

UBA Pricing Issues

Prepared for

Internet New Zealand, TUANZ and Consumer NZ

Authorship

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Executive Summary

We have been asked to review the Commerce Commission's Unbundled Bitstream Access Service Price Review paper which proposes a novel approach to benchmarking.

We have serious concerns approach the Commission has taken to benchmarking in this paper. Should this paper form the basis of its final determination, a very important and undesirable precedent would be created. That precedent would include

- un-necessarily reserving discretion to the Commission's subjective opinion over three things, which risks a compounding of errors and introduces regulatory risk; and
- Selecting a price beyond the range of the available benchmarks without robust evidence.

Both aspects of the precedent would compromise dynamic efficiency. We explain below how this happens in respect of UBA pricing in particular.

The more general risk to dynamic efficiency comes from the uncertainty created by applying such a subjective and unconstrained process. In our view, there is no justification for considering a price beyond the benchmark set in this case. Doing so could only be reasonable if there was reliable quantitative evidence that New Zealand is beyond the range of the benchmark set on the basis of cost-relevant variables. Clearly some reasoning is needed, but unless the reasoning is coherent and supported by the available facts it is simply assertion and not a reliable basis for regulatory decision-making. There is no such evidence in this case; the arguments are entirely qualitative and (as explained below) omit reference to several important factors.

Using the Commission's logic, it would be equally valid to extend the range downwards, below the lowest data point in the benchmark set. That extension would imply that the range of "plausible" values for the UBA price extends from \$6.90 to \$12.93. We do not consider that plausible. We discuss the Commission's explanation of its method and explain that

- The Commission has conflated two important and distinct statistical concepts (bias and variance); and
- This conflation appears to lie behind faulty reasoning about the nature of bias and ways to manage variance.

In our view, the unbiased estimate of UBA cost is \$9.92. As we outline below, that should be the price for UBA, unless the Commission decides that (a) it can weight the benchmarks in favour of Sweden or (b) it can adjust within a range, in which case, the NZ cost is likely to fall between \$9.41 and \$10.42.

By contrast, the Commission appears to want to increase the price by around \$2 above the unbiased estimate. Obviously, this would impose immediate and direct costs on

end-users, most of whom will not transition to UFB in the next six years if ever. The resulting price increase for copper services will *reduce* broadband penetration. Using empirical evidence on cited by the Commission, we estimate that this direct cost will cut broadband penetration by 1%. Using results from a panel study of 120 countries, that reduction in penetration is expected to imply a direct cut to New Zealand's GDP of 0.22%, or around \$440m annually for every \$1 of retail price increase.

We have examined in detail the reasoning the Commission advances for pushing the UBA price upwards. That reasoning omits several relevant factors that undermine the case for increasing the UBA price, notably the following.

- The financial cushion baked into the 2011 reforms which gifted Chorus three years of above cost prices for UBA for three years post-separation. This is worth well over \$400m. Despite the present UBA price review being mandated in those same 2011 reforms, the Commission has not noted this cushion as a factor offsetting any financial stress on Chorus, though that stress itself is cited.
- The geographical de-averaging of the UCLL price was also baked into the 2011 reforms. It provides a cushion for the Commission which expresses a concern that under-estimating the total copper price might hinder efficient migration to fibre. Despite recognising de-averaging as potentially relevant, and recognising the total copper price as relevant, the Commission has not cited de-averaging as a cushion against its own error risk.
- A further cushion is available to the Commission. It could adopt the unbiased estimate of cost and then revisit the pricing in a few years time. That would materially improve the information base, avoid a very significant and certain welfare loss for end-users, and still be sufficiently timely to influence migration to fibre should that be shown to be a dynamically efficient objective.
- Copper on copper competition may be lessened by a higher UBA price. The Commission considers that "on balance" it may be strengthened depending on how Telecom reacts. A factor weighing against that view, which is not recognised by the Commission, is that active unbundlers are at serious risk from a combination of higher urban UCLL prices combined with higher UBA prices and aggressive entry by Telecom into unbundling. We think the Commission should consider this risk carefully; it is instrumental in our view that a higher UBA price has an ambiguous effect on copper-copper competition for the LTBEU.
- Competition between copper and fibre-based services for the LTBEU will clearly be lessened by a higher UBA price. We do not understand how the Commission can reach the view that there will be no effect. A higher total copper price has the effect of sheltering fibre-based services from the need to offer quality enhancements, such as faster data speeds on introductory packages.
- Competition between copper and LTE broadband services will also be lessened by a higher total copper price, for the same reason.

- There are material inconsistencies between the Commission's proposed approach and its earlier input methodologies work, particularly regarding cost allocation and the treatment of asset revaluations.

A significant part of the Commission's argument for a higher UBA price is its desire to assist fibre investors and promote migration to fibre. It views a higher UBA price as doing this, by making migration more attractive. We agree that higher copper prices, which are proposed to be materially above cost bearing in mind both UCLL and UBA components, will increase migration to fibre within the UFB footprint. The mechanism at work is to weakening the competitive constraint copper imposes on fibre which lessens, rather than promotes, competition for the LTBEU.

1 Introduction

1. We respond to economic issues raised in the Commission's latest update on the unbundled bitstream access (UBA) service price review¹ and the accompanying paper by Professor Ingo Vogelsang.² This report was prepared at the request of Internet New Zealand, TUANZ and Consumer NZ, but the views expressed are our independent views and not necessarily the views of our clients.
2. We address two important issues regarding setting the UBA price:
 1. The approach to setting a price for UBA under the initial pricing principle (IPP) when only a very small set of international benchmarks is available.
 2. The effects of the level of the UBA price on outcomes in telecommunications markets, including prices faced by broadband consumers, competition, incentives to invest and dynamic efficiency.
3. We also briefly compare the Commission's treatment of UBA price regulation with its treatment of other regulated services.

¹ *Unbundled Bistream Access Service Price Review: Update on matters relevant to the UBA price review*, Commerce Commission, 13 August 2013.

² *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 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?* Professor Ingo Vogelsang, 5 July 2013.

2 Benchmarking the UBA price

4. The Commission proposes a new methodology for benchmarking the UBA price that is a significant departure from its established previous approaches to international benchmarking on various issues over the past decade. This methodology involves the Commission using its discretion to determine:
 1. The weights to apply to the prices in the benchmarking sample, to arrive at an unbiased estimate of the cost of UBA in New Zealand;
 2. The width of the “plausible range” of prices within which the actual New Zealand UBA cost is expected to sit; and
 3. The appropriate point within the “plausible range” to select as the regulated price for the UBA service under the IPP.
5. We recognise that the Commission faces some challenges in applying the IPP for UBA given a very small number of suitable international benchmarks are available. Nevertheless, we have some significant overall concerns with the methodology, and concerns regarding the way the Commission has implemented each of the three steps above. In our view, the Commission’s methodology is not the best way to deal with the issue of having a small set of benchmarks.

2.1 Overall concerns with the new benchmarking methodology

6. We have a number of high-level concerns about the new benchmarking methodology that the Commission has proposed. In our view, adopting this methodology would be highly problematic and the Commission should instead use a simple approach based on selecting an unbiased estimate of the UBA price from within the available set of prices.

