25 March 2014)" 30 April 2014, paragraph [5.7]

187 Telecom "UCLL and UBA FPP: further consultation and supplementary paper - Submission" 11 April 2014, paragraphs [63], [64], [66]

188 Telecom "UCLL and UBA FPP: further consultation and supplementary paper - Submission" 11 April 2014, paragraph [66].

189 Russell McVeagh "Memorandum to Telecom on UCLL and UBA Final Pricing Reviews" 30 April 2014, paragraph [4(g)]

190 Telecom "UCLL and UBA FPP: further consultation and supplementary paper - Cross submission" 30 April 2014, paragraph [74].

292.2 The Court of Appeal has clearly stated that an FPP price should be treated as more efficient than the IPP price it replaces.

292.3 The Courts have not considered how backdating should be applied in the materially different circumstances of an FPP for an STD.

292.4 Backdating will amount to giving the FPP determinations retrospective effect.

292.5 The normal legal presumption is against retrospectivity, which can only be rebutted by clear statutory intent.[191]

293. Vodafone agreed with the conclusions in our legal advice, namely that:

293.1 we have discretion whether to backdate; the Act does not require it;

293.2 the exercise of discretion will be informed by a number of relevant factors; section 18 provides the most important guidance, but we must also consider the effects of any decision to apply a price set via FPP processes retrospectively; and

293.3 we should not make a final decision on whether backdating should occur before completing the analysis for our FPP determinations.[192]

294. Vodafone also submitted that, if we were to backdate, then an approach which ensured any under or over recovery was addressed on a smoothed, go-forward basis (such as the approach taken for claw-back under Part 4 of the Commerce Act 1986) is more likely to deliver outcomes consistent with section 18 than an approach which requires access seekers or the access provider to make a lump sum payment.[193]

295. Both Telecom and Vodafone submitted that backdating a higher price would have a greater distortionary competitive impact than backdating a lower price.[194]

296. CallPlus, in line with Telecom and Vodafone's submissions, submitted that it did not agree with Chorus' view on backdating. CallPlus considers that we have the

---

191 Russell McVeagh "Memorandum to Telecom on UCLL and UBA Final Pricing Reviews" 30 April 2014, paragraph [39]; Telecom "UCLL and UBA FPP: further consultation and supplementary paper - Cross submission" 30 April 2014, paragraph [71]

192 Vodafone New Zealand Limited "Submission to the New Zealand Commerce Commission - Comments on further consultation papers on issues relating to determining a price for Chorus' UCLL and UBA services under the final pricing principle " 11 April 2014, paragraphs [F1], [F4]. See also Vodafone New Zealand Limited " Cross-submission on further consultation papers on issues relating to determining a price for Chorus' UCLL and UBA services under the final pricing principle" 30 April 2014, paragraphs [G1]-[G2].

193 Vodafone New Zealand Limited "Submission to the New Zealand Commerce Commission - Comments on further consultation papers on issues relating to determining a price for Chorus' UCLL and UBA services under the final pricing principle " 11 April 2014, paragraph [F9].

194 Vodafone New Zealand Limited "Submission to the New Zealand Commerce Commission - Comments on further consultation papers on issues relating to determining a price for Chorus' UCLL and UBA services under the final pricing principle " 11 April 2014, paragraph [F6]; and Telecom "UCLL and UBA FPP: further consultation and supplementary paper - Cross submission" 30 April 2014, paragraph [73]

discretion to make a decision based on what is likely to give best effect to section 18 but that we should not make this decision until the final FPP pricing is decided.[195]

297. InternetNZ submitted that certainty is best served by us deciding not to backdate.[196]

Our preliminary criteria for backdating

298. Having considered legal advice and submissions, our view is that we are not required to backdate our pricing review determinations, but that we have discretion to do so.

299. Consistent with our legal advice, we do not intend to make any final decision on backdating in advance of the draft pricing review determination. However we will apply the following criteria to our decision whether or not to backdate:

299.1 We agree with the submission that section 18 will provide us with the most important guidance.

299.2 In particular, any decision to backdate will need to be demonstrably efficient.

299.3 Likewise, a backdated sum payable to the access provider (either as a lump sum, or "smoothed"), or a backdated price reduction in favour of access seekers would need to demonstrably promote competition in a way that is likely to directly benefit end-users.

299.4 We are open to smoothing any backdated sum.

300. We will reach a preliminary decision on backdating, if any, in our draft determination.

[195] CallPlus "Cross Submission on the further consultation on issues relating to chorus' UCLL & UBA services" April 2014, paragraphs [32]-[33]

[196] InternetNZ "Submission: Further Consultation on issues relating to determining a price for Chorus' UCLL and UBA services under the Final Pricing Principle." 11 April 2014, p [11].

