



TELSTRA CORPORATION LIMITED

**Telstra's Ordinary Access Undertaking for the Unconditioned
Local Loop Service:**

Response to Ovum Advisory Notes

CATEGORY 1 CONFIDENTIAL MATERIAL

PUBLIC VERSION

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A Executive Summary

B Economic Issues

1. Ovum supports many aspects of the TEA model. Several remaining issues need to be clarified where Ovum disagrees or misunderstands the economic assumptions of or inputs into the TEA model.

2. First, Ovum makes contradictory statements in relation to vendor prices. Ovum first states:¹

Ovum agrees that the use of averages [for pricing of equipment] is common in regulatory models and appropriate for costing over all of Band 2 ESAs.

3. However, Ovum also states:²

The [prices of equipment] are averages, and seem not to be Band 2 specific, which is inappropriate.

4. Telstra agrees that it is common practice to use average equipment prices in cost models. Such an approach is followed in many cost models used by the ACCC:

- The ACCC's Fixed Network Services model
- The NERA model used by the ACCC to set ULLS prices
- The version of the PIE II model used by the ACCC to set ULLS prices
- The Gibson Quai model used by the ACCC to cost transmission assets

5. Averaging input prices is a pragmatic approach common to cost models developed by the ACCC.

6. Second, Ovum mistakenly claims that the fibre costs in the TEA model's Investment Summary worksheet should be removed. The main network costs (made up of a mix of copper and fibre) need to be shared between SIOs in copper-fed DAs and SIOs in fibre fed DAs. Telstra has shared these costs by dividing the total main network costs by the total number of customers, which is a reasonable approach. The implication is that some fibre main network costs are allocated to copper-fed SIOs and some copper main network costs are allocated to fibre-fed SIOs.

7. Third, Ovum states:³

Ovum's view remains the same. Telstra has not submitted sufficient evidence to include intangible or retail costs within the cost calculation.

8. Telstra has excluded intangible and retail costs from the indirect factor calculations.⁴ In relation to intangibles, it appears that Ovum was not provided with the updated factor

¹ Ovum (2009), *Telstra Efficient Access Cost Model – Economic Issues*, 5 February 2009, section 2.1

² Ovum (2009), *Telstra Efficient Access Cost Model – Economic Issues*, 5 February 2009, section 2.1

³ Ovum (2009), *Telstra Efficient Access Cost Model – Economic Issues*, 5 February 2009, section 2.1

⁴ Telstra (2008), *Response to the ACCC's Draft Decision*, 23 December 2008, paragraph 343(e) and Telstra (2008), *Response to Ovum's Submissions*, 5 December 2008, section C.3.2

calculation sheet provided to the ACCC that excludes intangible costs.⁵ In relation to retail costs, it appears that Ovum has misunderstood Telstra's position. Telstra includes the cost of marketing, sales, billing etc costs associated with providing ULLS to access seekers in the O&M factor calculation, not the costs of those same functions to retail customers. Telstra excludes all retail costs from the O&M factors.

9. Fourth, Ovum views that the tilted annuity is appropriate, but under assumptions that result in the tilted annuity resulting in a higher price than using a flat annuity. In particular, Ovum assumes that the tilted annuity would have a negative price trend. Ovum states "*the evidence indicates that the price trend is falling*" and "*we conclude that the forward-looking trend of equipment prices seems to be falling*"⁶, which is contrary to the ACCC's price trends used to set current ULLS prices⁷ and the assumption in the ACCC's Draft Decision⁸, both of which assume the price trend is increasing. Assuming a falling price trend would result in higher ULLS charges than the TEA model. Ovum states: "*with falling prices as explained earlier, Telstra would be undercompensated with [a flat] annuity calculation*".⁹

10. Ovum also states:¹⁰

Telstra argues regarding this method: "In any event, application of a tilted annuity in Telstra's Undertaking would severely undermine the likelihood of capital recovery and dramatically increase risk." This is certainly not the case, and in our calculations the cost of the ULLS increases as expected; therefore Telstra has a higher return from its investments. With the tilted annuity, the TEA model produced a monthly rate of \$49.44 per line, instead of the default figure of \$47.86.

11. The ACCC's previous methodology assumes a positive price trend and that there is no levelisation of monthly charges over the lives of assets. Under these assumptions, the monthly cost derived from the TEA model would increase from \$33.64 in the first year to \$186.30 at the end of the life of the longest lived asset in the TEA model (40 years) – a greater than five-fold increase.¹¹ Prices increase so dramatically because the tilted annuity, as applied by the ACCC in the past and in their recent evaluation of the current Undertaking, pushes cost recovery out into the future. If cost recovery is pushed back so far into the future, particularly when demand for fixed line services is decreasing, this would severely undermine the likelihood of capital recovery and dramatically increase risk.¹²
12. Further, the calculations that Ovum undertakes to support their disagreement with Telstra's statement in the quote above, are premised on a tilt of zero¹³, which, Telstra agrees, would result in a similar cost to the TEA model. However, assuming a tilt of zero means that a tilted annuity is not being applied, rather it is a flat annuity similar to what is adopted in the TEA model. Consequently, Ovum's position is consistent with Telstra's.
13. In any case, Ovum concludes "*in the event where prices are increasing, the tilt can prevent overcompensation*" [emphasis added]. In making their qualified conclusion, Ovum does not refer to the dramatic prices rises that would be required for ULLS if a tilted annuity

⁵ Telstra letter to ACCC, dated 18 February 2009

⁶ Ovum (2009), *Telstra Efficient Access Cost Model – Economic Issues*, 5 February 2009, section 3.2

⁷ ACCC (2007), *ULLS Access Dispute Between Telstra and Primus (Monthly Charges): Statement of Reasons for Final Determination*, December 2007, paragraph 419

⁸ ACCC (2008), *Assessment of Telstra's ULLS Band 2 Monthly Charge Undertaking: Draft Decision*, November 2008, page 41; In its letter to Telstra dated 18 December 2008, the ACCC confirmed that it assumed a positive price trend in its calculation of the tilted annuity

⁹ Ovum (2009), *Telstra Efficient Access Cost Model – Economic Issues*, 5 February 2009, section 3.2

¹⁰ Ovum (2009), *Telstra Efficient Access Cost Model – Economic Issues*, 5 February 2009, section 3.2