2.1.1 The new methodology creates regulatory risk

7. As noted above, the Commission’s proposed methodology requires three separate applications of discretion. The methodology thus gives the Commission great freedom when arriving at a price under the IPP.
8. The result is that a wide range of UBA prices are possible. The Commission appears to propose that the “plausible range” for the UBA price in New Zealand lies between the cost in Sweden and this value plus the difference in costs between Denmark and Sweden, ie between \$10.92 and \$12.93. If instead the Commission had determined that Denmark is the unbiased estimate and applied the same “plausible range” calculation in the opposite direction, UBA prices between \$6.90 and \$8.91 are possible.
9. Considering all the possibilities, the application of the Commission’s discretion to two benchmarks of \$8.91 and \$10.92 could lead to a UBA price anywhere between \$6.90 and \$12.93. Applied to the approximately one million customers using UBA, this translates to a possible difference in UBA costs of broadband consumers and revenue for Chorus of around \$72 million per year.

10. The scale of the resulting uncertainty is very concerning in the context of UBA. Even more concerning are the implications for future applications of IPPs for this and other services. It needs to be recognised that this new approach sets a markedly different precedent, and not only in situations with few benchmarks. Stakeholders who have the potential to be advantaged by prices outside the range of available benchmarks will advocate for its use in the future.
11. If the Commission's proposed methodology becomes established as standard benchmarking practice, it will become very difficult for access seekers, access providers, and infrastructure investors to determine the likely outcome of any future benchmarking exercise for an IPP or any other purpose. This will make it difficult to forecast returns to investments that are affected by regulated prices. It will also be difficult to predict the Commission's views on how New Zealand prices compare prices elsewhere. Therefore, in our view, the Commission's new benchmarking methodology, if adopted in this instance, would increase regulatory risk and reduce incentives to invest. The result is likely to undermine dynamic efficiency by deferring investments for which the business case is affected by regulatory decisions.
12. If instead the Commission's standard practice was to select the median of its benchmarking set, perhaps with adjustment for comparability using an econometric model if appropriate, then it would be relatively straightforward to arrive at a reasonable prediction of the outcome of such exercises. Taken in the context of potential future benchmarking exercises, an approach based on a simple, more mechanical methodology would give much greater certainty to investors and consumers.
13. The additional adjustments proposed by the Commission do not improve the robustness of the UBA price and introduce additional uncertainty through the application of discretion as described above. The Commission's approach is also contrary to the relative simplicity of the IPP process, and introduces several additional factors that would need to be consulted upon among parties. This would result in benchmarking exercises becoming even more drawn-out and contentious than at present.
14. If things go wrong in an IPP, they can be fixed by a final pricing review. While an FPP involves time and expense, its availability means there is less justification for moving from a simpler approach to the IPP. For UBA, the risk of error in applying discretionary adjustments is high, given the small dataset and central nature of the UBA price for many relevant factors.

2.1.2 Confusion between bias and variance

15. The law requires the Commission to set a cost-based price using benchmarking at the IPP stage. The Commission correctly notes that benchmarking delivers an estimate of the cost-based price, rather than the actual price. This is also true at the FPP stage: a TSLRIC model produces an estimate of the cost-based price.
16. An *unbiased estimator* is a decision rule that results in an unbiased estimate from a dataset. In turn, an unbiased estimate is the best possible estimate of cost. If an unbiased estimator is used repeatedly, it will give the correct answer on average, so any particular

estimate only deviates from the true cost by reason of random variation in the sample. If any other estimator of cost is used, it will be wrong on average, ie biased.

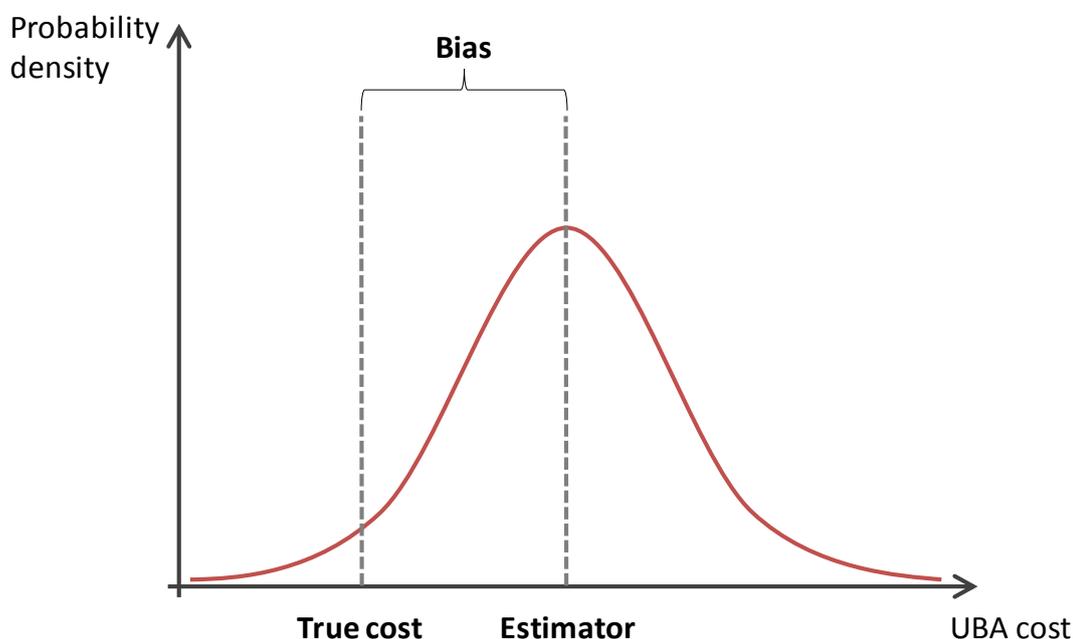
17. However, the Commission’s explanation of its methodology confuses bias and variance. For example, consider the following paragraph (¶40):

Where we have a large benchmark set, we can have more confidence that the median is an unbiased estimator of the cost that is likely to be representative of New Zealand. Where we have only a few benchmarks, the potential for error is greater.

18. This is not correct. As a matter of statistical theory and practice, an estimator (in this case the median) is a value calculated from a sample that is either biased or unbiased irrespective of the sample size. For example, it is well known that the mean of a sample is an unbiased estimator of the population mean, and the median is similarly unbiased if the distribution of values in the population is symmetric.

19. Figure 1 illustrates the concept of bias. If the distribution of an estimator of the UBA cost in New Zealand is not centred on the true cost, it is biased. No matter how large the sample, this bias will persist. In addition, the estimator has some variance associated with it, due to the fact that any estimator cannot perfectly explain the UBA cost. Variance depends on the sample size, the spread of data in the sample, and the ability of the estimator to explain the variation in UBA costs across countries.

Figure 1 Illustration of a biased estimator.



20. Whether or not the sample median is an unbiased estimator of the UBA cost in New Zealand depends not on the sample size but on whether the UBA cost in New Zealand is similar to the median across all countries (the “population median”). If New Zealand has different characteristics to the “median country”, the cost of UBA in New Zealand

will differ from the population median and hence the sample median will be a biased estimate of the cost in New Zealand.