Regulatory period

301. This section sets out our preliminary decision on the regulatory period used for our TSLRIC modelling. This section also explains why the regulatory period is important in our TSLRIC modelling, our reason for the decision, and our responses to submissions received in response to consultation on our UBA and UCLL FPP review process on the regulatory period.

Role of the regulatory period in a TSLRIC model

302. Under section 52(f) of the Act, we are required to set an expiry date in the FPP price review determinations. The choice of expiry date will determine the length of the period over which the FPP price will apply (regulatory period).

303. The regulatory period in the TSLRIC model has two important roles in a TSLRIC cost model:

303.1 it is a key input used to estimating the weighted average cost of capital (WACC); and

303.2 it sets the timeframe the TSLRIC price calculation will be in force. This means the regulatory period sets both the commencement data and expiry date of the model.

304. The length of the regulatory period is likely to be a trade-off between providing regulatory certainty and maintaining flexibility. Market certainty may support an extended regulatory period, while flexibility may favour a shorter timeframe in order to adjust for any relevant market changes.[197]

305. Most submissions on our UCLL Process and Issues paper supported a five-year regulatory period. However, Chorus argued that 10 years is the appropriate length for the regulatory period, primarily because, in its view, that length of period would provide more certainty for business planning and investment.

306. Chorus submitted that:[198]

> A long regulatory period will provide pricing certainty to assist Chorus and Retail Service Providers (RSPs) to make their business plans and make investments on an informed basis. We think the Determination should last until 2025, or ten years from the date the UCLL FPP is determined. At a minimum it must last until 2020 to match the contracted period for UFB prices.

307. Chorus submitted that a 10-year regulatory period will:[199]

---

197 Commerce Commission "Process and issues paper for determining a TSLRIC price for Chorus' unbundled copper local loop service in accordance with the Final Pricing Principle" (6 December 2013), paragraph [34].

198 Chorus "Submission in response to the Commerce Commission's Process and issues paper for determining a TSLRIC price for Chorus' unbundled copper local loop service in accordance with the Final Pricing Principle" 14 February 2014, paragraph [23].

> …maximise the commercial certainty for Chorus and its customers in the transition to fibre.

308. Vodafone submitted that it thought a five-year regulatory period, ending in 2019, would take into account:[200]

> …the significant changes to the industry (including, potentially, to the applicable regulatory framework) expected between now and then.

309. Frontier Economics, on behalf of Vodafone, Telecom and CallPlus, submitted that:[201]

> …the Commission should try and lock in the costing method and UCLL price for a period of 5 years. This would allow for a reasonable period of certainty.

310. Telecom supported the idea of a five-year regulatory period, indicating that our first scheduled review should be at the end of 2019.[202] Telecom also suggested that:[203]

> ...the Commission should "lock" UCLL pricing for a period of three years following its final FPP determination. During this period, it could monitor UCLL pricing during the regulatory period and, if the Commission's monitoring process discloses a material divergence from efficient pricing prior at this point it could implement a s 30R review to re-set the pricing at that point. If a material divergence is not suggested by this monitoring, then the price would remain constant for the five year period. In this context we would propose that "material divergence" would be a change of more than 15% in the UCLL FPP price.

311. In its cross-submission on the UCLL Process and Issues paper, Chorus supported the importance that Frontier Economics placed on certainty. However, Chorus argued that Frontier's arguments would better support a regulatory period a little longer than Frontier's suggested minimum.[204] Chorus also argued that Telecom's suggestion of a potential reset after three years would "undermine any sense of certainty for the industry".[205]

312. Chorus disagreed with Vodafone's suggestion that the regulatory period should run until 2019. Chorus also proposed that a 10-year regulatory period is beneficial

---

199 Chorus "Submission in response to the Commerce Commission's Process and issues paper for determining a TSLRIC price for Chorus' unbundled copper local loop service in accordance with the Final Pricing Principle" 14 February 2014, paragraph [125].

200 Vodafone New Zealand Limited "Comments on process and issues paper for the unbundled copper local loop (UCLL) final pricing principle" 14 February 2014, recommendation 7, p 12.

201 Frontier Economics "Determining a TSLRIC price for Chorus' UCLL service - A report prepared for Vodafone New Zealand, Telecom New Zealand and CallPlus" February 2014, p 38.

202 Telecom "Submission on Process and issues paper for determining a TSLRIC UCLL price" 14 February 2014, p [19].

203 Telecom "Submission on Process and issues paper for determining a TSLRIC UCLL price" 14 February 2014, p [19].

204 Chorus "Cross-submission in response to submissions on the Commerce Commission's Process and Issues paper for determining a TSLRIC price for Chorus' unbundled copper local loop (UCLL) service in accordance with the Final Pricing Principle" 28 February 2014, paragraph [75].