¹¹ Telstra (2009), *Materiality Testing*, 23 March 2009, paragraphs 42-43

¹² Ergas, H. (2009), *Depreciation*, August 2008

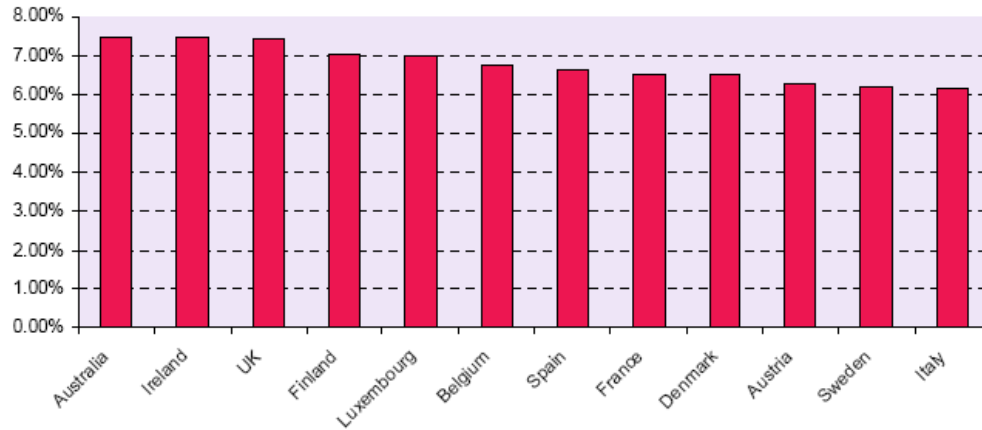
¹³ Ovum (2009), *Telstra Efficient Access Cost Model – Economic Issues*, 5 February 2009, footnote 19.

with a positive price trend were applied. Nor do they refer to the declining demand for fixed line services that would mean it would be impossible to increase prices more than five-fold over time. When reviewing Ovum’s conclusion on the tilted annuity, due consideration needs to be given to the qualifications attached to that conclusion.

C Telstra’s WACC

14. Ovum also prepare a European benchmarking study showing that when Telstra’s pre-tax WACC (16.46%) is adjusted for European market conditions, Telstra’s adjusted pre-tax WACC is 7.45%. Ovum concludes “*Telstra’s adjusted WACC value is still the highest among the other operators in European countries but the WACC value this time is reasonably close to the international benchmarks*”.¹⁴ In fact, it appears from Ovum’s analysis, the result of which are copied in Figure 1 below, that Telstra’s adjusted WACC equals the WACC in Ireland and the UK and is less than 1 percentage point higher than 8 of the 11 European countries Ovum benchmarked. This analysis demonstrates that Telstra’s WACC is reasonable.

Figure 1: Ovum’s European WACC Comparison

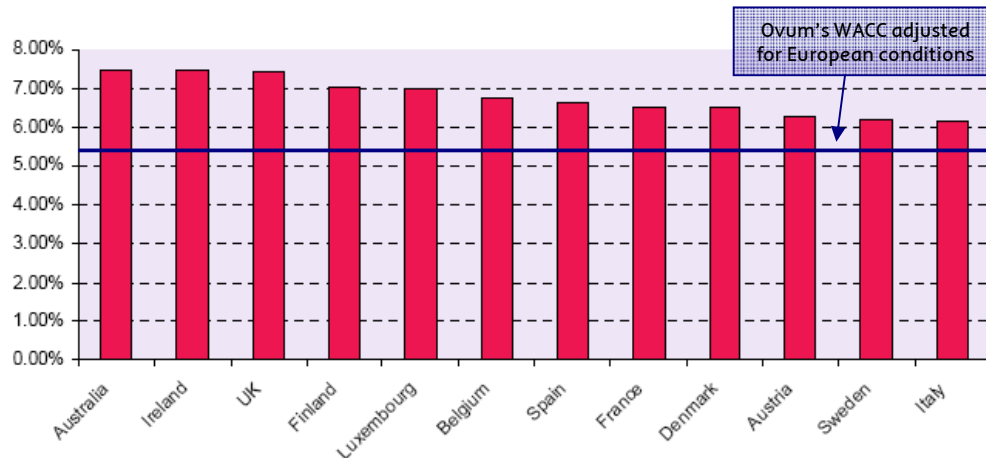


Source: Ovum (2009), International WACC benchmark An Advisory Note to the ACCC, 28 January 2009, Figure 2.7

15. However, Ovum does not compare its own estimate of WACC for Australia against the European benchmarks. Telstra has carried out this analysis and finds that when Ovum’s pre-tax WACC of 9.36% is adjusted for European market conditions, its estimate of Telstra’s adjusted pre-tax WACC is 5.35%. When Ovum’s WACC adjusted for European conditions is superimposed onto Ovum’s bar chart (Figure 1 above), it is clear that it is considerably below any of the estimates in Ovum’s benchmarking study.

Figure 2: Ovum’s European WACC Comparison

¹⁴ Ovum (2009), *Telstra Efficient Access cost model – International WACC benchmark*, 28 January 2009, Section 2: Conclusion



Source: Ovum (2009), *International WACC benchmark An Advisory Note to the ACCC*, 28 January 2009, Figure 2.7. Ovum's WACC is adjusted by applying the following European conditions: risk free rate of 4.176%; a DRP of 1%; debt issuance costs set to 0%; MRP of 5.3% and imputation set to 0%

16. While Ovum provides additional analysis on several WACC parameters, none of this analysis alters the fact that its estimate, adjusted for European market conditions, is approximately 200 basis points below Ireland and the UK and over 50 basis points below the lowest WACC of the benchmarked countries in Ovum's analysis.
17. Despite this, the only change Ovum now makes to its estimate of Telstra's WACC is to increase the tax rate in its WACC calculation. Telstra's responses to Ovum's additional commentary is below.
18. First, in relation to the tax rate, Ovum provides the following analysis:
 - The results of a PWC study show that the effective tax rate for companies in the ASX100 has increased by 6% (from 25.1% to 26.7%) from 2005 to 2007; and,
 - The Australian Treasury estimates the effective tax rate to be 20% at the end of 2004/05, likely based on a broader range of companies than the ASX 100.
19. However, Ovum inappropriately mix the two different studies with different methodologies by adding the 6% increase (based on the PWC study) to the 20% estimate (based on the Australian Treasury study) to derive one estimate of 21.3%. Then averages this with the PWC figure for 2007 of 26.7% to get 24%. The resulting 24% figure does not represent the effective tax rate.
20. Rather, the evidence provided by Ovum shows that:
 - The effective tax rate for all companies in 2004/05 was 20%
 - The effective tax rate for ASX100 companies in 2007 was 26.7%, with quartiles ranging from 30.2% to 23.5%, and growing at 6% every 2 years.
21. This data proves that the effective tax rate that would apply to Telstra's assets (being in the ASX 100) in 2007 is 26.7% with a upper quartile of 30.2%, and increasing over time. Since the effective tax rate is applied over the lives of the relevant assets in the TEA

model, the data provided by Ovum suggests that that Telstra's estimate of 30% for the tax rate is reasonable.

22. In relation to the Market Risk Premium (MRP), Ovum quotes a paper co-authored by Officer suggesting that despite the MRP being 7.7% the regulator should not increase it to this level.¹⁵ However, they fail to recognise Officer's more recent view which is contrary to the conclusion drawn by Ovum:¹⁶

A market risk premium of 6% has been widely used in regulatory price determinations in Australia. We have reviewed and updated the historical empirical evidence and we have examined the argument for change in the MRP in light of forward looking as well as historical evidence. We are of the view that there is no persuasive evidence to reduce this market risk premium but there is some persuasive argument to increase it to 7%.

and

We recognise that precise estimation of both the MRP without imputation tax benefits and the estimation of imputation tax benefits is a challenge due to 'noise' in historical data. An overlay of the need for regulatory certainty encourages us to recommend that there be no change in the widely used 6% under a view that imputation tax benefits have no value but it this is not enough to prevent our recommendation of 7% when imputation benefits are included. While we have not focused on estimating an explicit value of gamma or the value of imputation tax credits once distributed in this paper, regulatory practice places a value on gamma of 0.3 and greater. Under these circumstances we recommend the MRP be 7%.