21. This problem cannot be solved by obtaining a larger sample, even if that was possible.³ Instead it is necessary to use the relationships between costs and cost-relevant characteristics across countries to estimate a cost for New Zealand given its characteristics, for example by using an econometric model. If an econometric model cannot be estimated, for example because the sample size is very small, then it may be reasonable to apply weights to the observations in the sample, but that needs to be done very cautiously to ensure that bias is being corrected and not introduced or made worse. We return to this below (section 2.3).
22. Sample size does affect the variance (or degree of confidence) associated with any estimator (biased or unbiased) calculated from the sample. If a larger sample cannot be obtained then there is nothing that can be done about this, and the appropriate way to deal with a substantial variance is to calculate a range within which the value being estimated is likely to fall. The size of this range depends on the size of the sample and also the variance of the observations within the sample. We also return to this below.
23. The Commission's calculation of the "plausible range" appears to conflate the issues created by bias and variance, while a principled approach would treat these two problems separately.

2.2 Applying weights to the benchmarks

24. As discussed above, if New Zealand has characteristics relevant to UBA costs that differ from the "median country" then the median of the sample will be a biased estimate of the UBA cost in New Zealand. The ideal way to deal with this problem is to estimate an econometric model relating cost-relevant characteristics to cost-based prices, and then using the model to predict a cost in New Zealand given its characteristics. It may also be helpful to include local information on costs, if such information is available, although a line needs to be drawn somewhere between benchmarking and cost modelling.
25. With only two data points, such an approach is clearly impossible, however it is still useful to consider how an econometric approach would work, as it is in the same spirit as what the Commission is doing when it assigns weights to the benchmarks. The Commission has in its mind some relationships between country characteristics and costs, and it is implicitly using these relationships to weight the two available benchmarks to determine a UBA cost estimate for New Zealand. An econometric model does the same thing, but in a mechanical and more objective way.
26. The Commission argues (§47) that Sweden is closely comparable to New Zealand and Professor Vogelsang considers that assigning 100% weight to the Swedish benchmark, and thus no weight to the Danish benchmark, might be justified as an estimate of the UBA price in New Zealand. An econometric model would not do this. All observations in the sample would receive some weight in the calculation of the prediction for New

³ Unless by pure fluke it happened that expanding the sample added countries in a pattern that resulted in New Zealand's costs approaching the sample median.

Zealand. Those countries that are “far away” from New Zealand in terms of characteristics will receive lower weight, while those that are “closer” will receive more weight.⁴

27. We agree that Sweden is more similar to New Zealand than Denmark on some dimensions that are relevant to UBA costs, but for the reasons discussed above it is unlikely that the Danish benchmark provides no information at all about UBA costs in New Zealand. This is echoed by Professor Vogelsang, who states that (¶8):

Because of higher population density Denmark has lower UBA cost than Sweden. In addition, since New Zealand’s density is very close to that of Sweden the Swedish observation is probably much closer to the true expected value of UBA cost for New Zealand than the Danish observation. Consequently, a value at the 75% or even 100% mark between the benchmark costs of Denmark and Sweden appears to be justified.
28. We note that the application of discretion to determine appropriate weights to the benchmarks is difficult. The Commission needs to be quite sure of its “mental model” linking country characteristics to UBA costs, and understand how New Zealand’s characteristics differ from those of the benchmark countries and in what direction.
29. If there is doubt about these relationships then it is possible that the adjustment for bias could in fact introduce more bias. That could occur if the model that the Commission has in mind when it applies weights to the benchmarks omits relevant cost characteristics that would lead to putting more weight on Denmark than the Commission has proposed.
30. In the absence of a robust model linking country characteristics to UBA costs, in our view it is best to simply use the unadjusted median of the benchmarking set, ie to weight Denmark and Sweden equally. If the Commission is highly confident of the link between characteristics and costs, it would be more reasonable for the Commission to place 75% weight on the Swedish benchmark and 25% weight on the Danish benchmark, than to place 100% weight on the Swedish benchmark. This would make some use of the information provided by the Danish benchmark, and allow for the fact that density is surely not the only driver of UBA costs.
31. It appears that the choice of weights could also be informed by some information about the costs of UBA in New Zealand. Given that some access seekers have unbundled some exchanges, information on the costs of equipment needed to provide the UBA service, maintenance costs, and customer numbers are readily obtainable. In our view, such information could provide a cross-check on the benchmarking results, although a distinction between benchmarking and cost modelling needs to be maintained. The use of such cross-checks by the Commission in benchmarking is a well-established practice.

⁴ Think of a regression line explaining cost as a function of density. All of the data points are used to define the line, but when the NZ value is plugged into the regression equation the result will be close to the cost for countries with similar density to NZ.

32. It is also possible and reasonable to consider information from other jurisdictions as a cross-check. This approach was discussed at the conference and related submissions were made by Telecom and Vodafone. We note that Telecom's submission⁵ referred back to Analysys Mason's work, discarded the Switzerland, UK and France as not relevant and reported a median value of \$9.34 and a mean of \$9.66, both values that fall within the range of the two benchmarks adopted by the Commission. Similarly, the information in the Network Strategies submission should be useful to the Commission in testing and perhaps modifying the 'mental model' it is using in place of an econometric model.⁶ Both of these submissions indicate that a price within the benchmark range is reasonable.

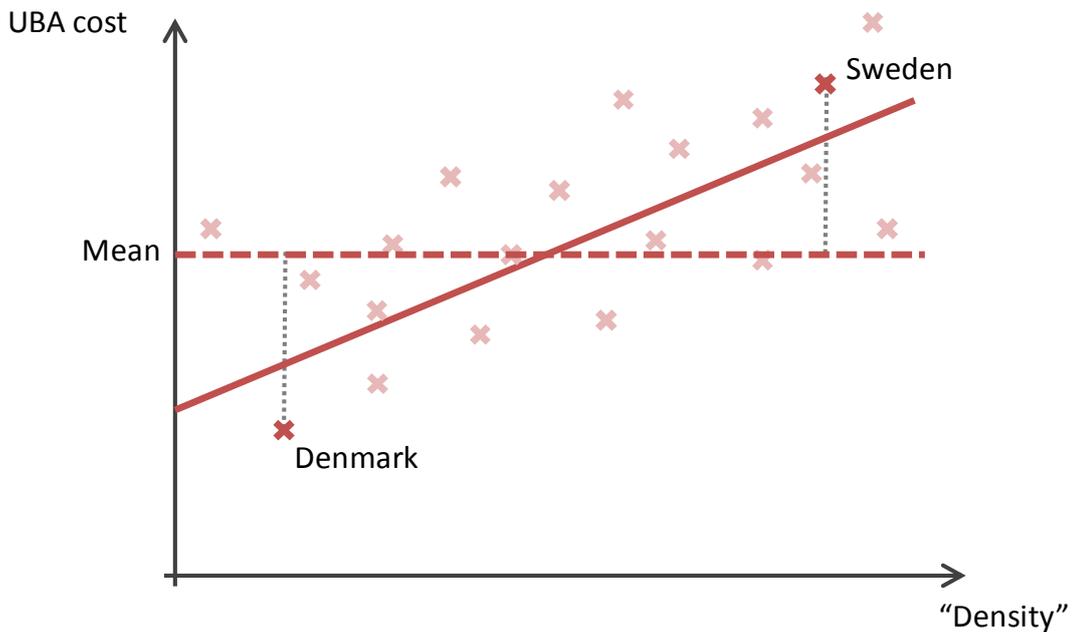
2.3 Variance associated with the unbiased estimate

33. The unbiased estimate of UBA costs in New Zealand calculated from an econometric model or by appropriate weighting of the benchmarks will probably still not exactly equal the true cost. The estimate has a probability distribution that is expected to encapsulate the true cost, but there is some variance around the estimate. The Commission proposes to estimate the range of possible values around the unbiased estimate within which the true cost is likely to fall by reference to the dollar difference between the Swedish and Danish benchmarks.
34. In general the variance of a sample depends on the variation of the observations around the mean, not their variation from each other. For a sample of size two, it is straightforward to see that the expected difference between the two observations will be greater than the expected difference between the observations and their mean, because the mean lies between the two observations. It is therefore likely that the difference between the Swedish and Danish benchmarks overstates the variance of the benchmarking sample.
35. In addition, if there is a genuine relationship between country characteristics and UBA costs (notwithstanding the concerns expressed above), then using this relationship to estimate the UBA cost for New Zealand (by weighting the benchmarks, as the Commission has done) will reduce the uncertainty associated with the estimate for New Zealand, compared to simply using the unweighted mean of the sample.
36. This is illustrated in the following diagram, which assumes there is some relationship between "density" and UBA cost across countries. The variability of the sample around the mean is necessarily more than the variability around the line of best fit that reflects the relationship between density and cost.

