

Optus Submission to
Australian Competition and Consumer Commission
on
Model price terms and conditions for PSTN, ULLS and LCS

May 2003

Table of Contents

1. Overview.....	4
PSTN OTA.....	5
ACCC rates for PSTN OTA.....	5
ULLS.....	7
Local Call Resale.....	8
2. Starting point for PSTN OTA and ULLS	9
3. Pricing of PSTN OTA	11
Telstra’s Undertakings.....	13
Structure of PSTN OTA charges.....	13
Peak and off-peak charges.....	14
Optus’ view on the access deficit contribution.....	15
4. Pricing of ULLS.....	17
TSLRIC of ULLS is based on forward-looking network design.....	18
ACCC’s ULLS costs in Band 2 appear relatively high.....	21
ULLS access prices should be not be averaged across bands.....	21
Pricing of ULLS specific costs.....	25
Recovery of ULLS specific costs on a per month basis.....	29
Double counting of costs.....	30
ULLS demand forecasts.....	30
5. Adjustment path for PSTN OTA and ULLS	33
Technology factor.....	34
Output factor.....	35
ADC adjustment factor.....	39
6. Starting point for LCS	39
Establishing a starting LCS access price under retail-minus.....	41
Establishing the TSLRIC of LCS access based on the n/e/r/a-ACCC model.....	46
Factors affecting the retail-minus price of LCS.....	47
7. Adjustment path for LCS using re-calculation of LCS retail costs	48
ACCC’s proposed adjustment path for re-calculation of LCS retail costs.....	49
Sharing wholesale cost reductions with customers.....	51
8. Range versus point estimate	51
9. PIE 2	52
TSLRIC.....	53
Trenching costs.....	57
Trench sharing.....	57
O&M Costs.....	58
WACC.....	59
<i>Imputation factor</i>	62
<i>Risk-free rate</i>	63
<i>Market Risk Premium</i>	63
<i>Cost of Debt</i>	65

Annualised costs..... 65

1. Overview

- 1.1 This submission primarily responds to the ACCC's April 2003 discussion paper on "Model Price Terms and Conditions for PSTN, ULLS and LCS".
- 1.2 The role of indicative prices cannot be overstated. Indicative prices are likely to form the basis of negotiated prices between access seekers and Telstra. As a signal of what the ACCC would rule in an access dispute, the prices will have a significant impact on current and future price negotiations. Optus believes that the indicative prices will set a floor in the market from which Telstra will seek to negotiate.
- 1.3 This submission also includes Optus' comments on a number of issues raised in the context of the ACCC's discussion paper on "Telstra's Undertakings for Domestic PSTN Originating and Terminating Access, Unconditioned Local Loop Service and Local Carriage Service".
- 1.4 We note that Optus has not been granted access to the confidential information or the PIE 2 model on which Telstra's Undertakings are based. This has restricted the input we give at this time. Once we have access and have reviewed the model we will make a separate submission to amplify on issues raised in this submission and address any remaining issues in the latter discussion paper, particularly in relation to Telstra's PIE 2 model.
- 1.5 Optus has made numerous submissions to the ACCC in relation to PSTN originating terminating access (OTA), unconditioned local loop service (ULLS) and local carriage services (LCS). These submissions have been in the context of the ACCC:
 - Assessing Telstra's two previous access Undertakings for PSTN OTA (lodged in 1998 and 1999).
 - Arbitrating Optus' PSTN OTA access dispute for 2001/02.
 - Declaring the LCS and establishing pricing principles for LCS.
 - Arbitrating Optus' LCS dispute notified in August 1999.
 - Declaring the ULLS and establish pricing principles for ULLS.
 - Arbitrating the Optus/XYZed ULLS dispute notified in July 2000.
- 1.6 In addition, Optus has made submissions to the ACCC in relation to these services and has provided general information about the access regime or to raise matters of dispute with Telstra in relation to these services. Optus refers the ACCC to the contents of those submissions when it has regard to setting model terms and conditions for PSTN OTA, ULLS and LCS and when it assesses the Undertakings lodged by Telstra on 9 January 2003.
- 1.7 Elements of this submission are provided to the ACCC on a commercial in confidence basis.

- 1.8 For the purpose of arbitrating prices or reviewing Telstra's Undertakings and, Optus submits in setting the prices for the model terms and conditions for the core services, the ACCC must assess whether the prices are reasonable. It is important in this context that the ACCC takes into account current market prices and carriers expectations for future movements in those prices based on the legislative reasonableness criteria
- 1.9 For each of the services under review by the ACCC there are three prices that are known to access seekers and Telstra. They include:
- The most recent indicative prices issued by the ACCC.
 - The contracted rates between carriers.
 - The rates proposed in Telstra's Undertaking.
- 1.10 A review of these rates indicates that for each service the prices proposed in the Undertakings are materially above both the ACCC's most recent indicative prices **[Start commercial-in-confidence]** **[End commercial-in-confidence]**. Further, Telstra's proposed prices are inconsistent with both past and expected trends in prices.
- 1.11 This historical aspect to interconnection pricing is important because it closely suggests the price that Telstra, as access provider, and access seekers are prepared to accept having regard to the access provider's legitimate business interests and the interests of access seekers. Hence, past agreements are directly relevant to the application of the legislative reasonableness criteria.
- 1.12 Optus believes, in general, that the starting point for the indicative prices should be the most recent indicative prices issued by the ACCC. These will largely reflect the most recently contracted rates between carriers. The prices or cost components in Telstra's Undertakings would only be acceptable if they represent a significant improvement in the rate offered.
- 1.13 Optus' view on the starting indicative price and the trend in price for each service is given below. The balance of this submission provides the detail supporting these conclusions.

PSTN OTA

- 1.14 The ACCC has issued the following headline indicative prices for PSTN OTA services over the past few years. These have been released in the context of assessing Telstra's Undertakings and releasing indicative prices.

ACCC rates for PSTN OTA

	National average rate
1999/00	1.77 cents per minute (CPM)
2000/01	1.53 CPM
2001/02	1.30 CPM (provisional basis)

- 1.15 Each of the above rates proposed by the ACCC were based on the n/e/r/a-ACCC model or a roll forward of that model. To date the ACCC has not provided its view on the appropriate rates for 2002/03 or later periods.
- 1.16 The rates advised by the ACCC have fallen in large part due to the reduction in the access deficit component of the PSTN OTA charge. Optus has advised the ACCC to reconsider the size and structure of the access deficit contribution levied on PSTN OTA. Optus believes that the levying of an access deficit is anticompetitive, unreasonable and unnecessary given the existence of the universal service contribution fund.
- 1.17 **[Start commercial-in-confidence]**
- 1.18 **[End commercial-in-confidence]**
- 1.19 The above analysis indicates the prices put forward by Telstra in its Undertaking are significantly in excess of the rates that are likely to have been set by rolling forward the n/e/r/a-ACCC model. **[Start commercial in confidence]** **[End commercial in confidence]** The prices in the Undertaking are also inconsistent with the previous trend for PSTN rates to reduce through time having regard to efficiency gains and rebalancing over this period.
- 1.20 In setting indicative prices the ACCC needs to take account of the fact that the rates proposed in the Undertaking are significantly in excess of those prevailing in the market and carriers' expectations of the rates that are likely to be considered acceptable. Accordingly, the Undertaking rates should have no role in the setting of indicative prices.
- 1.21 The starting point for setting indicative prices are the rates that would be produced by rolling forward the n/e/r/a-ACCC model. In this submission Optus submits that these rates should then be adjusted to reflect:
- The removal of the access deficit component from PSTN OTA.
 - The application of a lower WACC consistent with forward-looking principles.
 - The reduction in underlying costs over the next three years due to the efficiency gains from technology improvements.
 - Improvements in the scale of the PSTN, given traffic growth on the network and the existence of economies of scale and scope in the network components.
- 1.22 These points are elaborated on later in this submission.

ULLS

- 1.23 In March 2002, the ACCC issued its Final report on “The pricing of ULLS” in which it proposed that prices for ULLS (at the RSS/RSU level) should be set as per the table below.

ACCC indicative prices for ULLS (including specific costs)

	2000-01 \$/month	2001-02 \$/month
Band 1	12	13
Band 2	35	35
Band 3	39	39
Band 4	59	58

- 1.24 **[Start commercial-in-confidence]**

[End commercial-in-confidence]

- 1.25 In contrast to the above charges, Telstra’s Undertaking proposes to set prices at \$20 per service per month for Band 1 and \$40 per service per month for Bands 2 through to 4. This represents a significant increase in the current price of services in both Band 1 and Band 2, which are the only locations where ULLS is currently purchased by Optus.
- 1.26 In setting indicative prices the ACCC should ignore the prices proposed in Telstra’s Undertaking, which are significantly above prevailing market prices and access seekers’ expectations of the rates deemed to be acceptable to the ACCC.
- 1.27 An examination of the PIE 2 model that supports Telstra’s Undertaking indicates that the previous modelling by the ACCC may have significantly over estimated the network costs associated with the provision and maintenance of Telstra’s access lines in Bands 1 through to Band 3. Whilst Optus does not support Telstra’s proposed ULLS prices, the ACCC should not ignore this recent analysis of Telstra’s network costs when setting its indicative prices, otherwise it risks setting prices far in excess of cost.
- 1.28 In respect of the ULLS specific costs, Optus considers that the previous cost estimates developed by the ACCC should stand. This would set the starting point for ULLS specific costs at \$46 per service (as a once-off charge). When taken with other connection related charges (in excess of \$100), then the costs of transferring a ULLS to a service provider should not exceed the \$46 once of charge.

Ongoing charges per line (\$ per month) RSS/RSU

	ULL network costs in PIE 2 model	Efficient ULL specific costs upfront

Band 1	\$3.74	\$46
Band 2	\$13.88	\$46
Band 3	\$29.34	\$46
Band 4	\$159.96	\$46

1.29 These rates should then be adjusted to reflect:

- The reduction in underlying costs over the next three years due to the efficiency gains from technology improvements.
- Improvements in the scale of the CAN, given service growth (new estate development) on the network and the existence of economies of scale and scope in the network components.
- Operating improvements in specific costs.

1.30 These points are elaborated on later in this submission.

Local Call Resale

1.31 In April 2002, the ACCC issued a report on “Local Call Resale pricing principles and indicative prices” in which the ACCC proposed that the following indicative prices should apply for LCS.