D Engineering Issues

23. Ovum endorses the TEA model in respect of the following:

- Optimisation and efficiency of the network routes and dimensioning of cables, ducts, pits, manholes etc in TEA model¹⁷
- The location of pillars and the scorched node approach generally¹⁸
- Errors in the cable data have been rectified¹⁹

24. In relation to engineering inputs into the TEA model, Ovum states:²⁰

The parameters associated with Terrain type and Surface Breakout and Reinstatement are used to estimate proportions of activities, to which costs are then applied. Telstra has provided no new data or verification of the estimates used; and there is no independent way of verifying these proportions. We note that there is general evidence that some surface breakout and reinstatement costs can be avoided. Ovum's advice, therefore, remains unchanged: the activities are unverified and could be overestimated.

¹⁵ Ovum (2009), *Telstra Efficient Access Cost Model – Economic Issues*, 5 February 2009, section titled "Market Risk Premium"

¹⁶ Officer, B. and Bishop, S. (2008), *Market Risk Premium: A Review Paper*, August 2008, page 39

¹⁷ Ovum (2009), *Telstra Efficient Access Cost Model – Engineering Issues*, 2 February 2009, section 2.1, 3.2.1 and 3.2.2

¹⁸ Ovum (2009), *Telstra Efficient Access Cost Model – Engineering Issues*, 2 February 2009, section 3.1 and 3.2.1

¹⁹ Ovum (2009), *Telstra Efficient Access Cost Model – Engineering Issues*, 2 February 2009, section 2.2 and 2.3

²⁰ Ovum (2009), *Telstra Efficient Access Cost Model – Engineering Issues*, 2 February 2009, section 2.4 and section 3.5.3

25. Subsequent to the publication of Ovum’s report, Telstra has provided the ACCC with two sets of analysis that support the forward-looking trenching and breakout and reinstatement inputs in the TEA model:
- Telstra’s historical contractor works on breakout, trenching and reinstatement, if reflected in the TEA model, would increase the monthly network cost of ULLS by \$11. 46;
 - The statement of [CIC], who describes in detail how the inputs have been calculated.²¹
26. Telstra agrees with Ovum that some surface breakout and reinstatement cost can be avoided, and the TEA Model default inputs reflect this. Telstra’s default inputs for conduit placement avoid breakout and reinstatement in 90% of all instances (breakout and reinstatement is avoided for distribution conduit placement in 92% of all instances).
27. Ovum also states:²²

Ovum’s engineering report supported the view that all outside plant in Band 2 should be underground. Further consideration, however, suggests that this is not entirely so. For suburban ESAs, underground construction is to be preferred. Band 2, however, includes some regional centres: in the TEA Model data, at least [CIC] of services are in regional ESAs. In some regional centres (e.g. Geelong), there have been moves to permit aerial plant for other operators such as Neighbourhood Cable. This suggests that an efficient operator would have the opportunity to use aerial plant in some portion of Band 2 ESAs. This should be taken into account.”

28. Telstra’s considers that:

- While Neighbourhood Cable and Optus might have used aerial cabling in the past, no such opportunity exists in respect of an efficient operator building a customer access network over which it will supply ULLS today; and
- Even if such an opportunity existed, the costs involved in rolling-out aerial cabling are such that an *efficient* operator would not do so under current regulations.

29. In its 2001 Annual Report, Neighbourhood Cable refers to the completion of the ‘aerial build’ of its Mildura HFC network.²³ Neighbourhood Cable commenced building its network in Mildura in 1996, at around the same time that Optus commenced building its HFC network. This was prior to the introduction of legislative and regulatory impediments to aerial cabling.²⁴ Neighbourhood Cable commenced building its HFC network in Geelong in 2002. Telstra has not found any information which would validate the assertion that Neighbourhood Cable’s network in Geelong is aerial. In his statement, [CIC] sets out why an aerial rollout is practically impossible.²⁵ Further, Optus’ material submitted to the ACCC on its own CAN in October 2008 clearly acknowledges that installing aerial cable *today* is, in practice, impossible.²⁶

²¹ Statement of [CIC], 19 March 2009

²² Ovum (2009), *Telstra Efficient Access cost model - engineering issues*, 2 February 2009, section 3.5.3.

²³ See *Neighbourhood Cable Limited: Annual Report 2001*, p 4.

²⁴ See Telstra’s Draft Decision Response at section E.2.6, and the statement of [CIC] at paragraphs 40 to 55.

²⁵ See statement of [CIC] at paragraphs 40 to 55.

²⁶ Optus (2008), *Optus Public Submission to the Australian Competition and Consumer Commission in Response to its Draft Decision on Telstra’s Exemption Application in Respect of the Optus HFC Network*, October 2008, at paragraphs 4.42 and 4.43

Local planning authorities have often taken a hardline stance to any telecommunications development within their jurisdiction given community aversion to overhead cables. This is particularly true for aerial cabling. For example, the installation experiences by Optus Vision in the 1990s generally demonstrated that the community and councils had negative views towards aerial cabling. Optus could experience a similar widespread negative backlash if the current HFC network were to be expanded or infilled. This backlash extends beyond the economic cost to Optus to undertake environmental assessments required to obtain planning consent from various councils. Optus relies heavily on its 'brand' which would be adversely impacted.

This is relevant particularly in NSW, where restrictions may apply to overhead cabling that is defined as a 'subscriber connection' (such as an installation for the sole purpose of connecting a building, structure, caravan or manufactured home to a line that is part of an existing telecommunications network).

30. Accordingly, the reality is that in today's environment, it is very difficult for a telecommunications provider to rollout aerial cabling in either metropolitan or regional areas. As Optus acknowledges in the statement quoted above, while Optus was rolling out its cable network there was a significant public outcry against putting aerial cables on poles. As has been recently confirmed publicly by an Optus executive, it would be impossible for a similar rollout of aerial cable to be repeated today.²⁷
31. Ovum has assumed - somewhat simplistically - that, even if the significant legislative and regulatory impediments could be overcome, aerial cabling is appropriate for the supply of ULLS. In fact, Optus has acknowledged that its own HFC network, being an aerial network, *"is particularly vulnerable to disruption by storms and vehicle damage (as opposed to the copper CAN, an underground network). Aerial networks are generally acknowledged to have lower availability compared to underground networks and are thus not suitable for business services."*²⁸ Accordingly, the practical limitations of aerial cabling are such that an efficient operator supplying ULLS would not build a network using aerial cabling.
32. Further, even if such an opportunity to roll out aerial cabling existed, the costs involved in doing so are such that an *efficient* operator would not do so. Ovum fails to acknowledge the significant costs incurred in rolling out aerial cable. In fact, the maintenance costs of an aerial network with similar capabilities to Telstra's customer access network, would be considerably more than such a network if it were rolled-out underground. Those costs relate to, for example, negotiating with land owners (whose land may be impacted by the aerial roll out) and local and/or State governments in obtaining all approvals necessary for a facility installation permit from the Australian Communications and Media Authority. Indeed, Optus has expressly acknowledged the significant economic costs associated with the roll out of aerial cabling, including *"the economic cost to Optus to undertake environmental assessments required to obtain planning consent from various councils"*.²⁹
33. Ovum also states:³⁰

²⁷ Commentary by Maha Krishnapillai, Director, Government and Corporate Affairs, Optus at CEDA Australia's Broadband Future event, Sydney, 3 December 2008.