⁵ Letter from Anton Nannestad, 26 June 2013

⁶ Network Strategies, UBA: Reviewing benchmark data, 2 July 2013

Figure 2 Variance to the mean versus variance to a fitted regression line.



37. The above diagram also illustrates that there is no clear link between the difference between the Swedish and Danish benchmarks and variability of the observations around the line of best fit. Rather than looking at this difference, the Commission needs to think about the goodness of fit of its mental model relating country characteristics to UBA costs, ie the confidence interval associated with its estimate of the UBA cost in New Zealand.
38. As we have commented above, estimating the confidence range around the unbiased estimate requires significant use of discretion when the sample size is small. This may not be able to be done in a robust and reliable way, for example if the Commission is not highly confident about the quality of its mental model linking characteristics and costs and does not accurately understand the ability of this model to explain cross-country variation in costs.
39. In that case, for the reasons discussed above it would be better to fall back to simple principles, using the median as the benchmark and the lower and upper quartiles as the range within which the true UBA cost in New Zealand is likely to fall. This would give a cost estimate of \$9.92, with a likely range from \$9.41 to \$10.42 (should that be relevant, as outlined below). We note that this is almost identical to Professor Vogelsang's prior expectation of a UBA cost for New Zealand of around \$10 (¶23).

In summary, we consider that \$9.92 is the best unbiased estimate of the cost of UBA service in New Zealand. This is the median of the two benchmarks. The plausible range extends from \$9.41 to \$10.42 (should that be relevant as outlined below).

2.4 Price point selection

40. The Commission recognises that the UBA price affects many things and argues that some of these effects may justify choosing a price for UBA that lies within the “plausible” range for New Zealand but is different from the unbiased estimate. In general, the Commission believes there is “asymmetric risk” associated with the UBA price, such that the detriments associated with setting the UBA price below the true cost are greater than the detriments associated with setting it above the true cost. The Commission’s approach is that any such effects arise from consideration of the objectives under section 18 of the Act.
41. We discuss the benefits and detriments of setting the UBA price above or below cost in the next section, with reference to the objectives under section 18. That analysis explains our view that there is no clear evidence in favour of pushing the UBA price upwards. For now however, let’s assume that asymmetric risk does exist and consider whether it is necessary for the Commission to set a price for UBA above the unbiased estimate.
42. It is important to consider the current UBA pricing review within the context of the changes made to the Telecommunications Act in 2011 that gave rise to this review. The current review does not stand alone; it is one component of a significant package of changes to the regulatory framework that were made to support the government’s investment in UFB. The response to asymmetric risk (if it exists) should be analysed within this context. For example, to what extent are any risks and detriments of setting the UBA price too low already compensated for by the UBA price freeze?
43. It is therefore very relevant to the current review that the UBA price was frozen at the existing retail-minus level of \$21.46 on the date that Chorus and Telecom separated, for a period of three years. It is widely accepted that the retail-minus price significantly exceeds any reasonable estimate of the cost of the UBA service in New Zealand.
44. Thus for three years, Chorus is not only protected from any change in the UBA price by virtue of this price being frozen, but is also allowed to charge a price significantly in excess of the cost of the service. The latest benchmarking and Professor Vogelsang’s statements suggest that the retail minus price may exceed cost by around \$11.50 per customer per month. Over three years and across one million UBA customers, this translates to around a \$415 million revenue gain for Chorus.
45. Any risks to Chorus’s ability to fund its UFB commitment through cash generated from selling UBA that are created by setting the UBA price “too low” must be assessed against this backdrop. The Commission does not appear to have done so. This raises the question of whether it has fully thought through the logic of the UBA price setting approach it proposes. In our view, any necessary adjustment to the UBA price for asymmetric risk is significantly reduced as a result of the 2011 UBA price freeze.
46. The re-averaging of UCLL prices in the 2011 reforms is also relevant. While this did not generate a large immediate revenue gain for Chorus, it has the effect of increasing the UBA price in the areas where UFB is being built, ie largely in urban areas. Thus any concerns about the relativity between copper and fibre prices arising from asymmetric risk have to some extent also been addressed by re-averaging of UCLL.

47. Within this context, in our view a further significant adjustment to the UBA price for asymmetric risk does not appear to be justified, and the appropriate price point selection is the median of the benchmark range, ie \$9.92.

3 Effects of changing the UBA price

48. The Commission concludes that it should not use an unbiased estimator of UBA cost, but instead deliberately choose a price that exceeds its estimate of cost. We consider that the reasoning leading to this conclusion is deficient. To explain why, we start by noting that the UBA price directly and indirectly affects many things, such as:
1. Prices faced by consumers for copper-based broadband services that are provided using the UBA service;
 2. Chorus's revenues as the provider of the regulated UBA service and in turn its ability to fund its contracted build of the ultra-fast broadband (UFB) network;
 3. Costs of service providers that use UBA to provide retail broadband services;
 4. Incentives of service providers to invest in unbundling copper lines, which affects competition in copper-based broadband services;
 5. Incentives of consumers and RSPs to switch between copper-based broadband and substitute services, including UFB and new wireless broadband services (eg LTE);
 6. Incentives to invest in substitutes for copper-based broadband services, to the extent that such investment is not already committed by the contracts to build the UFB network (eg lead-ins to customer premises, and investment in LTE); and
 7. Incentives to develop and invest in new services and applications that will use the UFB network (eg high definition video on demand).
49. Some of these effects are more immediate than others. The effects on prices faced by around one million broadband consumers, on Chorus's revenues, and on the costs of service providers that buy UBA are clear, immediate and detrimental to the LTBEU. The other effects revolve around changes in marginal revenues and costs that affect incentives to invest in various infrastructure and services. Ultimately, such investment will affect competition and outcomes in broadband markets.
50. The ultimate objective of the Commission is to promote competition for the long-term benefit of end users. However in this case, there are several dimensions to competition, and higher UBA prices work in favour of some and against others. The Commission discusses some of these effects in its report under the heading "Application of section 18", as the objectives set out in section 18 are a possible justification for choosing a UBA price that differs from the unbiased estimate, within the range determined by the benchmarking exercise conducted under the IPP.
51. We understand from the Benchmarking Methodology section of Internet New Zealand's submission that s18 does not apply if there is a single unbiased estimate available from a set of benchmarks. Setting those observations to one side, based as they are in part on the legislation, we consider that the unbiased estimate is the correct single choice, and not a choice made from a range around that unbiased estimator however constituted.