205 Chorus "Cross-submission in response to submissions on the Commerce Commission's Process and Issues paper for determining a TSLRIC price for Chorus' unbundled copper local loop (UCLL) service in accordance with the Final Pricing Principle" 28 February 2014, paragraph [77].

because it would allow for any legislation changes that arise from the Crown's scheduled review of the Act to be considered:[206]

313. Chorus noted that this was the completion date of the UFB and LTE rollouts and it would be better to run until 2025 when the majority of customers are no longer expected to be on copper, but will be getting their broadband on either the LTE or UFB networks.[207]

> Given the scheduled review of the Act in 2020, a longer regulatory period (ie, until 2025) would allow the Commission time to consider the implications of any new legislation arising from the review.

Our preliminary decision

314. Our preliminary decision is that:

314.1 a five-year regulatory period is the most appropriate for our TSLRIC modelling; and

314.2 we should have the same regulatory period for both the UCLL and UBA services, ie, five years. This is supported by relativity.

Reasons for our preliminary decision

315. The primary reason why we currently favour a five-year regulatory period is that the telecommunications markets at issue are fast changing, both in technology terms and in terms of the applicable regulatory settings.

316. In 2019 the UFB roll out will be significantly further advanced and we will have a better idea of the effects of UFB migration on the markets for UCLL and UBA. By then the Government's review of the Act will have been completed and any changes will have taken effect. In combination, these matters seem to us to suggest that a 10-year period would be too long.

317. We also consider five years to be supported by the broader legislative context. The Act does not define how often we should review a STD (or in this case the price term in the STD). However, it does provide some guidance that suggests a five-year regulatory period is appropriate.

318. Five years is the period within which we must consider whether to review whether a service should remain regulated. Schedule 3 1(3) of the Act says we must consider:

> … at intervals of not more than 5 years after the date on which a designated service or specified service came into force, whether there are reasonable grounds for commencing an investigation into whether the service should be omitted from Schedule 1 under s 66(b).

---

206 Chorus "Cross-submission in response to submissions on the Commerce Commission's Process and Issues paper for determining a TSLRIC price for Chorus' unbundled copper local loop (UCLL) service in accordance with the Final Pricing Principle" 28 February 2014, paragraph [76.2]

207 Chorus "Cross-submission in response to submissions on the Commerce Commission's Process and Issues paper for determining a TSLRIC price for Chorus' unbundled copper local loop (UCLL) service in accordance with the Final Pricing Principle" 28 February 2014, paragraph [76.1].

319. Given that the Act requires us to review whether to de-regulate a service within five years, it is appropriate that we should endeavour to review prices in STDs at no longer than five-year intervals.

320. We note that section 53M(4) of the Commerce Act 1986 requires every price-quality path, whether it is a default price-quality path (DPP) or a customised price-quality path (CPP), to have a five-year regulatory period. This is more prescriptive than the Act, but it is widely agreed that the telecommunications market is a faster changing market, which supports our view that we should be reviewing STD prices at intervals of no longer than five years.

321. We also note that overseas practice is to adopt a shorter regulatory period. Some international regulators support a shorter regulatory period in the telecommunications context. For example, Sweden, France, Denmark, Ireland and Germany all support a regulatory period of three years.[208]

[208] See, for example, TERA Consultants "TSLRIC literature review on UBA and UCLL costing approaches" June 2014, p 8.

Attachment A: adjustment to pre-tax annuity factor

322. The complete real capital recovery factor, i.e. the annuity factor adjusted for tax, is :

$$a_{it} = PMT(WACC_{real}, n) * Adjustment_i$$

323. Where:

323.1 a_i is the tax adjusted tilted annuity factor for the i[th] asset type

323.2 *PMT* is the payment function in excel

323.3 *n* is asset life

323.4 $WACC_{real}$ is the real post-tax cost of capital

323.5 $Adjustment_i$ is the adjustment to pre-tax annuity factor

324. The real post-tax WACC ($WACC_{real}$) is calculated as:

$$WACC_{real} = \frac{1 + WACC_{nominal}}{1 + p} - 1$$

325. Where:

325.1 $WACC_{nominal}$ is the nominal post-tax cost of capital

325.2 *p* is the tilt, i.e. the asset price inflation rate for the i[th] asset type

326. The adjusted term above for each type of asset is: :

$$Adjustment_i = \frac{\left(1 - \frac{t * d_i}{d_i + WACC_{nominal}}\right)}{(1 - t)}$$

327. Where:

327.1 *t* is the corporate tax rate

327.2 *d* is the diminishing tax depreciation rate for the i[th] asset type