²⁸ Optus (2008), *Optus Submission to the Australian Competition and Consumer Commission on Telstra's December 2007 Application for Exemption for Fixed Line Services in the Optus HFC Area, Public Version*, March 2008, at paragraph 2.13.

²⁹ Optus (2008), *Optus Public Submission to the Australian Competition and Consumer Commission in Response to its Draft Decision on Telstra's Exemption Application in Respect of the Optus HFC Network*, October 2008, at paragraphs 4.42 and 4.43

³⁰ Ovum (2009), *Telstra Efficient Access Cost Model – Engineering Issues*, 2 February 2009, section 2.4

With regard to IEN duct sharing and New Estate allowance, Ovum affirms that the TEA model estimates are acceptable for an efficient operator but cannot be verified without direct data from Telstra

34. However, Ovum also states:³¹

For IEN duct sharing, Ovum affirms that the TEA model figure is appropriate for an efficient operator.

For New Estates, Telstra has provided some new data on proportion of new estates in Band 2 areas. Ovum agrees that the current approach is suitable for estimating costs.

35. Telstra agrees that the values are appropriate for an efficient operator. With regard to New Estates, Telstra has lodged two statements, which provide additional detail as to Telstra's historical ability to share trenches in new estates.³²

E International benchmarking

36. Ovum's ULLS international benchmarking report is intended to address the impact of several potential cost drivers which must be considered when comparing ULLS charges in different countries. However, there are several problems with Ovum's analysis which are discussed in the following sections.

37. First, there are several errors in Ovum's analysis, which, once corrected for, result in the proposed prices for ULLS being comparable to charges overseas, when some factors are considered.

- Ovum incorrectly calculates Australia's weighted average monthly ULLS charges over all bands, which results in the current price being understated and the proposed charge being overstated;
- Ovum fails to take into consideration the once-off ULLS connection charges applied in each nation in conjunction with any monthly ULLS charge, which means Ovum's comparisons fail to provide a complete and consistent view of ULLS charges across different countries;

38. Second, Ovum has accounted for only a subset of the relevant factors that drive costs and, for those that are considered, they are done so incorrectly. For instance:

- Ovum's use of a 'composite exchange rate' for which there is no evidence of widespread adoption or peer review and when there exists an accepted and documented method of currency conversion known as Purchasing Power Parity (PPP).
- Ovum does not consider the effect of exchange rate volatility in comparing international prices.
- Ovum compares only countries with much higher urban density than in Australia. When countries with urban densities similar to Australia are considered, the proposed ULLS charge is in line with other countries, urban density considered.

³¹ Ovum (2009), *Telstra Efficient Access Cost Model – Engineering Issues*, 2 February 2009, section 3.5.1

³² Statements of [redacted] dated 26 March 2009, and [redacted], dated 26 March 2009.

- Ovum does not consider how housing mix affects ULLS costs. Australia has 16% more detached (free standing) homes (which are more costly to supply) than any country in the sample. When this is considered, the proposed ULLS charge is in line with other countries.
 - Ovum does not consider how changes to copper prices affect the ULLS costs estimated by overseas regulatory authorities. Differences in copper price and copper price trend assumptions across different countries can result in different ULLS cost estimates and must be considered in an international benchmarking study.
 - Ovum incorrectly infers that the lowest retail prices of per mega bit services are a function of the monthly ULL prices. However, there is no assurance that the lowest retail price in Australia or overseas are based on ULLS, and not based on other wholesale services such as LSS, which in Australia is priced by the ACCC at \$2.50.
39. Third, Ovum considers only one cost driver at a time. Instead, it would be necessary to consider all cost drivers at the same time to ensure that a correct conclusion from the analysis is drawn. One approach to ensure all cost drivers are considered together is to develop a cost model that is based on best practice, efficient inputs and engineering rules. The TEA model does this and is, therefore, a superior basis with which to assess the reasonableness of prices than the ad hoc international benchmarking study undertaken by Ovum.
40. After correcting the errors in Ovum’s analysis the sections below demonstrate that Telstra’s Undertaking price will result in a nationally weighted average ULLS charge that is in line with charges overseas, when urban density and housing mix are considered. Notwithstanding, many other factors that are important to consider in an international benchmarking analysis are not adequately considered by Ovum. Kip Meek states:³³

With a limited number of exceptions, we are broadly in agreement with the Ovum Report in the areas it covers. However the Ovum Report is silent on the majority of issues we raised in our December Report. For those issues it does address, it does not seek to demonstrate that these issues are immaterial for an appropriate international benchmarking exercise.

Thus we continue in our view that there are a significant number of adjustments that would be necessary make the use of benchmarking, even as a contributor to a fuller analysis, a valid approach to helping to determine a complex regulatory issue. Given that Australia is an extreme or high case on various drivers of ULL costs, including housing mix, equity premium and connection/rental fee split (as discussed in our previous report), the combined impact of appropriate adjustments for these and other factors is likely to be substantial. Thus it is highly uncertain whether the ACCC’s simple benchmarking exercise even has value as a ‘sanity check’ of the more rigorously calculated figures from the TEA model.

E.1 Measuring Australia’s comparative ULL prices

41. Ovum makes two critical errors when calculating the Australian ULLS price to benchmark against other countries:
- Ovum average ULLS prices using incorrect weights

³³ Meek, K. and Kenny, R. (2009), *Response to Ovum’s report “Telstra ULLS Undertaking – ULLS International Benchmarking”*, March 2009, page 11

- Ovum do not have regard to the ULLS price structure

42. These two errors are discussed below.

E.1.1 Averaging ULL charges for Australia

43. Ovum calculated two nationally averaged ULLS charges for Australia:

- Australia (Current) \$15.75³⁴ — the weighted average ULLS price with a Band 2 price equal to \$16.00 per month; and,
- Australia (Proposed) '\$28.93'³⁵ — the weighted average ULLS price with a Band 2 price equal to \$30.00 per month.

44. The weights used by Ovum in calculating these weighted averages are based on the number of ULLS lines that have been purchased from Telstra by access seekers.³⁶

45. It is incorrect to use the number of ULLS lines as the underlying monthly prices for ULLS are determined on the basis that those prices will be charged for all lines in Telstra's network (not just ULLS lines). This is also the approach likely to be taken in other countries to determine average ULLS prices. Hence, for consistency, the weights applied to the prices should be based on the total number of all lines in each band, not just ULLS lines.