ACCC indicative price for LCS in April 2002

	Residential cents per call (GST inclusive)	Business cents per call (GST inclusive)
Standard LCS call price without LCS discount on line rental	13.81	13.81
Neighbourhood call price without LCS discount on line rental	9.54	8.04

1.32 Application of these prices is likely to result in an average LCS price of 11.58 cents per call (GST exclusive).

1.33 **[Start commercial-in-confidence]**

[End commercial-in-confidence]

1.34 In its Undertaking Telstra has proposed that LCS rates should be set at 14.5 cents per call for the three years from July 2002 through to June 2005. **[Start commercial in confidence]**

- 1.35 **[End commercial in confidence]**
- 1.36 In setting indicative prices for LCS the ACCC should ignore the prices proposed by Telstra in its Undertakings.
- 1.37 In this submission Optus argues that the starting point for the LCS indicative prices should be the ACCC's previous modelling of Telstra's retail-minus avoidable cost methodology. However, we recommend that the ACCC's methodology be adjusted to take account of the average local call prices across all Telstra's retail packages. This will remove some of the incentives for Telstra to discriminate against access seekers in setting its local call prices. Application of this approach is likely to set prices in the range of 11.5 cents per call. Optus is currently examining this issue further and is likely to provide further submissions in this regard.
- 1.38 Optus also presents conservative evidence to suggest that Telstra's TSLRIC costs of providing a local call is likely to be below 11 cents per call. Therefore an LCS price set at this level would not be below cost and would not harm Telstra's legitimate business interests.
- 1.39 If nonetheless the ACCC did set initial prices on the basis of a retail minus approach, this initial rate should at a minimum then be adjusted to reflect efficiency improvements in the network costs of a local call.
- 1.40 These points are elaborated on later in this submission.

2. Starting point for PSTN OTA and ULLS

- 2.1 The ACCC has accepted a TSLRIC pricing methodology for PSTN OTA services and the ULLS. The TSLRIC pricing approach adopted for each service is a hybrid model based on Telstra's historic network architecture and current cost replacement values for network elements.
- 2.2 The form of TSLRIC adopted by the ACCC involves some minimal network optimisation and the ACCC has indicated a preference for TSLRIC models which give "updated asset values and network configuration" (page 14). On this basis, the ACCC must accept that the most up to date network configuration implemented by Telstra is somehow optimal. Optus does not agree.¹
- 2.3 Notwithstanding the above point, it is reasonable that a form of TSLRIC model is an appropriate starting point for setting indicative prices. These are established services with a cost base that can be directly modelled.
- 2.4 The ACCC has previously released indicative prices for PSTN OTA and ULLS based on a model developed initially by n/e/r/a for assessing PSTN OTA prices, but which we understand has been updated and adjusted (particularly the access deficit component) over time. The ACCC has also amended the model to reflect non-optimal but actual nodes for the purposes of setting indicative prices for the ULLS.

¹ Refer to the section of this submission on the PIE 2 model for a fuller discussion on the appropriate application of TSLRIC for pricing access to the ULL and PSTN OTA services.

- 2.5 The costs and prices produced by the n/e/r/a-ACCC model represent the latest informative source of information and have significantly influenced the actual prices paid in the market place. They should therefore represent the benchmark - which the ACCC should be able to improve upon in setting its indicative prices.
- 2.6 As discussed in our previous submission on indicative prices, in undertaking to update the n/e/r/a-ACCC model (or even if a new model is adopted) the ACCC needs to ask itself “what parts of the model need to be updated for optimal forward-looking changes in the network?” Any model should only be updated for “optimal” changes in the network, and even then, only changes that are optimised to provide the regulated service being costed.
- 2.7 Optus believes that a necessary condition for accepting any changes to the n/e/r/a-ACCC model or the acceptance of any alternative models (such as the PIE 2 model) is that it must result in more efficient conditions because of increases in productive and technical efficiency since the n/e/r/a-ACCC model was developed. If the models do not result in a price reduction then the revised or new model should be treated as unreliable.
- 2.8 Price reductions are necessary for consistency with the legislative reasonableness criteria. Price reductions reflect the economically efficient use and operation of the service and the direct costs of providing access to the service. It is consistent with the long-term interests of end users by ensuring that the efficient use of and investment in networks is reflected in the price for the service.
- 2.9 Telstra has recently released a model of the PSTN – the PIE 2 model. This model should be assessed within the framework outlined above to decide whether it should be used to set indicative prices. Also, Optus believes it is not necessary to accept or reject the entire model – it is reasonable to accept elements of any new model that makes improvements on the network architecture, technology, or assumptions. Specifically, it is perfectly reasonable for the ACCC to:
- Accept the network architecture and technology choices of the PIE 2 model within particular geographic bands. For example, the ACCC could accept the use of copper and CMUX technology in some CBD and Metropolitan areas, but amend or adjust the technology in other areas.
 - Reject the access deficit calculations and exclude any contribution from the TSLRIC prices.
 - Adjust the trenching costs and trench sharing assumptions, by considering the historic costs of trenching and using optimal trench sharing arrangements.
 - Adjust the assumptions in the model by using:
 - i) Forward looking efficient operating and maintenance costs rather than Telstra’s operating and maintenance costs.
 - ii) A more appropriate cost of capital.

- iii) Economic depreciation rather than accounting depreciation with an annuity approach to the depreciation profile without any front-loading of returns.
 - iv) Actual taxation costs.
 - v) Economic asset lives with the best available asset prices.
- 2.10 These points are broadly addressed in the final chapter of this submission, but will be addressed in detail in a further submission following a review of Telstra's PIE 2 model. However, Optus believes that the ACCC should not delay in following the advice above (as it sees fit) where it results in improved prices for these essential services. In particular, Telstra has restricted access to its model such that full details have not been available at the point when submissions were due on indicative prices. Telstra should not be allowed to benefit from this regulatory gaming and delay tactic.

3. Pricing of PSTN OTA

- 3.1 The PSTN OTA charge is a charge for call conveyance, and the charge reflects the traffic sensitive costs of the PSTN. The ACCC has in the past taken a "bottom up" modelling approach that consists of specifying the network components of the PSTN based on the required capacity; calculating the direct and indirect costs of those components and applying the traffic related costs to the traffic volumes for each call service to yield a PSTN OTA per minute rate and flag-fall on a geographic basis.
- 3.2 Provision of PSTN OTA by Telstra is fundamental to the supply of domestic long distance, international long distance, fixed to mobile, and mobile to fixed services to end users in Australia and hence competition in the provision of those call services. There is an important relationship between charges for the declared services and the prices charged by acquirers of those declared services to end-users for downstream services such as long distance.
- 3.3 **[Start commercial-in-confidence]**

[End commercial-in-confidence]

- 3.4 A reduction in competition in long distance, fixed to mobile, and international call services that will arise through an increase in PSTN OTA charges is not in the long-term interests of end users. On the other hand, a reduction in the PSTN OTA rate (particularly to exclude the anti-competitive access deficit contribution) is likely to increase competition as competing carriers, such as Optus, can compete on a more even playing field to Telstra.
- 3.5 PSTN OTA rates have fallen over the past few years. However, Optus considers that Telstra's charges are still above cost.
- 3.6 Optus believes that a reasonable indicative starting price for PSTN OTA, on a national weighted average basis, is less than 0.7 cents per call end minute

(CPM) in 2002/03. This is based on a trend in the ACCC published rates for PSTN OTA.²

ACCC model PSTN OTA costs in CPM

Category	1999-2000	2000-01	2001-02
CBD	0.32	0.30	0.26
Metropolitan	0.82	0.75	0.65
Provincial	1.06	0.95	0.82
Rural / remote	2.32	2.08	1.79
National (weighted average)	0.93	0.84	0.72

- 3.7 In addition, the ACCC has in the past added an access deficit contribution to reflect a perceived loss on the non-traffic sensitive customer access network. Optus has not supported this addition and has made separate submissions explaining its opposition to the access deficit contribution.

ACCC rebalancing of ADC in PSTN OTA rates

	Cents per minute
Size of ADC in 2001/02	0.56
Size of ADC in 2000/01	0.69
Size of ADC in 1999/00	0.84

- 3.8 Telstra's capacity to rebalance its tariffs under the retail price control arrangement should mean that the downward trend in the ADC continues – at a sharply accelerated rate. An ADC adjustment factor is discussed further below. However, Optus maintains that the ADC should be excluded from the starting point for the indicative price for PSTN OTA.
- 3.9 If the ACCC decides to amend the access deficit allocated to PSTN OTA, whether that be through recognising that other revenues contribute to the CAN or through recognising a less anticompetitive distribution of the contribution to call ends and minutes, then this should be reflected in an adjustment to the ADC in the indicative starting price for PSTN OTA. For example, a reallocation of the ADC from the current 50:50 to, say 80:20 (minutes - ends)

² Note that the rate for 2002/03 has been interpolated using the 1.3 CPM PSTN OTA rate published by the ACCC using a 3.69-minute call length and a consistent geographic call profile.

would reduce the size of the ADC in 20001/02 to around 0.44 CPM (a reduction of 21%).

Telstra's Undertakings

3.10 In terms of headline rates for the underlying call conveyancing cost it appears that the n/e/r/a-ACCC model and the PIE 2 model produce similar results. However, we note that a headline conveyancing cost of around 0.72 to 0.79 CPM for 2002/03 in the PIE 2 model is significantly different to the projected n/e/r/a-ACCC model rate when matched with Optus' call profile. Headline rates can be misleading. For example, we believe Telstra:

- Assumes that PSTN traffic is lower than the ACCC has previously used, and is falling. Optus believe that PSTN traffic has grown over the recent period and is expected to grow in the future with the continued growth in narrow band dial up Internet (and the delay in take up of broadband).³
- Loads costs into flag-fall rather than per minute charges in the underlying charging schedule. This harms any competitor that may have on average a call profile with shorter call hold times.
- Uses a different call mix and average length to arrive at its per minute rate. Adjusting Telstra's headline rate using the call mix and length used by the ACCC in assessing Telstra's previous Undertaking gives a significantly higher rate.

3.11 Notwithstanding these differences, once Telstra adds its form of access deficit, the disparity between the ACCC and Telstra approach increases.

3.12 **[Start commercial-in-confidence]**

[End commercial-in-confidence]

3.13 Notwithstanding these important differences, it may be that with more appropriate forward looking assumptions (discussed above) and more appropriate PSTN traffic profiles, the unit costs produced by the PIE 2 model may be useful. Optus is not presently in a position to draw a conclusion on this given Telstra's delay in providing access to the PIE 2 model. However, if the ACCC can demonstrate that the conveyance costs are more efficient (that is, lower) then they may be acceptable.

Structure of PSTN OTA charges

3.14 The structure of PSTN OTA charges has an important impact on incentives. Each component of the charge structure should reflect the costs of the provision of that component. If the charges are not structured in this way,

³ This point is discussed further below.

there is likely to be significant inefficient cost recovery of the call and therefore inefficient use of and investment in infrastructure.