That assumes no adjustment based on s18. In other words, that is the most suitable price if regard is had only to cost attributes and not to s18 factors (which all relate to efficiencies). That is because, by definition, the sampling distribution of an unbiased estimator is centered on the population parameter of interest, which in this case is New Zealand's cost. Accordingly, any departure from that point will be to somewhere with lower probability mass (i.e. to a point that is *less* likely to be correct). This makes the situation relatively simple and for the reasons explained in section 2.4 in our view the Commission should set the price at \$9.92.

52. Alternatively there may be several unbiased prices that are equally likely. For example, the Commission might consider that the distribution is bimodal with two peaks at the same height *and* that both of those two equal-height peaks are also unbiased estimators. We are not sure how both of those conditions could be met, but perhaps there is a way. Another option could be that the probability distribution is flat in some range (eg between the 50th and 75th percentile of the two benchmarks) *and* that range is unbiased on average (i.e. it is centered on the true value). As we understand it, this is the kind of situation where s18 comes into play.
53. It would be helpful for the Commission to clarify its view of the distribution and the reasons for that view. We can well imagine that there might be *some* weight in the probability distribution above the Swedish benchmark, but we cannot imagine reasons to believe the distribution is flat beyond that point, or that there is an equally high second mode beyond that point. Thus, even if s18 can be invoked, we cannot see how it could reasonably lead to a price above the Swedish price.
54. Nevertheless, whatever the possible range of prices to which s18 might apply, we need to consider how it should be applied. In this instance, one needs to rely primarily on the touchstone of "promoting competition for the LTBEU" to assess the available options. This is ultimately a question of welfare economics, though we also need to think through the competitive landscape in which welfare is determined.
55. We agree with Professor Vogelsang (§20) that the effects of changing the UBA price involve welfare trade-offs. The question is whether these trade-offs have been (or can be) evaluated in such a way that the Commission can be sufficiently confident about recommending a departure from the estimated cost of the UBA service. We recognise that there is a limit to the intensity of analysis appropriate at this IPP stage, however this does not change the fact that one needs a very good reason to push the UBA price away from the unbiased estimate, if such an adjustment is lawful.
56. The existence of trade-offs, as recognised by Professor Vogelsang (and discussed further below), signals clearly that there are some arguments against pushing the UBA price above costs. It is therefore necessary to carefully consider the *strength* of these arguments. If one cannot clearly explain how a price above cost serves the LTBEU on balance, then a cost-based price is required.

3.1 The starting point has inbuilt cushions

57. Before considering the s18 analysis in detail, the starting point needs to be considered. Within the Commission's rationale for seeking to inflate the UBA price are the views

that Chorus and LFC investors need more cash. For example the Commission states: “Chorus and the other LFCs have submitted that the lower copper price has significantly increased their demand risk and their ability to meet their contractual rollout plans” (¶118, see also 121).

58. In this regard, at least for Chorus, the starting point is one in which the UBA service has been deliberately priced well above cost for many years and has been frozen at that level for the past three years, as discussed in section 2.4.
59. For illustration, let us ignore all of the history prior to the 2011 amendment, assume that the Commission’s draft determination in December 2012 was a reasonable estimate of UBA cost and take at face value Chorus’ statement to NZX that it would reduce its revenue by \$150-\$160m per annum. That implies that the 2011 reform, by delaying cost-based pricing of UBA, gifted Chorus over \$450m. Our calculations in section 2.4 suggest a slightly smaller amount of \$415m, but in any case that is a substantial cushion against any potential error associated with using an unbiased estimate of the UBA cost.
60. Another factor in the Commission’s s18 analysis is the assumption that there will be big consumer benefits from faster migration to fibre (¶123 – 133). Perhaps so, but the most optimistic penetration forecasts suggest that around 30% of consumers might be on fibre by 2020. More than two in every three consumers will not be using this service at all in 2020, yet they are being asked to pay higher prices so that a minority will get fibre benefits a few years earlier than they otherwise would.
61. More importantly, as the Commission notes, the impact of price on migration depends on the *total* copper price (¶133) and the issue, for dynamic efficiency, is how accurately that *total* copper price reflects actual copper costs, within the UFB footprint. So the re-averaging of UCLL prices is very relevant, because it means that urban prices (the ones competing with UFB) will be materially above cost in those areas. This is a cushion for the Commission because it is insurance against under-estimating the UBA price and thereby distorting efficient competition between copper and fibre in the areas where UFB is being built.
62. This point has been previously recognised by the Commission which wrote the following in its submission on the 2011 reforms.⁷

If the copper network is to act as a competitive constraint on UFB service providers, then UCLL services should not be geographically de-averaged. Geographical averaging removes UCLL and the main driver of competition from the copper network. This is even more important because Chorus will be providing both fibre and copper services; the only constraint will come from copper unbundlers, given that Chorus will not compete with itself.
63. It would be appropriate for the Commission to consider these two inbuilt cushions, both of which work against its current arguments for increasing the UBA price.

⁷ Commerce Commission submission to Finance and Expenditure Select Committee, 11 March 2011, paragraph 79.

3.2 Effects of the UBA price are complex and uncertain

64. The long list at the start of this section highlights the fact that changing the UBA price has very complex effects on outcomes in broadband markets. The immediate effects on consumers and Chorus's revenues are clear, but the effects on incentives to invest in unbundling, incentives to invest further in UFB, incentives of consumers to migrate to fibre, and so on, are indirect and the magnitude of these effects is difficult to estimate.
65. This complexity and uncertainty alone points to a high risk of unintended consequences from setting the UBA price at any level other than the unbiased estimate of cost. In the absence of a clear understanding of how these effects will play out, it would be prudent for the Commission to simply set the UBA price at the unbiased estimate of cost (\$9.92).
66. It is universally recognised that cost-based pricing is the best guide to achieving efficiencies including dynamic efficiencies. The default position is that cost-based pricing only should be used. The grounds to depart from that standard default approach would have to be compelling. They are not in this case.
67. The following sections reinforce this point by illustrating the complexity of analysis of the effects of changing the UBA price.

3.2.1 Competition on the copper network

68. A high UBA price will tend to magnify the incentives to invest in unbundling on the copper network by service providers that have not yet unbundled (mainly Telecom), which will tend to promote copper-on-copper competition.
69. At the same time, a higher UBA price will increase costs for service providers that have unbundled some but not all exchanges and cabinets on the copper network. Such service providers use UBA as a complementary service to their own unbundled infrastructure, in order to provide a nationwide service.⁸ For example, we understand that unbundlers currently use UBA for around 50% of their footprint where they have unbundled (and for all customers where they haven't unbundled). A higher UBA price increases costs of such providers and weakens their competitive position.
70. The Commission appears to believe (¶106) that the net effect of a higher UBA price on competition in copper broadband services is positive, or at least not negative. In our view, the overall effect is ambiguous, given the opposing effects on the incentives of Telecom to unbundle versus increasing the costs of those who have already unbundled.
71. If the net effect on copper-copper competition is ambiguous, we should look to consumer price impacts to gauge whether setting a high UBA price is consistent with the objective. It is not clear that a higher UBA price will reduce broadband prices for copper customers, given that it directly affects the prices paid by a large number of such

⁸ In this sense, the UBA service is similar to the national roaming service on mobile networks.

customers.⁹ For current unbundlers, the UBA price affects the costs to serve most of their current and potential customers.