46. The weights calculated on the basis of ULLS lines (used by Ovum) and the weights calculated on the basis of all lines (the correct weights) are presented below in Table 1.

Table 1: Access seeker ULL lines and national ULL lines

	ULLS lines		All lines	
	Number	Weights (%)	Number	Weights (%)
Band 1	28,453	4.66%	272,623	2.70%
Band 2	574,465	94.08%	6,816,695	67.39%
Band 3	7,555	1.24%	2,018,397	19.95%
Band 4	127	0.02%	1,007,822	9.96%
Total	610,600	100.00%	10,115,537	100.00%

Source: ACCC Snapshot of Telstra's Customer Access Network – December 2008, Table 1.

47. Table 2 shows the weighted average monthly ULLS charges first, using the weights employed by Ovum and second, using the corrected weights. Table 2 shows that, when the correct weights are applied, the weighted average ULLS price with the proposed \$30 Band 2 price is lower and the weighted average ULLS price with the current \$16 Band 2 price is higher than those used by Ovum. Ovum's benchmarking should have used \$26.64 for the weighted average ULLS price with the proposed \$30 Band 2 price and \$17.21 for the weighted average ULLS price with the current \$16 Band 2 price.

³⁴ Ovum (2009), *Telstra ULLS Undertaking – ULLS International Benchmarking*, 26 February 2009, page 5.

³⁵ Ovum (2009), *Telstra ULLS Undertaking – ULLS International Benchmarking*, 26 February 2009, page 5.

³⁶ See ACCC Snapshot of Telstra's Customer Access Network – December 2008, footnote 4.

Table 2: Australian nationally averaged ULL price

	Using Ovum's weights	Using corrected weights	Difference
Australia (Proposed)	\$28.93*	\$26.64	\$2.28
Australia (Current)	\$15.75	\$17.21	\$1.46

*Ovum report a figure of \$28.93, however the correctly calculated figure is \$28.92.

E.1.2 ULLS price structure

48. The ICN report suggests that to properly benchmark international ULLS prices the combination of both monthly ULLS charges and one-off connection charges should be studied. This represents the 'whole of life' cost of ULLS. As the ACCC noted in relation to a similar benchmarking study:³⁷

To provide a more reasonable comparison, the charges in the study were based on a 24-month contract. Therefore, the ULLS charge in Australia was calculated as a sum of the connection charge and 24 monthly ULLS rental charges.

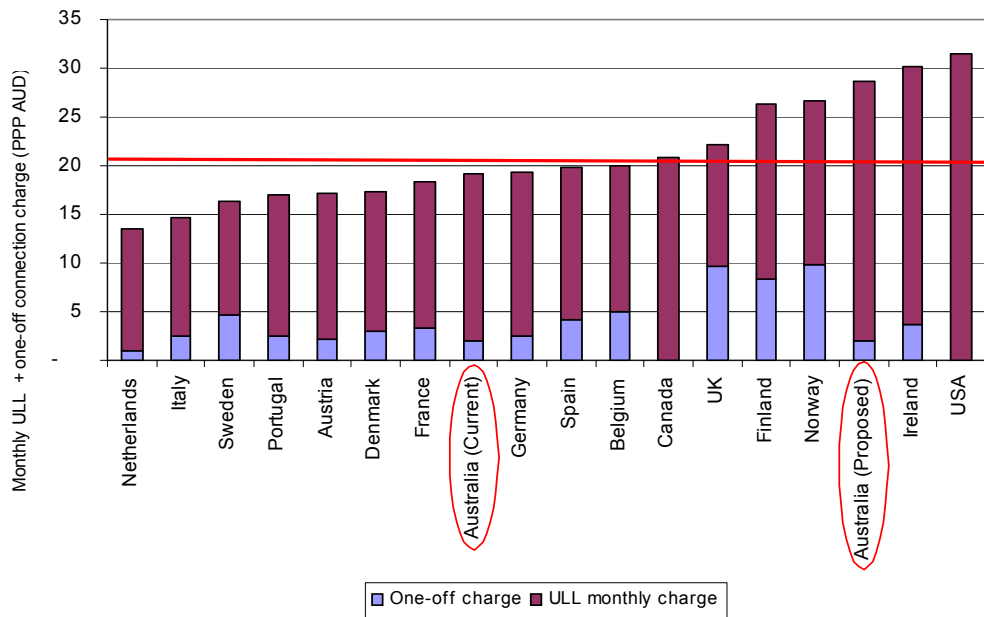
49. A 'whole of life' approach is appropriate because, as Ovum also acknowledges,³⁸ different countries recover different costs from connection and monthly charges. Thus the monthly charges in different countries may differ because the costs of some functions might be recovered from monthly charges in one country, while the costs of those same functions might be recovered from connection charges in another.

50. The 'whole of life' ULLS charges are presented in Figure 3, where the connection charge is divided by 24 months and added to the monthly charge. Figure 3 illustrates that, while the UK, Finland and Norway have the lowest monthly charges in Europe, they are comparable to the proposed 'whole of life' charges in Australia.

³⁷ ACCC (2002), *Pricing of Unconditioned Local Loop Services (ULLS): Final Report*, March 2002, page 46

³⁸ Ovum (2009), *Telstra ULLS Undertaking – ULLS International Benchmarking*, 26 February 2009, page 10.

Figure 3: 'Whole of life' ULL charge (based on 24 month customer life)



Source: One-off connection cost from Commission of the European Communities, Progress Report on the Single European Electronic Communications Market 2007 (13th Report), Volume 2 Figure 111, pg 105.
 Note: ULL monthly charges are for one month only and consistent with all other figures reported in this report.
 Note: According to the European Commission, Canada and the USA and Canada did not apply a connection charge at the time this data was collected.

- 51. Ovum cites insufficient data as the reason for not benchmarking on a 'whole of life' basis. This is not a practical constraint, as demonstrated by Figure 3.
- 52. The 'whole of life' ULLS charge is used as the basis of comparison for the remainder of this document.

E.2 Factors to consider when benchmarking Australia's price against other countries

E.2.1 Composite exchange rate

- 53. In relation to the application of Ovum's composite exchange rate, Ovum states:³⁹

For comparing wholesale charges in different countries, Ovum uses a composite exchange rate to take into account the different costs of labour and capital in those countries. That is, the average ULLS charge for each country has been converted into USD using a composite of 40 per cent exchange rate and 60 per cent purchasing power parity. The resulting composite rate reflects the fact that approximately 40 per cent of costs incurred are through capital equipment and 60 per cent of costs are due to labour. The assumption underlying this approximation is that equipment can be imported and exported and an exchange rate would therefore be appropriate for comparing the cost of capital equipment. Labour costs,

³⁹ Ovum (2009), *Telstra ULLS Undertaking – ULLS International Benchmarking*, 26 February 2009, page 4.

on the other hand, include cost-of-living factors for each country and therefore Purchasing Power Parity would be appropriate to use.