- 3.15 In its supporting submission to the ACCC, Telstra contends that the national weighted average PSTN OTA charge based on the prices set out in the Undertaking will be 1.7 cents per call end minute. Whilst this may be the case for a carrier with a call profile that is perfectly aligned to the theoretical average, in practice the application of the proposed charges will result in prices above 1.7 c/min. **[Start commercial-in-confidence]**

[End commercial-in-confidence]

- 3.16 The impact of Telstra's proposed pricing structure is likely to be significant as carriers with shorter call hold times than the average will pay higher PSTN charges. This is likely to put those carriers at a commercial disadvantage to Telstra, which is likely to have hold-times at or above the average level. Such a rate structure is likely to bias the marketing and technical choices of long distance providers in a manner that is contrary to LTIE.
- 3.17 Each component of the charge structure should reflect the costs of the provision of that call component. A failure to relate the actual costs of each call component to the rate structure results in inefficient cost recovery of the call. Optus has not had an opportunity to review Telstra's PIE 2 model, but the disproportionately high flag fall charge proposed by Telstra is, in Optus' view, inconsistent with the underlying costs of call set-up.
- 3.18 For the reasons outlined above, Optus does not consider Telstra's proposed prices to be reasonable and we recommend that the Undertaking be rejected. Further, when the ACCC sets indicative prices for PSTN OTA, Optus recommends that the structure of the prices is set such that on average flagfall represents less than 10% of the costs of a call.

Peak and off-peak charges

- 3.19 A further issue relates to the fact that the proposed charges have not been disaggregated by time of day.
- 3.20 Telecommunications providers traditionally set differential prices during the peak/off peak periods to encourage efficient use of the network. **[Start commercial-in-confidence]**
[End commercial-in-confidence] A fair and reasonable system of interconnect charges should incorporate the tariff gradient that applies to the incumbent's retail charges. Decoupling of the retail and wholesale tariff

gradients increases the ability of Telstra to price squeeze the margins of interconnecting carriers.⁴

- 3.21 Network costs are driven by the network capacity required during the peak periods. No additional network cost is incurred for carrying traffic during off-peak periods. By incentivising greater network usage during off-peak periods, Telstra will drive down call costs.

Optus' view on the access deficit contribution

- 3.22 The issue of the access deficit contribution (ADC) is relevant to the current debate insofar as a proportion of the line costs unrecoverable by Telstra due to retail price controls on basic access are allocated to PSTN OTA access prices.
- 3.23 In Telstra's Undertaking, the unrecovered PSTN CAN costs are calculated using the following formula:
- PSTN CAN costs
 - Plus retail costs attributable to PSTN CAN services
 - Less maximum subscription revenues which could be earned by Telstra
 - Less USO revenue attributable to the PSTN received by Telstra.
- 3.24 These costs are then allocated to the PSTN services.
- 3.25 This section of Optus' submission responds to the ACCC's requests for industry comments on the various issues raised in relation to the ADC in the ACCC's discussion papers "*Model Price Terms and Conditions for PSTN, ULLS and LCS*" and "*Telstra's Undertaking for Domestic PSTN Originating and Terminating Access, Unconditioned Local Loop Service and Local Carriage Service*".
- 3.26 On a general note, Optus has consistently maintained the position that the AD does not actually exist, particularly if a less narrow and more appropriate view is taken of the revenues and profit streams associated with the customer access network.
- 3.27 The access deficit contribution is primarily designed to address a potential funding issue if Telstra faced significant loss of market share in its downstream markets. Net revenues from these services should contribute to the access deficit before PSTN OTA. This is the most economically efficient outcome as it:
- Reduces the distorting effect of the monopoly profits earned by Telstra on local calls (and other monopoly services).
 - Avoids the need to levy an access deficit on PSTN OTA and therefore reduces the distortions associated with that charge.

⁴ If access costs are closer to Telstra's true MC then access seekers can more easily decide to match Telstra's retail tariffs.

- 3.28 Optus conservatively estimates that from the 10.8 billion local calls Telstra supplied at both a wholesale and retail level in the year ended 30 June 2002, Telstra reaped monopoly profits of around \$718 million.
- 3.29 Optus therefore believes that the time has come to recognise that the access deficit is too narrowly defined. It needs to be broadened to consider the net revenues from the range of services that utilise the customer access network. This is particularly important for services such as Telstra's retail linesharing (ADSL). In this case, Telstra is able to share the local loop between POTS and ADSL by using line-sharing arrangements. As such, Telstra derives additional subscription revenue from its CAN by providing ADSL, and not taking this subscription revenue into account would essentially amount to compensating Telstra for not selling ADSL.
- 3.30 Optus believes that the recognition of other revenue sources related to the customer access network obliges the ACCC to reconsider the levying of an access deficit contribution on PSTN OTA charges.
- 3.31 For a more detailed discussion of Optus' views in relation to the ADC, refer to our February 2003 submission to the ACCC entitled "*Access Deficit for Originating Terminating Access (OTA)*".

Subscription revenues

- 3.32 The ACCC has sought industry comment on the appropriateness of the calculation of the retail PSTN CAN revenue from the maximum possible subscription revenue vis-à-vis Telstra's actual subscription revenue.
- 3.33 Optus is strongly of the view that the ACCC must develop model access prices with reference to the maximum subscription revenue that could be earned by Telstra. To the extent that Telstra's retail PSTN CAN revenues determine the size of the ADC, any commercial decisions by Telstra to charge less than the maximum possible subscription amount would translate into higher access charges for access seekers. Such an outcome would clearly be unequitable and contrary to the interests of effective competition. Telstra's must not be given the opportunity to make commercial decisions which allow it to pass on costs to its rivals.
- 3.34 Further, given that distortions are created when prices diverge from costs, inefficiencies will arise when access prices reflect cross-subsidies between basic access and call prices. While the price controls require some degree of cross-subsidisation, any decision by Telstra to go beyond what is required by the price controls is entirely a matter for Telstra – the consequences of which should be borne by Telstra alone. It is entirely inappropriate to require access seekers to fund any of Telstra's commercial decisions that are ultimately distortionary.

Treatment of USO

- 3.35 Optus generally agrees with the approach taken by Telstra in its Undertakings to net its USO revenues off against its PSTN CAN costs for the purposes of calculating the size of the access deficit. USO revenues represent a cash flow to Telstra, and partially offset the costs associated with providing services over the CAN.

3.36 However, we maintain that the cost of supplying telecommunications services in areas where the return does not necessarily justify the investment of network infrastructure is recovered in a competitively neutral manner through the current operation of the USO fund. Given the operation of the current USO fund, additional access deficit contributions recovered through interconnection charges are unnecessary and anti-competitive.

Allocation of ADC between calls and call minutes

3.37 The ACCC has invited industry comment on the appropriate allocation of the ADC between calls and call end minutes. While, as discussed earlier, Optus does not believe that the access deficit exists at all, Optus is of the view that if the ACCC does decide to retain the ADC then it should be allocated to call minutes, as opposed to call ends.

3.38 This matter is discussed in detail in our February 2003 submission to the ACCC, entitled “Access Deficit of PSTN Origination Terminating Access (OTA)”. Optus urges the ACCC to refer to this submission when considering the appropriate treatment of the ADC in the context of indicative prices. To summarise our views in relation to the allocation of the ADC:

- In the absence of reliable elasticity estimates, Telstra’s retail pricing structures are likely to provide the best proxy for a Ramsey efficient allocation;
- Increasing the allocation towards flag-fall will increase the relative cost of short calls. Given the existence of competitive substitutes for short calls, such as SMS, fax and email, this allocation will be disproportionately distortionary and inefficient; and
- A higher allocation of the ADC to calls will reduce the ability of access seekers to compete effectively with Telstra, given the higher sensitivity of consumers to increases in the price of short calls.

3.39 Optus notes that in Telstra’s Undertaking, the unrecovered costs of the CAN are allocated 100% to call ends. For the reasons discussed in Optus’ submission in relation to the ADC, this allocation is inappropriate and should not be accepted by the ACCC.

4. Pricing of ULLS

4.1 There are two components to ULLS charges: the network or line related costs; and the ULLS specific costs related to the transfer of a line to an access seeker. In both instances it is essential that charges be based on the forward-looking TSLRIC of supply.

4.2 In respect of the network related costs, the current charges paid by Optus are consistent with those determined by the ACCC from the n/e/r/a-ACCC model. Optus has previously put the case to the ACCC that the cost estimates underlying these charges are sub-optimal. In particular, we do not believe that the n/e/r/a model as adjusted by the ACCC reflects an optimal network design as it was adjusted to take into account Telstra’s actual distances and as such

costs are inflated. Further, the costs and charges associated with services in Band 2 appear to be unduly high when compared to those in Bands 3 and 4.

- 4.3 These points appear to have been borne out from an examination of the PIE 2 model. It appears that the PIE 2 model produces significantly lower network costs than those in the n/e/r/a-ACCC model. The ACCC should not ignore this fact when setting ULLS charges. Optus considers that the network component in the ULLS charges should be set to reflect the changes produced by the PIE 2 model, albeit adjusted to reflect efficient cost principles.
- 4.4 With respect to the ULLS specific charges, Optus believes that these charges should be based on the previous cost modelling undertaken by the ACCC. This would set the ULLS specific charge at a once-off cost of \$46. The charges proposed by Telstra in its Undertaking are unrealistically high. Whilst we have not seen the detailed cost model to support these charges, the information available to date suggests that the costs are grossly inefficient and that there has been significant double counting of costs across related activities.

TSLRIC of ULLS is based on forward-looking network design

- 4.5 The ACCC's current procedure for estimating ULLS costs adjusts the original n/e/r/a cost model from Telstra's forward-looking network design to Telstra's current actual network layout. This is not appropriate for estimating the efficient costs of ULLS. The TSLRIC of ULLS should be based on Telstra's forward-looking network design, not its current actual network design.
- 4.6 TSLRIC is based on the principle of recovery of economic costs. Economic costs are *forward*-looking costs incurred in providing the service including operating expenses and a normal return on efficiently deployed capital into the future. As discussed in the ACCC's Access Pricing Principles:

“TSLRIC is based on forward-looking costs. These are the ongoing costs of providing the service into the future using the most efficient means possible and commercially available.”⁵

- 4.7 Importantly, TSLRIC is based on the concept of a *Long Run* period of cost recovery, where all of a firm's current costs, including sunk investment, are variable or *avoidable*.⁶ This means, in the context of estimating efficient ULLS costs, Telstra's current network design is variable or avoidable and is not strictly relevant in estimating ULLS costs. It is an efficiently constructed forward-looking network design that is appropriate in measuring the TSLRIC of ULLS costs. The model used in assessing Telstra's 1999 Access Undertaking may more appropriately represent this, though we recognise changes and potentially improvements in the PIE 2 model.
- 4.8 Telstra's current network design, which represents Telstra's historical practice, is not a forward-looking measure of ULLS costs. Rather, basing ULLS costs

⁵ See ACCC Access Pricing Principles, Telecommunications, a guide, 1997, at page 29.