72. Even if a higher UBA price increases competition between copper broadband service providers by causing Telecom to unbundle, it is not clear whether that will be pro-competitive in the long term. Telecom is perhaps the only service provider with the scale to undertake nationwide unbundling. Encouraging Telecom to unbundle by increasing the UBA price would put all other copper-based service providers at a competitive disadvantage, through two channels.
- a. Directly, a higher UBA price will add costs to copper unbundlers.
 - b. There is also an indirect channel, via the potential scale of Telecom’s unbundling activity. Telecom is likely to have enough potential customers to unbundle cabinets and there is a real chance that an aggressive move in this direction could include lower retail prices.
73. Thus there could be risk to the business of unbundlers from the combined effect of higher costs, lower retail prices and loss of market share. If these firms were to fold, competition would be substantially lessened. We note that the Commission views these firms as valuable competitors as discussed in its clearance decision on Vodafone’s acquisition of Telstra Clear where it said, for example:¹⁰

There is evidence to suggest that Orcon and Slingshot are currently price leaders in the fixed voice and broadband market

74. These firms are valuable contributors to “competition for the LTBEU” and the impact of the UBA price on them deserves to be considered by the Commission, for example at ¶106.4.

3.2.2 Competition between copper and other networks

75. A higher UBA price will also weaken the competitive constraint copper exerts on fibre (as the Commission notes at ¶111.1). While it has been argued that fibre prices are now set by contract, what has been set is a price cap; there is no floor. To attract business across from copper, fibre services need to offer better value in some way.
76. Price is not the only dimension of competition however, and there are obvious ways to enhance the value proposition for fibre without price reductions. For example, it would be straightforward to increase the quality of the basic service to, say, 100/50Mbps

⁹ The fact that the UBA price is reducing as a consequence of moving from retail-minus to cost-based is irrelevant. In this analysis, the choice is between a benchmarked price and a deliberate upward adjustment of that benchmarked price.

¹⁰ NZ Commerce Commission Decision 33/12, paragraph 157.

without changing the contract price. Empirical work cited by the Commission¹¹ confirms that speed is a significant determinant of demand for FTTx service (and DSL service).

77. We note that the Commission also cites its own survey-based analysis of willingness to pay. The report of that study carries an appropriate caveat. *"...customers find it difficult to imagine totally new forms of service when they are surveyed; most can only imagine 'incrementally new' services (for example, video on demand). Accordingly, the results of these surveys may be quite different to the level of customer interest that may actually transpire once high speed broadband services have developed."*
78. The Commission concludes that *"...the UBA price will impact on demand for fibre services although the extent of the impact is uncertain."* While strictly true, there are additional relevant points that can be made with confidence. For example, we know the following.
- a. We know for certain that there is a willingness to pay for speed. Shinohara et al (2011) (see fn 11)- in the paper referred to and relied upon by the Commission and Professor Voselgang in relation to price elasticity - estimate that doubling the speed of fibre will increase uptake by around 40%.
 - b. We know for certain that fibre services can provide much greater speeds than copper, and that doubling the speeds on the contracted entry level products is entirely feasible while still leaving higher-end products for subsequent product upgrades.
 - c. It follows that the impact of a lower UBA price on copper-to-fibre migration effect can be substantially, perhaps fully offset by quality improvements on fibre.
 - d. This highlights the point that the Commission's approach is largely confined to the effect of a UBA price change. A price increase has acknowledged major detriments (and more as well) even if there are benefits too (whether there are benefits is doubtful, as is the scale of those benefits). Yet the perceived problem might be solved in a different way without those major detriments of a price increase. As noted above, the Shinohara paper shows that doubling the speed will increase uptake by 40%. This, and other non-price developments, may solve the perceived problem without the need to increase price. At the very least, there should have been a cost benefit analysis to show that developments and changes outside price will not be enough to avoid increasing the price above cost. This has not happened. Chorus can look to other solutions to its perceived problems other than regulatory departure from cost-based pricing.
79. Moreover, even in what the Commission seems to consider the worst case, it is not clear there is any dynamic efficiency problem. Suppose that copper prices *do* materially

¹¹ Shinohara, S., Akebatsu, Y., and M. Tsuji, Analysis of broadband services diffusion in OECD 30 countries: Focusing on open access obligations, paper given at 8th ITS Asia-Pacific Regional Conference, Taiwan, June 26-28, 2011. Available at <http://hdl.handle.net/10419/52312>

impact on migration to fibre, and that increasing the quality (i.e. speed) of fibre services *cannot* counteract this effect. How does that compromise dynamic efficiency? Or, more pointedly, why would that be a reason to push the UBA price up above the unbiased estimate of cost?

80. Dynamic efficiency refers to the timing of changes, and trying to optimise that timing. The beauty of cost-based prices is that they clearly signal opportunity costs and allow market participants to make their own decisions as to timing. Unless a regulator has a very clear rationale for doing something different, it should stick with cost-based pricing. That reasoning is all the more relevant here, because the objective is to promote competition for the LTBEU, and pushing up the UBA price will actually weaken competition between copper and fibre.
81. Before leaving this section we also need to comment on LTE, which is the subject of significant investment currently by mobile networks. We understand that LTE is used within the Swedish TSLRIC model that the Commission has benchmarked against, because LTE is part of the MEA network in Sweden. Technical experts inform us that the distribution of bandwidth is heavily skewed, with around 4% of users being responsible for around 75% of bandwidth demand. This is why LTE has a role in a modern broadband network: provided the extremely heavy users are steered towards fixed-line services, LTE is capable of replicating and even exceeding DSL grades of service, notwithstanding the issue of contention ratios.
82. Thus, it is likely that LTE will be competing in the same market against copper- and fibre-based services. In this market, the Commission is obligated to promote competition for the LTBEU. Just as pushing up the UBA price weakens competition between copper and fibre (by reducing the need for fibre to offer better value to consumers), it also weakens competition between copper and LTE. We think the Commission should consider the role of LTE, for example around ¶108 – 111. For example, the investment in LTE seems contrary to the Commission's view that no new networks will emerge (¶110).
83. There is also a second relevant issue concerning LTE. Whereas the Commission seems to hope that users will migrate to fibre sooner if it sets a high UBA price, some will surely find LTE a more attractive option. For service providers, having sunk capital into LTE capacity, there will be a strong incentive to drive traffic onto LTE infrastructure, and higher UBA prices will further increase this incentive. Thus, while increasing UBA prices may drive some extra business to fibre, LTE will claim a significant share of those switching from copper.
84. As the UBA price increases, even Vodafone, with its extensive unbundled exchanges, has increasing incentives to migrate customers from copper to LTE: well over half of their addressable customer base is only accessible over UBA (given they have not unbundled everywhere, and, in the footprint of an unbundled exchange, half of the addressable customers are on cabinets. One option is for Vodafone to supply via LTE, where it can, to locations that are not unbundled, and by LTE to points where it would otherwise use UBA. In this way, it can also optimally manage contention at the base stations, thereby creating incentives to retain customers on copper and LTE, instead of

migrating them to UBA. 2degrees and Telecom would also have stronger incentives to supply broadband over LTE as the UBA price increases.