54. Ovum utilises a 40% and 60% weighting for capital and labour costs respectively in its composite exchange rate. The rationale given is that PPPs will account for the cost of living expenses within a nation, and the application of an exchange rate is more relevant to capital that must be bought and sold on an international market. Ovum claims the chosen weights of 40% capital and 60% labour are based on 'fact'. Telstra does not have access to these claimed sources of Ovum's fact and cannot verify it or otherwise.
55. Notwithstanding, an appropriate method of currency conversion known as Purchasing Power Parity (PPP) already exists. According to the OECD:⁴⁰

Purchasing Power Parties (PPPs) are currency conversion rates that both convert to a common currency and equalise the purchasing power of different currencies. In other words, they eliminate the differences in price levels between countries in the process of conversion.

56. The PPP measures take into account differences in capital and labour. The OECD states:⁴¹

The unit prices used in the bills of quantities must cover not only the producer's direct cost for each of the specified elementary components (such as materials, labour, hire of equipment, sub-contractors' fees), but also the contractor's profits (or losses), and the general expenses (including share of main office overheads) and preliminary expenses (including the cost of site preparation) connected with the construction. The unit prices do not include architects' and engineers' fees and non-deductible VAT. These are added after the overall price of work has been established. Nor do the unit prices include the expenditure incurred for the purchase of the land. But in this case no addition is made to the overall price of work either for the cost of the land itself or for the financial and other costs associated with the transfer of ownership.

57. The wide use of PPPs is also acknowledged by the OECD. The OECD states:⁴²

Public enterprises apply PPPs when comparing their prices and operating costs with those of similar public enterprises in other countries. Private firms operating in different countries apply PPPs for the purposes of comparative analysis involving prices, sales, market shares and production costs. Banks employ PPPs in economic analysis and in the monitoring of exchange rates. Individuals often refer to PPPs in salary negotiations when moving from one country to another (as do the personnel managers with whom they are negotiating).

58. Given that an already accepted method of currency conversion and inflation adjustment exists, and that no evidence of wide acceptance or peer review of a composite currency method can be found, applying a composite currency method such as Ovum's is inappropriate.

E.2.2 Ovum has not appropriately accounted for exchange rate volatility

59. In regard to the use of exchange rates, Ovum states:⁴³

Ovum updates the exchange, Purchasing Power Parity and composite exchange rates for each country every quarter. For each country calculation in this report,

⁴⁰ http://www.oecd.org/department/0,3355,en_2649_34357_1_1_1_1_1,00.html

⁴¹ OECD, Op. cit, Chapter 6, para. 37, pg118.

⁴² OECD PPP Methodological Manual, Executive Summary, para. 24, pg3.

⁴³ Ovum (2009), *Telstra ULLS Undertaking – ULLS International Benchmarking*, 26 February 2009, page 5.

however, an average exchange rate over the second quarter in 2008 has been used. The ULLS charges in original currency and the PPP factors are also taken from the second quarter of 2008. The rates in USD are converted to AUD using the AUD-USD composite rate.

60. Ovum states that it has averaged exchange rates over one quarter (3 months). However, Exchange rate volatility can change the exchange rate from quarter to quarter. This is discussed by the OECD in comparing the use of PPPs versus exchange rates:⁴⁴

Exchange rates are subject to fluctuations. And countries may suddenly appear to become “richer” or “poorer” even though there has been no change in the relative volumes of goods and services produced. It is the volatility of exchange rates, and not that they do not correct for price level differences between countries, that is sometimes perceived as their weakness when making international comparisons of GDP. Fluctuations can be avoided by using moving averages of exchange rates to convert GDP to a common currency. Averaging exchange rates over several years does dampen their fluctuations, but it does not bring them any closer to PPPs.

61. Ovum should consider exchange rates averaged over different periods to ensure that exchange rate volatility does not lead one to draw the wrong conclusion from the benchmarking analysis.

E.2.3 Population density

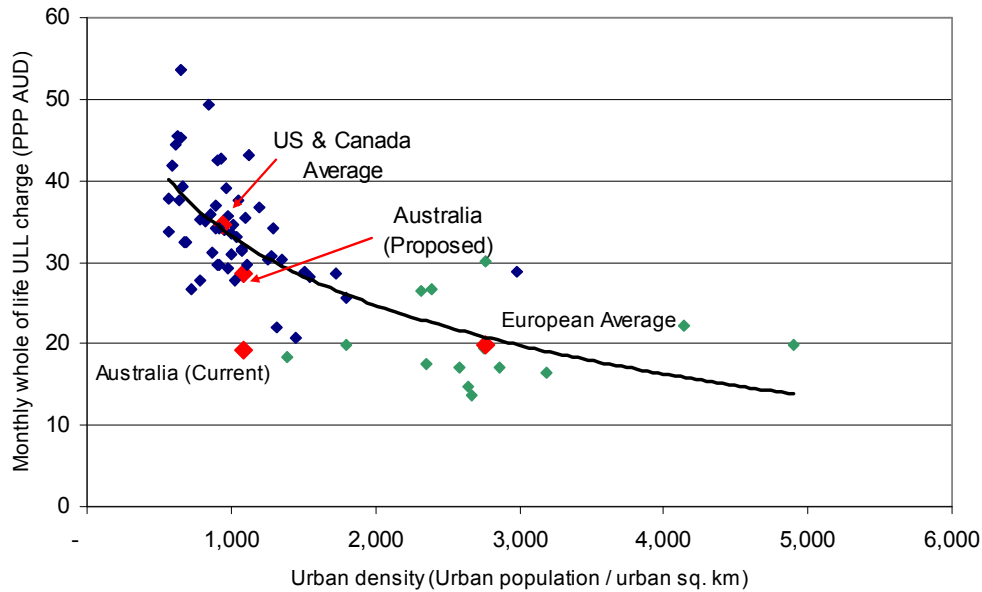
62. Population density is a major driver of ULLS cost. The ACCC has implicitly acknowledged the importance of population density as a driver of per loop ULL costs in its Draft Decision by including ‘Population per square km’ figures in its table of benchmark ULLS prices. As discussed in the ICN report, these figures are misleading as they are averages of national density for other countries but only Band 2 densities for Australia. A more appropriate measure of density for comparing Band 2 monthly ULLS charges is the urban rather total national density of countries included in the analysis. However, with the exception of Holland and Canada, all other countries sampled by Ovum apply nationally averaged monthly ULL charges. Thus, a national density should ideally be used.
63. Notwithstanding, Figure 4 illustrates the ‘whole of life’ weighted average ULLS charge against urban population densities for each country in the Ovum report along with Canada and all except one of the states in the USA.⁴⁵ A line of best fit⁴⁶ is included to illustrate the trend, European nations are coloured in green, Canada & the US states are in blue and respective averages along with Australia’s proposed and current averages are in red.

⁴⁴ OECD Ibid, Executive Summary, para. 15, pg2.

⁴⁵ An urban density for Wyoming could not be calculated.

⁴⁶ A logarithmic line of best fit was chosen here as the associated statistical measure of fit for this line indicated it was a superior fit to a simple straight line.