⁶ See ACCC Access Pricing Principles, Telecommunications, a guide, 1997, at pg 37.

on Telstra's current network design attempts to answer the economically irrelevant question: What would be the cost today to Telstra of providing ULLS if it rolled-out a network based on its current historical design? Since Telstra would not roll-out such a network, the answer to this question, and the current modelling approach of the ACCC, is not an economically correct way of measuring the TSLRIC of ULLS.

- 4.9 This issue is of importance. Under the n/e/r/a model used to assess Telstra's PSTN Undertaking, Telstra pushed the Remote Units and Switching Stages (RIMs, IRIMs, RSS/RSUs) closer to the customer to provision the network to provide DSL services to customers. This produced a higher cost for voice telephony than a network optimised to simply provide voice service. Now, when estimating efficient ULLS costs, Telstra proposes to push the Remote Units and Switching Stage further away from the customer as reflected by its current actual network architecture. This produces a higher cost for ULLS than if Telstra's forward-looking network design was used. Hence in both instances Telstra reduces the benefits, through higher network costs, of a network that is partially designed and optimised to provide other services.
- 4.10 It is appropriate the *same* network design is used to estimate the cost for both voice and ULLS. Otherwise economies of scale and scope are not appropriately reflected in the model, and in total, there will be an over-recovery of total costs in the prices charged for ULLS and voice services. In particular, Telstra receives a higher price for the ULLS service than would be incurred by the company in providing ULLS based on a forward-looking network design. In addition, Telstra is currently receiving a higher price for voice products based on a forward design, notwithstanding that a cheaper network could be constructed if it was not optimally configured to also supply ULLS services.
- 4.11 Such an approach is consistent with the Federal Communications Commission's (FCC) First Report and Order 1996, and subsequent implementation of local loop unbundling charges, uses TELRIC. This standard bases network design, and estimates element costs, on a forward-looking basis that optimises all deployable equipment below the local exchange site. ULLS costs are based on this optimised network design. It is appropriate that the ACCC use the same modelling standard in estimating the TSLRIC of ULLS. This would also be consistent with the ACCC's previous method for modelling PSTN costs. This is because TSLRIC measures *forward-looking* economic costs of efficient network design, as demonstrated by current best-in-use practice.⁷ TSLRIC does not measure current costs via the design of the network as it is today, but rather as it would look today if it rolled-out assuming all current sunk infrastructure needs to be replaced⁸.

Telstra's Undertaking

- 4.12 TSLRIC is a forward-looking cost estimate reflecting the network design of an efficiently configured operator. Actual current network design is irrelevant to

⁷ Optus supports the ACCC not permitting Telstra's claimed recovery of Network Termination Devices (NTD's) in the cost of ULLS. This is because NTD deployment is not necessary and is not best in use practice.

⁸ The local exchange site locations are taken as given under TSLRIC as implemented by the FCC.

the calculation of TSLRIC prices. Hence, trench lengths and IRIM/RSS/RSU distances as reflected in the ACCC's NERA cost model used to assess Telstra's 1999 PSTN Access Undertaking might be more appropriate to determine ULLS prices. This is because this network model represents the forward-looking network design upon which TSLRIC prices are based. It represents the forward-looking costs of providing ULLS. Hence there is no need to adjust the NERA model to reflect Telstra's current actual distances.

- 4.13 Whilst we note the ACCC's decision to reject this view in its Final Report on the Pricing of unconditioned local loop services released in March 2002, we observe that the ULLS charges in Band 2 are comparatively high relative to the other Bands in the ACCC's cost model. Whilst trench construction costs may be higher in Band 2 verses Band 3 and 4, the trench sharing in the distribution network will be considerably higher in Band 2 compared to Band 3 and 4. Band 2 approximately corresponds to metropolitan Australia where, under the ACCC's current cost model, both Foxtel and Optus broadband cables will be in the same trench as the Telstra copper cables.
- 4.14 The PIE 2 model provides significantly lower network cost estimates than the n/e/r/a-ACCC model. It is not clear what the differences are in the original n/e/r/a model and the PIE 2 model. For example, the distances from the customer to the IRIM/RSS/RSU as reflected in the original n/e/r/a model appear to be the appropriate basis upon which ULLS costs should be measured. However, Telstra claims the PIE 2 is more representative, and the distances reflect Telstra's current best-in use network design, and reflects the long-run costs Telstra will incur into the future in providing ULLS to access seekers.⁹
- 4.15 To the extent that it is a current cost measure of the efficient costs incurred in providing ULLS to access seekers, then this is likely to be the appropriate measure of the TSLRIC of ULLS. With modifications to optimise the assumptions in the model, the PIE 2 results may represent an appropriate starting point for network costs.¹⁰ Indeed, setting a price above this would not be consistent with the direct costs of providing the service.
- 4.16 Optus would need access to the PIE 2 model before forming a definitive view on Telstra's claim. The table below highlights the dramatic change in costs under the PIE 2 model.

TSLRIC for ULLS (connection to RSS/RSU) not including specific costs

	ACCC 2001/02	Telstra Undertaking 2002/03*	Telstra 2000/01	[Start commercial- in- confidence] End commercial-
--	-----------------	------------------------------------	--------------------	---

⁹ Telstra's current actual costs in providing ULLS are below this level due to its sunk infrastructure. These current costs will trend upwards to its forward-looking costs as Telstra replaces its current network with its forward-looking network layout.

¹⁰ Note that these will need to feed into rebalancing and access deficit calculations for PSTN OTA.

				in- confidence]
Band 1	11	3.74	22.7	[Start commercial- in- confidence]
Band 2	33	13.88	47.7	
Band 3	38	29.34	63.6	[End commercial- in- confidence]
Band 4	56	159.96	82.4	

* Telstra indicate these do not include network costs

[End commercial-in-confidence] [End commercial-in-confidence]

- 4.17 In summary, the ACCC should consider using the PIE 2 model to the extent that it provides a more optimised price for ULLS in each geographic band. Certainly, the original n/e/r/a model provides a more accurate representation of the network (though not with best in use technology) than the latest n/e/r/a-ACCC model.

ACCC's ULLS costs in Band 2 appear relatively high

- 4.18 The ULLS costs provided by the ACCC in March 2002 indicate that prices in Band 2 are comparatively high relative to the other bands in the ACCC's cost model. Whilst trench construction costs may be higher in Band 2 versus Band 3 and 4, the trench sharing in the distribution network will be considerably higher in Band 2 compared to Band 3 and 4. Band 2 approximately corresponds to metropolitan Australia where, under the ACCC's current cost model, both Foxtel and Optus broadband cables will be in the same trench as the Telstra copper cables. Under the ACCC's current cost allocation principles, these three networks share trench costs equally.
- 4.19 Hence total trench costs borne by Telstra copper cables are reduced by 66 % due to this sharing with other companies. It would be expected that this higher level of trench sharing in the distribution network in Band 2, compared to Band 3 and 4, would lead to lower Band 2 ULLS costs.
- 4.20 It is difficult for Optus to more meaningfully further comment on the charges in Band 2 without knowing the specific cable distances and trench sharing assumptions used by the ACCC and Telstra in their respective models. The ACCC should make this data more transparently available in this Undertaking process to allow for more informed debate. Nevertheless, we believe that the network costs produced by the PIE 2 model appear to better reflect the cost relativities between Band 1, 3, and 4 relative to Band 2.

ULLS access prices should be not be averaged across bands

- 4.21 The ACCC has determined that ULLS prices should be based on a geographically de-averaged basis. Optus strongly supports this view.

- 4.22 Whilst Telstra previously supported de-averaged prices, in its latest Undertaking the ULLS access prices for Bands 2, 3 and 4 reflect an average over each of the bands. This approach is rationalised by Telstra on the grounds that de-averaging provides incentives for access seekers to acquire ULLS in low cost geographic areas, but provides few incentives to acquire ULLS in high cost areas.
- 4.23 Telstra argues that this reduces its ability to recover its costs of investment in the PSTN and consequently increasing the level of unrecovered PSTN CAN costs. This specious view ignores the fact that the so-called access deficit is already fully recovered from PSTN OTA charges and is inconsistent with Telstra's long held concerns with the potential for cream skimming. The incentives for cream skimming would be increased under averaging.
- 4.24 There are numerous strong arguments against averaging that have been discussed at some length in earlier regulatory forums. To reiterate some of the themes that were unanimously agreed upon¹¹, averaging was recognised to be likely to bring the following adverse effects:
- The distortion of investment incentives. In particular, Telstra's proposed approach would result in over-investment in Band 2 areas – the most frequently used band that will enhance the size of overall distortions.
 - Use of inefficient technologies for delivering data services in low and high cost areas. The use of averaging to encourage uptake of ULLS in high cost areas may incentivise the use of ULLS in favour of more appropriate and efficient technologies for service delivery in high cost areas. In particular, averaging could detrimental impact on the rollout of innovative satellite and wireless technologies. Similarly, setting ULLS prices above cost in low cost areas may promote the use of less economically efficient technologies in those areas. In other words, build/buy decisions in all bands will be distorted.
 - The interests of access seekers and end users will be disproportionately harmed, as access prices in the most commonly used band, Band 2, will be increased.
 - A general pricing structure - which is very unlikely to stimulate rollout of competitive broadband, which is a key national policy priority.
[Start commercial-in-confidence] **[End commercial-in-confidence]**
 - Competitive neutrality would be breached as averaging would give Telstra a clear cost advantage over access seekers for delivery of data services to end users in Band 2 areas. This is a very serious problem even when ULLS prices are based on the average cost in Band 2 rather than the short run marginal cost to Telstra of providing the service. Averaging would worsen this problem to such an extent that it is unlikely that access seekers would be able to win any data customers from Telstra using the ULLS.

¹¹ See ACCC Pricing of unconditioned local loop services (ULLS): Final Report, March 2002.