85. Note also, that these LTE effects will pile further pressure on those firms unbundling firms that the Commission recognises as being highly valued competitors for the LTBEU (as discussed at ¶¶72 to 74 inclusive above). This reinforces the need for the Commission to assess the risk to the unbundling sector if it is minded to continue with an approach that will increase the UBA price. There will be a UBA price point where the unbundlers cannot compete, particularly those without mobile networks as well, as the latter have the option to transfer customers to LTE, avoiding high UBA charges over lines that can only be accessed via UBA. At that price point, those unbundlers exit the market, and competition is thereby reduced: competition by providers described by the Commission as price leaders. The Commission does not know what that price point is as the analysis has not been done. It certainly does not know the impact in this context of LTE, as it refers to LTE only once in an oblique and rather dismissive footnote (52). This risk to unbundlers is an example of one of the major risks the Commission would take if it proceeds to exercise such wide discretion, based more on impression than evidence, in lifting price above cost.

In summary, competition between copper- fibre- and LTE-based broadband services will be lessened by the UBA price. The higher is the UBA price, the less incentive fibre and LTE service providers will have to offer consumers better value, and the weaker will be competition between them.

3.2.3 Sharemarket effects are poor signals

86. At paragraph 122, the Commission expresses the view that *“the large share price impact of the draft determination is evidence of the perception of risk to Chorus’ migration targets.”* We disagree. Investors care about Chorus’ earnings, not migration to fibre as such. Indeed, it is notable that there appears to be no migration incentive in Chorus’s UFB contract. More fundamentally, what the draft decision did was to crystallise and therefore resolve some risk by resetting investors’ expectations of the UBA price.
87. The fact that the market was surprised is of no real consequence in itself. Markets are often surprised by events, as the global financial crisis so clearly showed. There is now a growing literature examining how markets make such mistakes. It points to a range of cognitive biases, herding effects and incentive structures.¹²

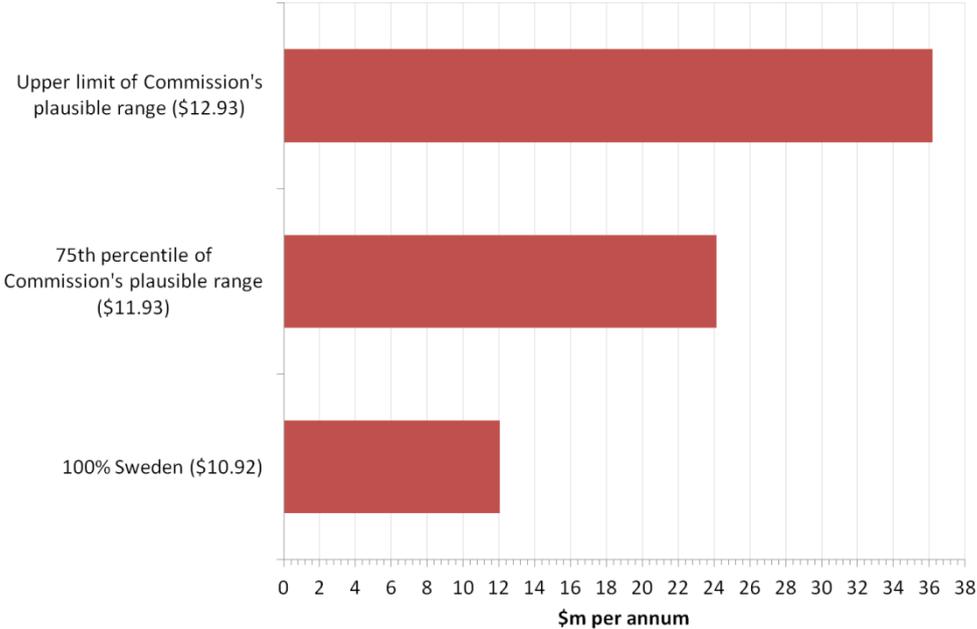
3.3 Consumers will be harmed

88. While the UBA price affects competition and investment on many different margins, one thing that is very clear is that higher UBA prices harm a large number of current broadband consumers directly.

¹² See for example, Miller, G.P. and G. Rosenfeld, 2009, “Intellectual Hazard: How Conceptual Biases in Complex Organizations Contributed to the Crisis of 2008”, NYU Law and Economics Research Paper No. 09-43. Also, Rizzi, J.V., 2009, “Behavioural Basis of the Financial Crisis”, Journal of Applied Finance, 18(2) pp. 84-96.

89. We can gain insight into the size of these effects by calculating the total transfer from access seekers to Chorus that arises from different price determinations relative to the unbiased estimate of costs (\$9.92), under the assumption that approximately one million customers are supplied using the UBA service. The following chart shows that deviations from the unbiased estimate will transfer between \$12m and \$36m per annum from access seekers to Chorus, depending on how far in excess of the unbiased estimate the Commission goes.

Figure 3: Annual Transfer from Access Seekers to Chorus



90. Translating these effects through to consumer welfare is more difficult because it depends on the intensity of competition between access seekers and the rate that UBA costs are passed through to retail broadband prices. However it is clear that significant amounts of value are at stake, over at least the next five to ten years.

91. Considering that total broadband penetration in New Zealand is still relatively modest, there are likely to be significant gains from encouraging more consumers to use entry-level products. This is also true at a national level. For example, if we consider a single consumer, it is extremely likely that the step from zero broadband to an entry broadband package is more valuable than the step from DSL to fibre. This view is consistent with the pervasive concept of diminishing marginal returns.

92. Some empirical work has been done on demand for broadband and the impact of penetration on GDP. These can be used to get a feel for the magnitudes that might be involved here. If we assume that

- a. The potential uplift in the UBA price increases retail copper prices from \$60 to \$61;¹³

¹³ We assume that the uplift is around \$2 but only half of this is passed through into retail prices.

- b. The price elasticity of demand for copper broadband is -0.95 ¹⁴ and;
 - c. Each 10% of extra penetration lifts GDP by 1.2%¹⁵
93. Then we have a fall in penetration of 1%, which implies a cut in GDP of 0.22%. In the context of the New Zealand economy that amounts to \$440m per annum. At current prices, this is the GDP cost of each extra \$1 of retail price increase.

3.4 Dynamic efficiency and migration to fibre

94. The Commission considers (¶113) that the ultimate success of UFB will depend on the rate of take-up. If the network is built and few people use it, it will turn out to be an unnecessary resource cost. We have two concerns with this. First the success of UFB is not binary: the real question is over the time required for the transition to fibre. It was always acknowledged that this network would be built ahead of demand, and there is an open question as to how fast users “should” migrate.
95. Additionally however, we suggest that mere take-up is not enough for success in terms of benefits to end-users. The UFB network will only generate a net welfare gain if it is used for *new* valuable services and applications that are not possible over the existing network. If users simply switch their existing usage from copper to fibre, nothing is gained to offset the resource costs of building the new network.
96. This is underlined by the Commission’s view (¶131) that consumers are only willing to pay a small price premium for fibre services compared to copper. Those preferences reflects the small difference in value that consumers receive from fibre versus copper services, in the absence of new applications that make use of the higher speeds possible over fibre.