Figure 4: Whole of life ULL charge vs. urban population density



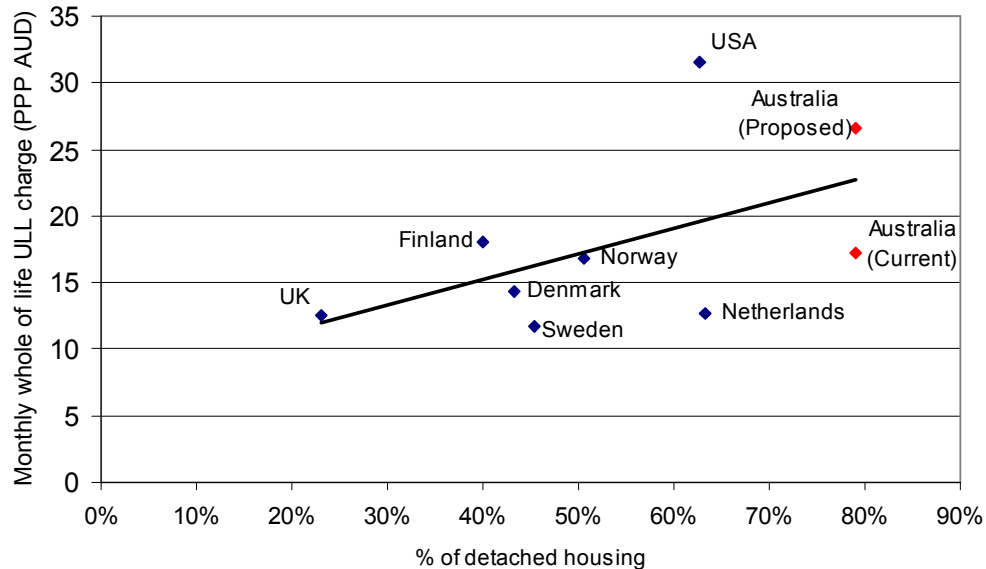
64. Figure 4 highlights four important points:

- There is a clear association between urban densities and ULLS charges — as urban density decreases, the ULLS charge increases;
- Australia is more closely related to North America in terms of urban densities;
- The Australia (proposed) ULLS charge falls extremely close to the North American average charge and urban density; and,
- Australia does not share the high densities associated with the European nations, yet the Australia (Current) ULLS charge appears to have been set in line with the average European charge.

E.2.4 Housing mix

65. All things being equal, the unit cost to provide fixed telecommunications services to an area dominated by apartment blocks or shared buildings is lower than that for areas dominated by detached housing. As such the mix of housing type will affect the total ULLS cost. Figure 5 provides the housing mix by type for European countries, the USA and Australia, where data is available.

Figure 5: Whole of life ULL charge vs. % of detached housing



Sources:

- Australia - ABS Housing, National Survey 1997-2007 Cat No. 4102.0.
- Denmark - http://www.dst.dk/HomelJK/Statistics/focus_on/focus_on_show.aspx?sci=1009
- Finland - http://tilastokeskus.fi/til/asu/2007/asu_2007_2008-05-21_tie_001_en.html
- Netherlands - <http://www.vrom.nl/pagina.html?id=37366>
- Norway - http://www.ssb.no/english/subjects/02/01/fobboldig_en/tab-2002-09-23-01-en.html
- Sweden - http://www.scb.se/templates/tableOrChart____237370.asp
- UK - <http://www.statistics.gov.uk/StatBase/Expodata/Spreadsheets/D7520.xls>
- USA - American Housing Survey For the United States: 2007 Table1 A-1 pg1.

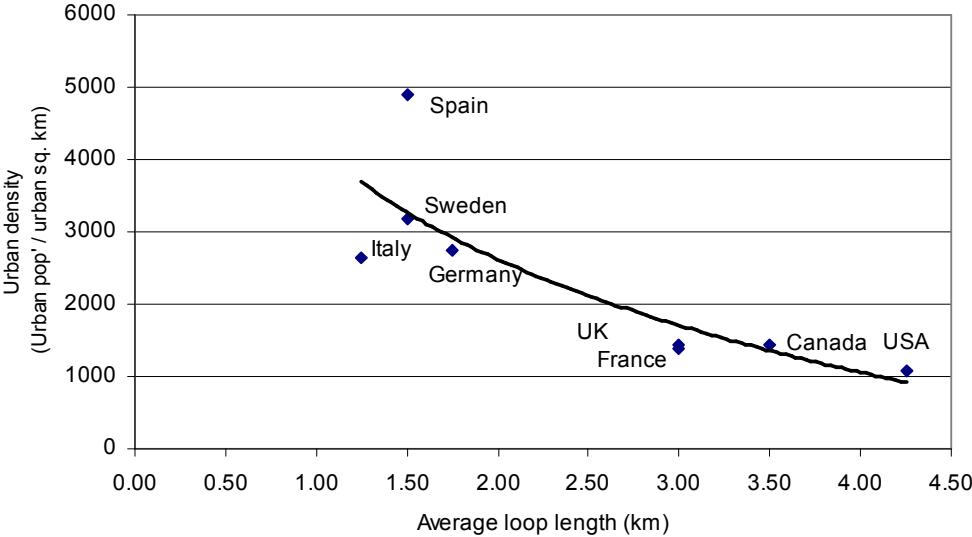
66. Figure 5 shows that a strong positive relationship exists between the ‘whole of life’ ULLS charge and the percentage of detached (free standing) buildings in each nation for which data is available. Two major points are evident from Figure 5:

- Australia has substantially more detached (free standing) homes than any country in the sample for which data is available (16% more than the next highest countries the Netherlands and the USA); and,
- The current ‘whole of life’ ULLS charge in Australia appears to be artificially low relative to the international trend given the portion of detached housing in each nation.

E.2.5 Loop lengths

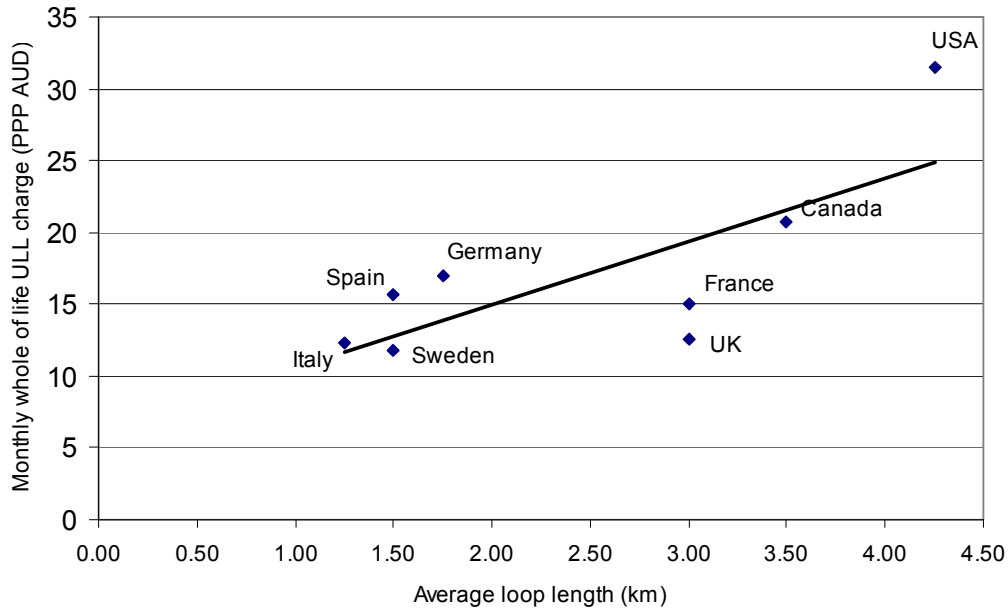
67. Data to calculate the national average loop length of Australia is not available. Ovum uses a Band 2 loop length to compare against other countries’ nationally averaged loop lengths. This is inappropriate as it is likely to be biased in an indiscernible way. Nonetheless a clear positive relationship between other countries’ average loop lengths and urban densities is evident from Figure 7.