- 4.25 It is important to elaborate on this last point to ensure that it is fully understood by the ACCC. Without averaging of ULLS prices access seekers face a short run marginal cost of providing data services over the ULLS in the relevant band equal to Telstra's long run average cost in that band (embodied in the relevant estimate of monthly TSLRIC+). However, economics tells us that Telstra will rationally base its profit maximising price for data services on the intersection of short run marginal cost and short run marginal revenues of additional sales. If demand for data services is price elastic it is quite possible that this may result in Telstra charging itself an implicit access price that is less than the TSLRIC+ of the ULLS in Band 2. Assuming access seekers had the same non-access costs as Telstra they could only match by implicitly not recovering the full cost of their TSLRIC+ based access price - which is not a commercially feasible option. This is a fundamental problem associated with basing access prices on long run average costs when these are substantially higher than the short run marginal cost of the incumbent.
- 4.26 Clearly, averaging ULLS prices will increase prices in the region with the greatest uptake of data services (Band 2) and substantially worsen the above problem by effectively widening the gap between access seekers short run marginal cost (based on access prices) and Telstra's short run marginal cost (based on true short run marginal costs).
- 4.27 **[Start commercial-in-confidence]**
[End commercial-in-confidence]

Empirical comparison of competing technologies

- 4.28 The distortion created by averaging ULLS prices and the risk of inefficient overbuild (by-pass) is real. The expectations for demand in voice and broadband markets means that fixed and wireless technologies are increasingly being utilised around the world in order to bypass the incumbent's fixed networks. The likely technologies include:
- Hybrid fibre coaxial (HFC) cable.
 - Fixed wireless networks including MMDS, LMDS and satellite.
 - Mobile based networks including 2.5G (or General Packet Radio Services) and 3G networks.
- 4.29 The choice of technology and its cost effectiveness will depend on a number of factors including customer density, topography and the nature of the demand for voice and broadband services. For example, MMDS requires line of sight service to provide high-speed services but involves lower investment costs per subscriber than DSL and HFC cable.
- 4.30 In metropolitan areas the capital investment per subscriber for 3G, HFC cable and wireless networks are beginning to compare favourably to copper loops. Over time as the underlying asset prices to develop these technologies fall, the economics improves, as does the likelihood that competitors can disrupt the dominance of the copper local loop.
- 4.31 This means that if ULLS prices are set too high in Band 2 there is a real threat that access seekers using one of these technologies will inefficiently bypass

the ULL. The ACCC should be very concerned about this issue not least because the denial of ULL access in CBD areas (effectively setting an infinite price for ULLS) in the 1990s resulted in substantial investment in alternative technologies by Optus and other carriers that would unlikely have occurred if ULL access was available at reasonable prices. In addition, other commentators have highlighted the prospect of alternative technologies being used to inefficiently bypass the ULL. For example, Paul Budde states:

Broadband wireless could be a real threat to established fixed operators. It enables competitors to enter their most lucrative markets and target their best customers quickly and with little initial outlay. However, the reality of the early 00s is that fixed data services for business users have seen enormous drops in prices. This is making it very difficult for wireless broadband to compete.¹²

- 4.32 Clearly, if the ‘fall in fixed broadband prices’ referred to by Mr Budde in Band 2 were to be reversed by a move to averaging ULLS prices then the probability of access seekers bypassing the ULL in Band 2 (and band 1) would increase significantly. This would almost certainly be inefficient given that the ULL already exists and the marginal cost to society from its use is very low (and much lower than TSLRIC+).
- 4.33 Even today we might expect averaging of ULLS access prices to distort the signals in HFC cable deployment. The table below shows the capital cost of the copper per subscriber by area (and an average of Bands 2, 3, and 4) determined by n/e/r/a in 1999 in its report to the ACCC. The table also includes an Optus’ estimate of the investment cost per subscriber of rolling out a ubiquitous (assumes 100% penetration) HFC cable in a metropolitan area.
- 4.34 **[Start commercial-in-confidence] [End commercial-in-confidence]**

Empirical comparison of capital costs

	Investment cost per customer
CBD	\$448
Metropolitan	\$1,325
Provincial	\$1,031
Rural and remote	\$2,226
Average (metropolitan, provincial, and rural)	\$1,527
HFC	[Start commercial-in-confidence] [End commercial-in-confidence]

¹² Paul Budde, Global Wireless Broadband Technologies, 19 April 2003. Available from www.budde.com.au.

- 4.35 In regional areas and beyond, the ULLS is unlikely to be cost effective, and alternative technologies should be encouraged. These would include satellite and wireless services (both fixed and mobile). Averaged prices would have the effect of reducing facilities-based competition and therefore hindering the efficient roll-out of these alternative technologies.

Pricing of ULLS specific costs

- 4.36 In considering ULLS related costs, the ACCC should recognise that the service essentially consists of the provision by Telstra to access seekers of a natural monopoly component of their infrastructure. Ubiquitous duplication of the CAN is neither socially nor economically desirable.
- 4.37 Further, uptake of ULLS services is associated with the provision of new and innovative data services. It enhances competition in the provision of local carriage services in the sense that it enables access seekers to perform their own switching and offer local carriage services.
- 4.38 It is therefore very important that ULLS access prices are not set prohibitively high. To this end, the ACCC should scrupulously adhere to the objective of basing access prices on the costs that would be incurred by a forward looking, fully efficient ULLS access provider. Little consideration should be given to Telstra's historic and current costs in providing ULLS services.
- 4.39 It is worth noting here that at current levels of ULLS pricing, it is not viable to provide a single line voice service using ULLS. Optus can currently only provide it in the form of 4 to 8 line VoDSL. In fact, this begs the question as to why access seekers are not able to provide single voice service using ULLS while Telstra on the other hand almost exclusively uses ULLS to provide single line voice services.
- 4.40 The ULLS Specific Costs are made up of three different categories: capital costs, O&M costs and indirect costs. In combination, they represent the additional IT system and management costs to provide the ULLS. In addition to these costs, access seekers are charged a variety of additional costs, most notably a connection charge.
- 4.41 This section of Optus' submission begins by examining each of the costs components that make up the ULLS specific charges. It then goes on to explain why the ULLS specific charges should be recovered as a once-off upfront charge. Next, Optus raises concerns over the potential for some of the costs to be double counted and recommends greater transparency in the way Telstra sets charges. Finally, the disadvantages associated with using an averaging approach over the bands are reiterated.

Capital costs

- 4.42 The capital cost component of the ULLS specific costs seek to quantify the underlying value of the assets associated with the delivery of ULLS services. Telstra claims that the relevant capital costs are made up of the following categories:

- The labour costs of developing the ULL Carrier Interface System (ULLCIS);
 - The associated development processing costs incurred during the IT systems development process; and
 - Accommodation and internal communications of IT staff.
- 4.43 As alluded to earlier, for the purposes of this analysis the relevant considerations relate to the forward looking efficient costs of building assets to delivery fully efficient ULLS services - not the historic costs. It is clear to Optus, and indeed the ACCC as highlighted in previous reports on the topic, that Telstra's historic costs significantly diverge from the efficient capital costs.
- 4.44 In particular, the expenditure Telstra is required to incur to supply ULLS is the provision of a Gateway between Telstra and access seekers. This Gateway is the communication interface between the access provider and access seekers that enables the supply of ULLS, and performs functions such as pre-ordering availability, service qualification and ordering.
- 4.45 To build a current gateway to the ACIF specifications the total cost to Telstra would be no greater than \$300,000. This is because, in part, Telstra can leverage off its existing operation and support systems (OSS) to support ULLS to current ACIF specifications. For example, the ULLS Gateway should feed into Telstra's internal service qualification (SQ) engine. This existing SQ system is used by Telstra to qualify all services it supplies to customers. Hence, there is no need to build an extra SQ engine to supply access seekers with ULLS. Likewise with respect to Ordering, Telstra's ULLS Gateway should feed into its existing ordering systems used internally by Telstra to test for the availability, ordering and supply of new services to customers.
- 4.46 Optus has had to build a Gateway to communicate with Telstra's existing ULLS Gateway. The costs should be approximately the same for both parties concerning the ULLS specific costs incurred to provide ULLS service. This is because the Gateway expenditures provide equivalent functionality and therefore should have cost approximately the same amount to build. Optus has spent less than \$300,000 to provide its own Gateway for ULLS service, hence we would expect Telstra's own ULLS Gateway expenditures to be of a similar magnitude.
- 4.47 In addition, Data CLECs (Competitive Local Exchange Carriers) in the United States on average spend approximately \$300,000 to build Gateway systems to connect into incumbent carrier OSS (Operation and Support Systems). Hence, Telstra's ULLS specific costs, if efficiently incurred, should be no greater than \$300,000.
- 4.48 In summary, Optus believes a reasonable estimate of the total ULLS specific capital costs incurred by Telstra is \$300,000.

Operations and maintenance costs

- 4.49 For the purposes of Telstra's Undertaking, Telstra identifies three separate categories that fall under operations and maintenance category, as follows:

- Operation and maintenance of IT systems
- ULLS connection group
- Product management

4.50 Each of these sub-categories will now be discussed in turn.

Operation and maintenance of IT systems

4.51 Under the PIE 2 model, this category comprises the following groups of costs:

- Mainframe and mid-range production processing
- Maintenance labour
- Maintenance processing
- ULLCIS processing.

4.52 As Optus has previously argued, Mid Frame and Main frame processing costs are not necessarily and unavoidably incurred in the provision of ULLS. The inclusion of these systems in access prices would reflect an inefficiently high cost structure for the retail provision of services utilising ULLS.

4.53 Mainframes are used for voluminous input-output requirements, where there are billions of records, such as for billing. Given the current range of demand forecasts for ULLS transactions, mainframe and mid frame processing requirements are clearly unnecessary. The efficient provision of ULLS requires only personal computers with a high end NT server as the gateway.

4.54 Even if the demand is more than double the estimated demand (which is consistent with overseas experience), the number of transactions required to be processed by the ULLS system would still not require the capacity of a mainframe or mid frame system. Hence the ACCC should treat all costs associated with Midframe and Mainframe processing as 100% avoidable as they do not represent the adoption of efficient best in use technology.

4.55 Further, the ACCC needs to clarify that any maintenance processing and labour costs that are attributable to Midframe and Mainframe processing are omitted from the costing model. These costs should be excluded when the ACCC sets its indicative prices for ULLS.

ULLS connection group

4.56 The ULLS connection group handles inquiries from access seekers, processes ULLS orders and undertakes related tasks.

4.57 As discussed below, Optus is concerned that there is considerable potential for ULLS charges borne by access seekers to reflect duplication, and therefore over-recovery, in the allocation of costs to specific cost categories.

4.58 Optus recommends that the ACCC pay close attention to this issue when assessing the appropriate ULLS-specific charges.