3.4.1 Making copper worse does not make fibre better

97. Given the above observations, it seems very odd to argue that the long-term benefits of end-users will be served by making the current copper broadband service worse for consumers by increasing its price.
98. Instead, the emphasis should be on making fibre relatively better. The Commission might argue that is beyond the scope of the UBA pricing review, but we would disagree. The UBA price affects the price of broadband services that are available to the majority of customers today. This price affects the incentives of consumers to take up broadband, and to use it for various applications.
99. As Professor Vogelsang notes (¶46), telecommunications services such as broadband are an experience good. We have previously characterised this as a “ladder of consumption” – consumers start with a basic service, and demand for more advanced

¹⁴ Shinohara et al (2011) as cited by the Commission.

¹⁵ See Qiang, C. C. Rossotto and K. Kimura (2009) Economic Impacts of Broadband, page 45 reporting results from a panel data study of 120 countries, in World Bank, 2009 Information and Communications for Development.

services grows over time as consumers get comfortable with the technology and learn how they can benefit from it.

100. A higher UBA price discourages consumers from climbing the ladder of broadband consumption. This will reduce the rate at which consumers choose to switch from copper to fibre, everything else equal. In turn, a higher UBA price will reduce incentives to develop new services and applications that use the capabilities of the UFB network, because developers of these services and applications will have lower expectations about the number of users that will be sufficiently high on the ladder of consumption to want to try them.
101. As discussed above (section 3.2.2), similar conclusions apply when one considers the supply-side incentives created by higher UBA prices: these undermine the incentive for fibre networks to differentiate themselves in ways consumers will value, which tends to weaken competition.

3.4.2 Transition to new technology in competitive markets

102. In considering dynamic efficiency issues it is also useful to consider how the transition to new technologies works in competitive markets. This is useful because the regulatory regime is deliberately designed to try to mimic competitive outcomes. Such mimicry is often used as the justification for TSLRIC access prices and the use of the “modern equivalent asset” in cost modelling.
103. In a competitive market, when a new technology emerges to challenge an existing one, it competes on the basis of higher quality and better features. Even if the new technology is more expensive than the older one, it can compete on the basis of the greater value it provides to consumers. There are many examples of such transitions, such as the transition in music reproduction technology from records to cassette tapes to CDs to digital downloads.
104. Importantly, the emergence of the new technology does not allow sellers of the old technology to raise their prices. When smartphones emerged, makers of standard mobile phones were not able to increase the prices for their handsets on the basis that smartphones were the “modern equivalent” of their product. Instead, competition forces sellers of the old technology to lower their prices to compete with the new one, and/or to innovate and make technological improvements themselves.
105. The emergence of a new technology in a competitive market therefore never makes consumers worse off, not even temporarily. In contrast, the Commission is proposing to do exactly that – to make consumers of existing broadband technology worse off in order to support a new technology that does not yet appear to offer significant benefits to most consumers relative to the old one. That is not how competitive markets work.
106. The theoretical justification for the use of the modern equivalent asset in TSLRIC cost modelling fits with how competitive markets work when technological progress generates cost-reducing innovations that provide the same services. In such cases, competition in a competitive market would constrain the prices of suppliers using the old technology to the lower costs associated with the new technology.

107. UFB is different: it is a higher cost service than copper, but with greater capabilities. A dynamically efficient competitive market would generate lower (or at least unchanged) copper prices following the introduction of the new technology.

3.4.3 Evaluating benefits and costs of faster migration to fibre

108. The Commission discusses the LTBEU arising from a faster migration to fibre as a consequence of higher UBA prices (§140, 141). On the negative side of this trade-off the Commission recognises that higher copper broadband prices will be paid, by all consumers initially, but gradually and partially eroding in number as users switch to fibre. This cost is widespread, substantial and immediate.
109. We note that if the Commission pushes the UBA price upwards, rural users in particular will be paying higher prices for the foreseeable future without any prospect of migrating to fibre. Fully a quarter of all consumers are outside the UFB footprint.
110. The Commission then argues that this cost needs to be *“weighed against the benefits of accelerated migration in bringing forward services dependant on UFB take-up”*. No view is expressed on which of these effects is larger, perhaps because it is so clear that the cited benefit is modest, confined to at most 30% of users (the ultimate penetration of UFB services by 2020)¹⁶, and deferred.
111. The timing difference is very important: even if these effects were of similar size (which they surely are not) the immediate timing of the costs means they would materially outweigh the benefits. Added to that, and probably the largest effect is the fact that at least 70% of end-users will pay the higher copper price and either never receive any benefit or only receive benefits in the distant future (after 2020).
112. Finally, the nature of any benefit is questionable and modest. It is doubtful because the well known “chicken and egg” problem associated with such things makes it difficult to know whether uptake drives development, or vice-versa. It is modest because consumers will only benefit from the surplus they gain from these (unidentified) services, which depends on the sophistication of pricing used by suppliers.

In conclusion, it seems clear that this migration effect counts as a net cost to end-users, all the more so the further above the unbiased estimate the Commission goes.

¹⁶ See Commission at §140 which cites a forecast for “take-up to be at most 40% by 2020” and this applies to the 75% of population inside the UFB footprint. This implies 30% of the total market of 40% penetration.

4 Comparison to other regulation

113. The Commission regulates other monopoly services under Part IV of the Commerce Act, following so-called “input methodologies” (IMs). Considerable work went into developing the IMs from first principles, with the aim of enhancing certainty for regulated entities and their customers. It is therefore interesting to note that certain aspects of the proposed approach to UBA pricing seem inconsistent with this other major area of the Commission’s work.
114. Two aspects are of particular relevance: the treatment of cost allocation, and of asset revaluations.
115. In respect of cost allocation, electricity lines companies were interested during the IM development to understand how the Commission would treat the sharing of assets (eg poles) they might use to provide UFB. The lines companies wanted to charge the innovative new service (UFB) at incremental cost, leaving all other costs in the pool to be recovered from electricity consumers. The Commission declined, requiring that shared assets be treated as such in a manner analogous to the way a TSLRIC model works. This would mean that the cost (and hence price) of the old service would fall once it started sharing assets with the new service.
116. It seems that a different approach applies to asset sharing between copper and UFB networks. If fibre is the MEA of the existing copper network, then both copper and fibre networks are interpreted as having the whole cost of a stand-alone fibre network. This is relevant for the IPP because the Commission argues that New Zealand’s UBA costs are similar to those estimated for Sweden, which uses a cost model based on fibre as the MEA.
117. Therefore, under the Commission’s approach, consumers see no benefit from the sharing of assets (eg ducts, fibre). This conflicts with the requirement imposed on electricity lines companies to share common costs across services.
118. On the contrary, considerable effort is being devoted to driving the price of copper services up above the unbiased estimate of cost, for reasons of risks associated with the UFB network (eg uptake risk). These are costs that are incremental to the UFB service and are not costs of providing the UBA service. Consistency of treatment with regulation of electricity lines companies would also require that truly incremental costs be recovered only from the service that causes these costs. This is occurring in two reinforcing ways: the MEA is defined as a stand-alone network instead of one with cost sharing; and reasons are being sought to inflate the price above the unbiased estimate of cost.
119. Furthermore, when the price of key services increases, so does the value of the copper network. Under the IM process, revaluation gains count as income in the year they are booked. This means that service prices need to fall to prevent the firm earning excess returns. Again, there is no such mechanism within this telecommunications regime.

120. We realise of course that these issues are deeply embedded within the Telecommunications Act. However to the extent that the Commission values consistency as a regulatory principle, it may wish to reflect on these issues. For consumers, it will be difficult to understand why costs should not be shared and why revaluation gains should not be treated as income.