Figure 7: Urban density vs average loop length



- 68. As noted above (and illustrated in Figure 4) Australia shares similar urban densities to Canada and the USA. This suggests that Australia’s ULLS charges would be better compared to that of Canada and the USA rather than European countries.
- 69. When the USA and Canada are added to the comparison of ULLS charges and loop lengths, as they are in Figure 8 below, the Australia (Proposed) ULLS charge of \$28.64 would not be out of line with international benchmarks, if the average Australian loop length is similar to that in the USA.

Figure 6: Monthly ‘whole of life’ ULLS charge vs. average local loop length



Source The Information Technology and Innovation Foundation, *Explaining International Broadband Leadership*, May 2008, p. 11

Note: Australia (Current) and Australia (Proposed) is based on Ovum’s calculation of Band 2 average loop length from TEA v1.3.

E.2.6 Copper prices

70. As suggested in the ICN report, copper prices are a significant cost element of any ULLS charge. Further, the real price of copper has changed significantly over time. This raises two important issues for an international benchmarking of ULLS prices:

- To compare other countries’ ULLS prices to Australia’s, one must ensure that a consistent view of copper prices is applied; and,
- ULLS prices that were based on historical determinations of future copper prices are unlikely to reflect today’s forward looking copper price.

71. These points have been recognised Hausman, Sidak and Tariff, who comment:⁴⁷

Contrary to the suggestion that copper prices were on a constant downward trend, which would justify lower local loop prices in future years, copper price almost immediately began to increase in the 2003 time frame and by late 2007 were more than four times their 2003 level. Such an increase would have a noticeable impact on the regulated rate for an unbundled local loop.

72. In regard to the trend of copper prices and their impact on forward looking ULLS costs Ovum commented:⁴⁸

While we note that copper prices have been generally increasing, we have not attempted to estimate a long-term price for copper cable. Copper cable is an international commodity and we would expect that the landed prices of copper cable are similar in all countries comparable to Australia. The copper price is therefore a common factor between countries.

A general increase in copper cable prices would feed into a trend to raise ULLS charges over time (if the regulated charge is cost-based). The time at which regulated decisions are made could, therefore, be factored into an international comparison. As we do not have reliable data on copper cable prices over time, we have not attempted to undertake this comparison. We understand such data is unlikely to be available due to commercial confidentiality.

73. The copper price affects the monthly charge for ULLS in two ways. First, copper prices affect the cost of assets in models used to determine ULLS prices around the world. Second, copper price trends affect the extent of the tilt, when tilted annuities are applied in models, which is not always the case.
74. Ovum cites a lack of data as the reason why copper prices have not been considered in Ovum's price benchmarking report. Thus, Ovum's international benchmarking analysis does not take this factor into account.

E.2.7 Retail prices

75. Ovum also focuses on two additional comparisons of monthly ULLS charges: first, retail per mega bit service and second, a ULLS margin factor.
76. Retail prices are not relevant to an international benchmarking of ULLS prices. Retail prices presumably recover the costs of many things other than the ULLS charge (for example, data transmission and marketing costs), that might reasonably differ between countries. Countries with otherwise similar ULLS charges might have different retail prices because of, for example, greater distances between cities requiring higher transmission costs. It would be reasonable for those countries to have different retail prices.
77. Further, the lowest retail price is not a relevant comparator. There is nothing in Ovum's analysis that suggests that the lowest retail prices are provided on the basis of ULLS. Indeed, they might be provided on the basis of LSS, which in Australia has a price of \$2.50, much lower than the current price of ULLS.
78. In regard to the ULLS margin factor, Ovum state:⁴⁹

Generally, one could expect that the ULLS Margin Factor is less than 1. It indicates how much of the retail price is consumed by the ULLS charge. If the ULLS Margin Factor is high, it means that there is little room for competition. If the ULLS Margin Factor is low, then there is scope for competitors to provide their own retail services. Other factors are also relevant: for example, the extent of competition at retail and wholesale levels. The interpretation of the ULLS margin will depend to some extent on the specific circumstances in the relevant national markets.

79. There are several important issues associated with Ovum's analysis, which demonstrate that Ovum's analysis should not be relied upon:

⁴⁷ Jerry A. Hausman, J. Gregory Sidak and Timothy J. Tariff, "Are Regulators Forward-Looking? Copper Prices and Telecommunications Networks, November 2007, pg 7.

⁴⁸ Ovum (2009), *Telstra ULLS Undertaking – ULLS International Benchmarking*, 26 February 2009, page 9.

⁴⁹ Ovum (2009), *Telstra ULLS Undertaking – ULLS International Benchmarking*, 26 February 2009, page 11.

- It is unclear if the underlying OECD average retail prices used by Ovum are in fact weighted averages for each nation. Telstra was not able to find any clarification on this point either in Ovum's report or from the OECD. This is extremely important as the final results may be biased if prices are not calculated in this manner. The OECD highlight this as a potential issue stating:⁵⁰

In order to check for a price/margin squeeze, the price for LLU and the access prices (monthly rental fees) for the products delivered over a copper line have to be compared. If only the cheapest residential access prices are compared to the price of LLU, then most countries would have a severe margin squeeze problem. This is because the cheap residential line rental is often politically mandated and is therefore below cost. It is therefore necessary to compare LLU prices with a weighted average of the monthly subscriber charges.

- It is unclear if the underlying OECD average retail prices used by Ovum include business prices or if they are exclusively residential. This may bias results as generally in practice business consumers are charged higher connection charges than retail consumers. If business consumers are not included in the data then the final results may potentially be biased.

E.2.8 Other problems

80. The OECD point to additional problems when undertaking benchmarking, which should also be considered by Ovum in drawing its comparisons:⁵¹

It is difficult to compare the price of unbundling among OECD countries because the coverage of prices differs from country to country. For example, the price could differ depending on whether the line rental fees include administrative and refurbishment costs. In addition, the monthly rental price often differs according to whether the line is existing (active) or new (non-active). Recognising these complexities, the price for LLU that each regulator or incumbent publishes can be used as a benchmark to compare relative price performance between countries.

⁵⁰ OECD, Developments in Local Loop Unbundling. A report presented to the Working Party on Telecommunications and Information Services Policy (TISP), pg 29.

⁵¹ OECD, Developments in Local Loop Unbundling. A report presented to the Working Party on Telecommunications and Information Services Policy (TISP), pg 29.