- 4.59 If assessment of the costs shows that there a portion of the costs relating to the connection groups should be allocated to the monthly ongoing fee, then the ACCC should vigorously comply with the Greenfields approach. In particular, the costings should be based upon an efficiently operating and structured connection group. Staffing levels and remuneration should be appropriate for the tasks performed by the group. Costs relating to physical connection or service qualification inquiries should not be included in this category, as these costs are amply accounted for through other charges. In fact, last year Telstra made significant improvements to the level of automation in ULLCIS, for example automatic SQ were introduced. The result of these automated improvements is a reduction in the number of, and skill level of, staff required in the ULLS connection group.

Product management

- 4.60 This category provides for two FTE product managers to manage the sales of the product. This cost category should not be reflected in access prices. Any activities relating to the sales of ULLS services should be reflected in the costs associated with the connection group. This group handles inquiries from access seekers, processes ULLS order and undertakes related tasks. Any sales related costs over and above those performed by the connection group should be considered a commercial activity undertaken by Telstra to enhance its profitability. It is inappropriate to require access seekers to pay for these functions.
- 4.61 In any case, given that there is a limited market for ULLS and the fact that access seekers sought access to this service via declaration it is unlikely that Telstra would undertake any sales and marketing for the ULLS product. Therefore, Telstra should not be allowed to attribute any indirect sales and marketing costs to the ULLS.
- 4.62 Optus is not aware of any Telstra sales related activity that has been directed at encouraging ULLS take up. This sales activity is obviously different to retail sales activity aimed at DSL take up which should not be attributed to the cost of ULLS.

Indirect costs

- 4.63 For the purposes of Telstra's Undertaking, the indirect costs embody two separate components: indirect O&M costs and indirect capital costs.
- 4.64 The Undertaking describes the indirect O&M costs as the costs incurred by the corporate centre business unit, while the indirect capital costs include items such as land and buildings as incurred by the corporate centre business unit.
- 4.65 In Telstra's Undertaking, it appears that the indirect O&M costs are allocated to ULLS on the basis of the level of direct O&M costs associated with ULLS. Likewise, the indirect capital costs are allocated to ULLS in proportion to the direct capital costs associated with ULLS.
- 4.66 Optus submits that this approach adopted by Telstra is entirely inappropriate. It is highly likely that the proportion of total direct costs attributable to ULLS diverges significantly from the proportion of total indirect costs attributable to

ULLS. This is because the ULLS has a reasonably high capital cost base relative to staffing levels and the contribution of the service to Telstra's overall revenues.

- 4.67 In practice, the only additional staffing costs would be the costs of providing ULLS specific training. This would be minimal, given that most of the field staff who are already doing PSTN and ADSL work will also be carrying out ULLS provisioning.
- 4.68 Optus believes that staff numbers provide a far better basis for estimating the appropriate proportion of indirect costs attributable to ULLS. This is because, by and large, the indirect costs are driven by the size of a company's workforce rather than the value of capital embodied in the firm. Given that staff numbers associated with ULLS is limited, the indirect costs allocated to the service should be heavily discounted, if not approaching zero.
- 4.69 Alternatively, the corporate centre costs could be allocated on the basis of an examination of the activities of staff included in Telstra's corporate area. This is likely to demonstrate that little or no management time is devoted to supporting the ULLS. On the contrary a primary task of Telstra's corporate Regulatory team is to maintain Telstra's monopoly and to discourage take up access services such as ULLS in favour of Telstra's wholesale products. Accordingly, it is not appropriate to include the costs of such a group in access price charges required to be paid by access seekers for Telstra's wholesale inputs.

Recovery of ULLS specific costs on a per month basis

Telstra proposes to recover its charges relating to ULLS through a combination of ongoing monthly charges and once-off upfront charges. The Undertaking sets out that the ULLS network charges and the ULLS specific charges will be charged on a monthly basis. In addition, while not specified in the Undertaking, it is likely the upfront once-off charges will continue. **[Start commercial-in-confidence]**

[End commercial-in-confidence]

- 4.70 While Optus agrees that it is appropriate for the network costs to be charged on an ongoing basis, Optus believes that given all the other charges (that is, the ULLS specific costs plus the one-off charges displayed in the table above) relate to connection to the ULLS service, these costs should be recovered as once-off charges at the time the costs are caused.
- 4.71 Further, given that Telstra's systems for ULLS are fully automated and that the ULL Connection group charges are also recovered by Telstra via Operation and Maintenance costs, in the table above, there should be no charge for items other than the first and the last. This appears to be a clear case of double counting for Telstra's costs.
- 4.72 There are a number of advantages associated with this approach. Firstly, this approach will adhere to the principle of cost causation. Application of cost causation is deemed to be beneficial insofar as it strengthens price signals,

thereby promoting efficient use of and investment in the infrastructure by which the listed service under consideration is provided.

- 4.73 Second, charging connection related costs as and when they occur would enable the correct level of recovery by Telstra from each service offered. If charged on an ongoing basis, services that are in operation for a longer than average timeframe will pay in excess of their fair share of costs, while services in operation for a shorter than average period of time will fail to pay the full extent of the costs it caused.
- 4.74 Finally, charging what are essentially fixed costs on a monthly basis further increases access seekers' short run marginal costs of supplying services over the ULL above Telstra's short run marginal cost. As previously discussed, this limits the ability of access seekers to price discriminate their services amongst final customers in the same manner that Telstra can.
- 4.75 A further possible advantage of taking this approach may include a reduction in administrative costs and complexities.

Double counting of costs

- 4.76 Optus is concerned that Telstra's costings of the ULLS specific charges may contain duplication amongst the various cost components. As such, Optus submits that greater transparency is needed as to how the costs are derived. While access to the PIE 2 model will elucidate the costings to some extent, there are still costs faced by access seekers that will not be included in the PIE 2 model. **[Start commercial-in-confidence]**

[End commercial-in-confidence]

Similar issues may exist in relation to double counting between charges for service qualification inquiry and the ULLS specific charges.

- 4.77 Optus would encourage the ACCC to take a very disciplined approach in its analysis to ensuring that costs are not over-recovered through duplication. It is very important that the ACCC's decisions relating to the reflection of costs in access charges are informed by a very clear understanding of the individual cost components and how these costs are allocated to individual cost categories.

ULLS demand forecasts

- 4.78 The ULLS specific costs per SIO are very sensitive to ULLS demand forecasts. For this reason, it is important that very careful consideration is given by the ACCC to deriving robust forecasts for future demand growth.
- 4.79 **[Start commercial-in-confidence]**

[End commercial-in-confidence]

4.80 Similarly, a recent report from Credit Suisse First Boston Equity Research describes broadband consumer demand growth in 2003 as being “significantly better than expected”. They attribute the penetration gains to “word of mouth, competitor experience, and more promotions stimulate the market”, and assert that they expect that demand for high-speed data will remain strong for at least the next 12 – 24 months “owing to relatively low penetrations, continued opportunities to convert second-line customers, upside from small business, and the growing role of price elasticity”¹³.

4.81 **[Start commercial-in-confidence]**

[End commercial-in-confidence]

4.82 There are a number of factors that will give rise to increased ULLS demand, driven by DSL, in the near future. Optus believes that consumer demand for DSL is being “pent up” and will translate to an upsurge in connections once prices come down. This assumption is based on observations of DSL uptake internationally. In 2000, Japan’s DSL prices were amongst the highest in the world. Regulatory intervention then induced a large price reduction. Largely as a consequence of the price reductions, 2002 saw a 270% growth in DSL lines¹⁴. This growth rate is well above that seen in any other jurisdiction, indicating that this growth is above a trend line and is likely to have reflected delayed uptake as consumers waited for lower prices.

4.83 In fact, Telstra alone has committed to a target of one million subscribers to be using its broadband network by 2005.¹⁵

4.84 Indeed, it is well evidenced that DSL demand is closely correlated with prices. Evidence has been presented in previous Optus’ submission showing that the take-up of DSL services is highly responsive to the retail price of those services. More recent evidence confirms this stance. In particular, UK based Point Topic shows that countries with the highest rate of broadband penetration, including Taiwan, South Korea and Japan, tend to have the lowest DSL retail prices¹⁶.

4.85 Further, Optus expects DSL demand to rise rapidly in response to the following:

- The emergence of innovative service bundling involving DSL
- The emergence of line/ spectrum sharing
- Continuing investment in infrastructure by service providers
- Greater consumer awareness of the DSL service

¹³ Sector Review from Credit Suisse First Boston, entitled “The Broadband Battle 2003: A Crossroads for High Speed Data”, April 2003.

¹⁴ http://www.isp-planet.com/research/2003/dsl_030317.html

¹⁵ Telstra media release titled “Telstra passes 200,000 broadband subscriber milestone”, 20 September 2002

¹⁶ <http://www.point-topic.com/cgi-bin/download.asp?file=DSLAnalysis\DWD+7+Analysis+piece.htm>

- Recent and ongoing DSL quality improvements.

4.86 **[Start commercial-in-confidence]**

[End commercial-in-confidence].

4.87 In relation to forecasting techniques, Optus reiterates its previous view that ISDN up-take is an inappropriate proxy for DSL growth, and strongly recommends that the ACCC refrain from using this approach. Reasons for this include:

- ISDN was initially rolled out as a Telstra proprietary product thus limiting its flexibility and integration with competitor services;
- ISDN is subject to monopoly supply by Telstra;
- DSL faces different costs drivers than ISDN;
- DSL is a superior technology to ISDN, and therefore will have higher up-take than ISDN.
- DSL will both replace ISDN and promote further growth in data markets (both a substitution of demand and an increase in demand).

4.88 Optus recommends that in forecasting ULLS demand, regard be given to DSL demand as well as local calls and basic access. The rationale behind this approach is that ULLS prices are a key determinant of the level of competition in retail DSL markets and retail local telephony services.

4.89 There is a strong case to argue that the fixed portion of ULL specific costs should be borne by all consumers of broadband provided over the CAN because all consumers benefit from competition – whether or not access seekers or Telstra supplies them. This would suggest that the appropriate denominator would include:

- Current and forecast broadband customers served by access seekers over the ULL
- Current and forecast broadband customers served by Telstra over the CAN (including DSL and ISDN customers).

4.90 If this approach were implemented then Telstra's broadband customers would be forced to make an equal contribution to the fixed costs of establishing a competitive broadband market as do access seeker's customers. This would promote competitive neutrality, would be in the long-term interests of end users and consistent with the legitimate business interests of Telstra. Precisely this approach has been taken in the recovery of the fixed costs of systems necessary for enabling retail competition in the electricity sector. Of course, the variable costs switching should fall on those customers whose actions directly cause the costs of switching to be incurred.

4.91 Further, the correct approach to forecasting is to use efficient ULLS prices that are assumed to continuously fall over the forthcoming 10-year period. As discussed earlier, price is a key driver for DSL demand, and the commercial and technical realities are such that retail prices will fall in the future.

Project life

- 4.92 The period of time that is deemed to comprise the useful life of the ULLS-specific IT systems (ULLCIS) will have a large bearing on the overall access charges faced by access seekers for ULLS. Optus believes the ACCC should adopt a useful life of 10-years for the following reasons:
- The ULLCIS operates much like a ‘back office’ system. Such systems tend to have a useful life of around ten years. These systems tend to be kept working in the “background” with minimal need for substantial upgrades or maintenance. Operators generally prefer to keep these types of systems “ticking over”, rather than performing major changes on them.
 - The functionality of the ULLCIS is governed by ACIF codes, and any upgrade to the system need only comply with these codes. Hence, there will be no benefit, either for Telstra or access seekers, from upgrading the ULLCIS in such a short time. It is also unlikely that there will be changes made to the required functionality of the system, as governed by the ACIF, given that consensus regarding the current ACIF codes took industry 2.5 years to develop.
 - It is unlikely that the number of transactions that the system will be required to process will exceed the system requirements. At most, Optus would estimate the total number of transaction that the IT system will be required to process is 800,000 to 900,000 per year.
- 4.93 Other than the ACIF codes, the only other driver of change to the ULLS-specific IT systems would result from changes to Telstra’s internal platforms and systems with which it interfaces. If this arises the costs of these changes should be borne solely by Telstra given that it is an ongoing cost of Telstra specific IT systems.

5. Adjustment path for PSTN OTA and ULLS

- 5.1 We note that Telstra has indicated that it believes that indicative prices should be set for one year, at the beginning of each year, and apparently updated annually. It considers that the most up to date information is appropriate for setting prices in this framework.
- 5.2 Telstra’s approach is an attempt to have the best of all possible worlds. For example, Telstra effectively proposes the removal of any volume risk associated with its services by updating output variables annually, however, Telstra does not propose to reduce its asset beta used in the WACC calculation accordingly. In fact, if the ACCC use actual traffic, it would necessarily need to resolve the inconsistency between setting prices on actual volumes and adopting any asset and equity betas above zero.
- 5.3 Similarly, where historic costs are higher than forward-looking costs Telstra adopts historic costs in its cost modelling and vice versa. For example, Telstra adopts an historic approach to optimising switch placement but a forward looking approach to costing trenching costs in new estates (that is, even though Telstra does not have to pay for new estate trenching it includes these

assets at the full cost of retrenching). Such approaches ensure that there will be an inefficiently high incentive on access seekers to bypass Telstra's assets. Annual price setting based on an updated economic model would be inconsistent with incentive regulation. It would provide Telstra few incentives to reduce cost and implement least cost network augmentation.¹⁷

- 5.4 The ACCC has proposed instead that the ULLS and PSTN OTA charges be adjusted annually based on an adjustment factor constituting the CPI, a technology factor and an output factor. The purpose of the construction is to estimate the change in the underlying cost of the networks, whether it is the change in the cost of conveyance (for PSTN OTA), or the change in the cost of the CAN (for ULLS). Optus makes the following observations in relation to this construction.
- 5.5 The use of a CPI measure is presumably designed to factor in the change in the cost of inputs to the network¹⁸ and reflect these in the change in the price of access. Inputs to each network would include all network elements, switches, multiplexers, trenches, copper, labour for operations and maintenance, overheads, etc. Optus argues that the general CPI is unlikely to be able to capture representative movements in these costs. Arguably, these costs could be more directly modelled by the ACCC based on expected trends in asset values and movement in wage costs. Optus believes this could be captured in a network input price index (discussed below) and could be factored into the technology factor. It would then be unnecessary to inflate or deflate the prices using CPI - the prices would simply move with the underlying costs, up or down.
- 5.6 A technology factor as described by the ACCC captures two factors. It would capture the change in the cost of network inputs (as described above) and it would capture efficiency or productivity improvements in network design and operation. This productivity element would measure the reduction in the total number of inputs required to produce a given level of output.
- 5.7 An output factor would appropriately adjust the unit cost of providing the service as output changes. The existence of economies of scale means that unit price reductions may be significant as output grows and the number of services in operation increases. Of course any adjustment factor would need to be itself adjusted with an estimate of the cost-output elasticity.

Technology factor

- 5.8 In rolling forward the cost of both the traffic sensitive component of the PSTN and CAN, a number of factors would need to be considered, including:
 - The movement in the cost of existing technology – the trend in asset prices is a guide to the size of this factor.

¹⁷ Indeed the ACCC's use of a non-optimised network configuration already sends these signals to Telstra.

¹⁸ Though we note in the ACCC discussion paper that the technology factor is also designed to capture changes in the "cost of technology".

- Improvements in available technology and improvements in network design. These would include improved trench sharing arrangements and increase use of aerial networks.
 - Productivity in operating and maintenance of the networks.
 - Changes in the output level.¹⁹
- 5.9 Optus believes that the trends in asset prices and wage costs will make up the majority of input costs for each network. Optus believes it is feasible and appropriate to construct and estimate a network input price index (NIPI) to measure the expected change in the costs of inputs from the projected annual change in equipment prices for each network asset type. Separate indexes could be created for the access network (for ULLS) and feeding into any access deficit calculation) and the transport network (for PSTN OTA) and potentially for LCS prices.
- 5.10 The NIPI would reflect a weighted average index of replacement costs. Factor weightings for asset classes, overheads and operating and maintenance costs would be based on the factors contribution to the total building block cost underlying each network's charge. Weights could be based on the n/e/r/a-ACCC model or whichever network model the indicative starting price is based.
- 5.11 Optus understands that in the context of the Universal Service Obligation, Gibson Quai has undertaken work for the ACA on improvements in the real prices of assets (network components). Optus can also provide estimates of asset price trends and wage trends for each factor within the index.

Output factor

- 5.12 Given the possibility for economies of scale and scope in the network it is appropriate that an output factor be included in the model. However, the ACCC must recognise the potential for Telstra to game output forecasts. We note that Telstra's most recent undertakings appears to assume:
- PSTN traffic (including local calls, long distance, international, etc) is falling over the period 2003/04 to 2004/05.
 - Average call length is increasing over the same period.
- 5.13 This is not consistent with Optus' view, or with Telstra's published data on call minutes. Optus' product marketing expects price falls to force continued growth in long distance, international (incoming and outgoing), fixed to mobile, mobile to fixed, and interconnect minutes and call ends. We expect the number of local voice calls to be steady or at worst slightly decline. Optus' product managers prepare up to date forecasts at a product and market level that are used to set Optus' annual operating plan. Optus would be happy to provide further information about our traffic forecasts to the ACCC on a commercial in confidence basis if required.

¹⁹ Discussed below.

5.14 Telstra's financial statements also show that over the past six years the total number of call minutes (national long distance, fixed to mobile and international outgoing calls) has increased from an annual total of 10.8 billion minutes for the year ended 30 June 1996 to 13.5 billion minutes for the year ended 30 June 2002. Traffic on the PSTN is a growing revenue base for Telstra.

Historic traffic for PSTN voice services in Telstra financial statements

<i>(all units in millions)</i>	1996	1997	1998	1999	2000	2001	2002
Local calls (# calls)	10,650	10,844	11,138	11,190	11,346	11,198	10,799
National LD (# minutes)	10,080	10,326	11,319	9,383	9,396	8,833	8,946
F2M (# minutes)	*	*	*	2,946	3,022	3,268	3,691
International outgoing (# minutes)	702	700	705	725	893	877	819
Total	10,782	11,026	12,024	13,054	13,311	12,978	13,456

* FTM call minutes are included in the total for National LD minutes for 1996 to 1998

5.15 These numbers does not include mobile to fixed calls, which are likely to continue growing at a significant level. The table below shows the increase in total mobile calls as shown in Telstra's financial reports. Mobile calling activity has increased by approximately 170% over the past six years, and a large number of these minutes will be terminating on Telstra's PSTN.

<i>(all units in millions)</i>	1996	1997	1998	1999	2000	2001	2002
Mobile (# minutes)	2,121	2,415	2,720	3,221	4,464	5,383	5,780

Mobile traffic from Telstra financial statements

5.16 [Start commercial-in-confidence]

[End commercial-in-confidence]

5.17 Much of the growth will be underpinned by price reductions resulting from competition in these markets and from Telstra's requirement to reduce prices under the Government's retail price controls. That is, the elasticity of demand for long distance, international and F2M services is significant - that is reductions in price significantly increase quantity demanded (that is, in calls and minutes). The ACCC has attempted in the past to estimate a range of elasticities of demand for each of the fixed telephony services. These very conservative estimates show that IDD, STD and F2M are -0.90, -0.55 and -0.30 respectively.²⁰

5.18 The CPI-4.5% price cap forces Telstra to decrease prices for PSTN voice services to end-users. For example, if the price cap ensures that the prices for each of these three services decreases uniformly by 1.5% for example, then based on the elasticities above, PSTN voice traffic could be expected to increase by approximately 1.35% for IDD services, 0.83% for STD and 0.45% for F2M.

²⁰ ACCC, *Review of Price Control Arrangements: An ACCC Report*, February 2001

- 5.19 Furthermore, Telstra's dominant position in the long distance market has led to it being able to substantially price above cost in that market. To the extent that this has restricted volumes of such calls Telstra should not be further compensated by a corresponding increase in access prices
- 5.20 A more thorough analysis of Telstra's total traffic data is essential to determine the trend in the number of call ends and the number of call minutes carried on the PSTN. Given the apparent importance of volume on unit costs it may be appropriate for the ACCC to commission an independent assessment of forecasts. Optus is happy to assist in such a process.
- 5.21 It will also be necessary to carefully implement the unit cost elasticity of output. We note that the elasticity estimate itself will be highly sensitive to the size of any expected changes in output over the period. For example, an estimated "point" cost elasticity of output may not be appropriate for more than incremental changes in output over the regulatory period. This could potentially be dealt with in the technology factor.

Local call and Internet traffic

- 5.22 Optus forecasts continued growth in the number of lines, call-ends, and call-minutes. Internal Optus forecast are supported by independent analyses undertaken by Gibson Quai on behalf of the Queensland Government. Gibson Quai's report titled "Customer Access Network Study" has undertaken a major survey of customer use of the customer access network including residential and business customers in particular statistical local areas within Queensland. There appears to be no reason why the results of this analysis cannot be extrapolated to the rest of Australia. The report shows:
- That 20% of households plan to add an extra line in the next five years (13% in the next two years). These additional lines are predominantly for Internet use but also for small business uses.
 - A large proportion of users of fixed lines are for voice only – 60%.
 - Over 23% of households expect the number of calls made by their household to increase over the next 5 years. Around 13% forecast a decrease, whilst 60% indicate no change.
- 5.23 Based on the limited information available on Telstra's undertakings it appears that there may be a number of errors in the consideration of local call traffic and call hold times in its submissions to the ACCC.
- 5.24 Telstra appears to be claiming the latter are "dropping off the PSTN" and as such the total cost of the call conveyancing network (and indeed the CAN via the access deficit) needs to be recouped from a smaller number of calls. This is misleading and results in unit costs for PSTN OTA that are too high because:
- Telstra routes the majority of its BigPond ISP service using its MegaPop service, and the remainder via its ISDN network. Optus traffic is similarly routed through such solutions. The routing of long-held Internet traffic for Optus and Telstra has not changed.

- Even if falling volumes is the result of the incumbent shifting some calls to other profitable networks (as Telstra indicates with Internet dial up traffic), an increase in the unit PSTN price will not be appropriate. This is because doing so means that the incumbent will have no incentive to internalise the cost of falling PSTN traffic if this simply results in an increase in PSTN prices and inefficient incentives to shift traffic.²¹
- Telstra should face the full cost of switching dial-up Internet from the PSTN to Broadband. That is, Telstra should face the full cost of running those minutes over "the broadband network" or any other solution. This consists of the full cost of providing additional capacity on the new service or network plus the lost surplus from serving a customer on the PSTN. Given that the price of PSTN OTA services is set above marginal costs to reflect economies of scale the latter "cost" of lost volumes on the PSTN can be significant.
- Guaranteeing that Telstra can still continue to recover the same net revenue in the face of falling volumes would not only provide Telstra with inefficient incentives to switch volumes to other networks but would also be inconsistent with the workings of a competitive market. Precisely this sort of issue was examined by the ACCC in relation to the question of falling volumes on the Moomba to Sydney Pipeline where the ACCC argued that raising prices to maintain constant revenues was inappropriate and an exercise of market power.²²
- Narrowband Internet is forecast to grow significantly for the undertakings period - 2003/04 to 2004/05, and will continue to be a "stepping stone" product for broadband.
- Optus suspects that Telstra has overstated the impact of changes in the routing of Internet traffic. For the majority of Internet traffic originally on Telstra's PSTN there has been no significant change in the way it uses the PSTN overtime. It has gone through a local switch and has then been directed on a separate transmission to a separate network layer) previously ISDN, but now MegaPoP or DIAS).
- The ISDN, MegaPop and DIAS solutions continue to use significant components of the IEN. The NERA/ACCC model suggests that 47% of local calls use two local switches, and 46% use two local switches and one tandem switch. MegaPop and DIAS solutions continue to use one local switch in the provision of long-held Internet calls.
- ISDN, MegaPop and DIAS earn significant revenue for Telstra. This revenue is not regulated under the price control arrangements.

5.25 [Start commercial in confidence]

²¹ Volume risk is a reasonable cost for the PSTN operator to bear. If Telstra does not bear any volume risk then the asset and equity betas in its WACC should be set to zero.

²² [ACCC submission to NCC regarding revocation of coverage \(September 2002\)](#)

[End commercial in confidence]

- 5.26 We note that this also means that for the purpose of an access deficit calculation, Telstra has underestimated the revenues derived from local call services. MegaPop and ISDN are unregulated and not subject to competitive supply, they should be included in Telstra's local calling revenue calculations in determining whether there is an access deficit.

ADC adjustment factor

- 5.27 Optus' view is that the access deficit does not exist and any inclusion of an access deficit is anti-competitive and creates significant welfare losses. If PSTN OTA access prices are to reflect an access deficit, then an ADC adjustment factor will be required to reflect the fact that, over time, the ADC will fall as a result of the accelerated rebalancing allowed under the Government's retail price controls.
- 5.28 The ACCC has discussed use of a "simple straight line adjustment" to both the access deficit charge, and the access deficit. Optus does not agree with this approach as it fails to take account of the line cost that underlie the access deficit calculation. Over a three-year period, we expect that efficiencies in the cost of access could be material. Without a separate adjustment factor to describe the impact on the size of the ADC of changes in line costs, Telstra will be effectively overcompensated for the cost of operating the CAN.
- 5.29 Consequently, Optus submits that, notwithstanding the complexities in doing so, the ACCC should develop an adjustment factor that recognises both the impacts of rebalancing and a CAN based NIPI discussed above.

6. Starting point for LCS

- 6.1 Providing for competition in the retailing of local calls is necessary to promote competition in the wider market for fixed telephony services (including long distance and international call services). In determining an appropriate indicative wholesale price for LCS, the ACCC must remain mindful of:
- The limitations and risks of the retail-minus methodology.
 - The underlying cost of an average local call.
 - The historical trend local call prices locally and internationally.
- 6.2 Whilst all other regulated services use a form of TSLRIC to determine an appropriate and efficient wholesale price, the ACCC has adopted a retail-minus pricing methodology for the calculation of LCS access prices. The retail-minus pricing principle delivers the highest possible access price for LCS that is consistent with promoting downstream retail competition in LCS. This is because any access price higher than this would preclude access seekers from profitably retailing LCS even if they had the same average retail costs as Telstra.
- 6.3 It is well recognised that the retail-minus pricing principle protects from competition any economic profits (be they positive or negative) embedded in

the access provider's retail prices. If the access provider's retail price is above wholesale plus retail costs then the retail-minus pricing principle will not enable the access provider to fully recover wholesale costs from its access sales. Similarly, if the access provider's retail costs are above wholesale plus retail costs then the access provider will be able to more than fully recover wholesale costs from sales of access under the retail-minus pricing principle.

- 6.4 Where the access seeker's retail prices are held below costs retail-minus has been internationally adopted as an appropriate access pricing principle. However, retail-minus has generally been rejected by regulators around the world as being inappropriate in a situation where retail prices are either unregulated or where the regulated price is set above the wholesale plus retail cost of providing that service. This is because in such circumstances access prices are set above wholesale costs and the access provider's retail sales are protected from competition based on the true costs of providing the service. The economic cost of this is that end customers' demand for the service is artificially restricted below efficient levels.
- 6.5 Ideally the retail-minus LCS access price will be set at the same level as the TSLRIC of the local call. However, given the imperfections in both estimates, Optus is of the view that the access price for LCS should be based on the lesser of:
- Wholesale costs of the LCS (be those costs identified as TSLRIC, TSLRIC+ or TSLRIC++); or
 - Retail price minus retail costs of the LCS.
- 6.6 The ACCC has stated that it views retail-minus as the 'superior' methodology for local calls when having regard to the relevant legislative criteria and considerations above. That is, the ACCC believes that the adoption of retail-minus will serve the LTIE, will provide a stepping-stone for facilities-based competition and will serve Telstra's legitimate business interests. The main basis for the ACCC's decision is:
- ...due to the fact that retail price controls on Telstra mean that there is the possibility that the forward looking costs of a local call (including indirect and an access deficit contribution) may be above the maximum price allowed under the retail price controls.²³*
- 6.7 However, to date Optus does not believe that the ACCC has undertaken a complete TSLRIC study on an average local call in order to ascertain whether this is actually the case. Optus would be particularly interested in any TSLRIC costing exercises undertaken by the ACCC in setting indicative prices and would expect the LCS price to be reduced if the TSLRIC is lower than the price calculated using a retail minus approach.
- 6.8 Optus views the ACCC's application of the retail-minus approach as a form of the efficient component pricing rule (ECPR) that charges access seekers and end-users the "opportunity cost" to Telstra (being the lost profits earned by Telstra) when access seekers acquire a resale customer. The ACCC in its

²³ ACCC Future Access Pricing Approaches for PSTN, ULLS and LCS: Discussion Paper, September 2002

recent discussion paper on the access deficit contribution has acknowledged that Telstra earns monopoly rents for this service. The ACCC state that:

...had Telstra used the forward looking cost model to determine the directly attributable (incremental) production cost of a local call, ... the cost inclusive of the retailing cost is likely to be below the allowed retail price, while the cost exclusive of the retailing cost is likely to be below the price set under the Commission's retail-minus approach to LCS (page 28)

- 6.9 Optus strongly believes that Telstra is not being constrained by the retail price controls to price below TSLRIC for local calls. The continual declines and increased discounting in Telstra's average retail prices for local calls demonstrate practical evidence of this.

Establishing a starting LCS access price under retail-minus

- 6.10 The ACCC has a number of alternatives when estimating indicative prices for LCS. In the text below, Optus sets out what we view as the range of price options available for LCS access prices. If the ACCC is to maintain a retail-minus methodology, there are essentially main pricing options for the LCS price:
- (a) Use a price based on the ACCC's assumptions and indicative prices at the time of its April 2002 Final Report on LCS pricing principles and indicative prices.
 - (b) Use a price based on the same principles outlined in the ACCC Final Report, but using some weighted average of all Telstra's retail prices.
 - (c) Use a price based on the same principles outlined in the ACCC Final Report, but using updated retail costs from Telstra's RAF.
- 6.11 The ACCC might also consider a combination of options (b) and (c) above. It will be vital however, that if option (c) is followed and Telstra's retail costs are recast from more up to date accounts, that procedural fairness is given to access seekers. This would require access seekers being given access to Telstra's retail costs, details on the allocations used and the changes that have occurred since the previous assessment of retail costs undertaken by the ACCC.
- 6.12 It is worth noting here that Telstra claims in its Undertaking submission that its offer of 14.5 cents per call for LCS satisfies the ACCC's retail-minus principles because total retail costs are 5.5 cents. This statement is incorrect. The ACCC estimated retail costs (GST exclusive) as 2.49 cents per call for local calls and the retail discount for basic access is 4.955 cents per call, totalling 7.45 cents for LCS (GST exclusive).²⁴ Therefore, an LCS price of 14.5 cents does not adequately remove all avoidable retail costs and access seekers would be required to cover retail costs of 7.45 cents using the gross margin of only 5.5 cents per call.

²⁴ ACCC *Local Carriage Service pricing principles and indicative prices: Final Report (Revised)*, April 2002

Retail-minus based on ACCC's most recent indicative rate

- 6.13 In the ACCC's report on LCS (April 2002) the following indicative prices were published for residential customers.

ACCC latest indicative prices and retail costs 2001-02

	Cents per call (GST exclusive)
Unbundled standard call rate	20 cents
Unbundled neighbourhood call rate	16.37 cents
Average retail costs for local calls	2.49 cents
Average retail costs for line rental	4.955 cents

- 6.14 Since the publishing of these indicative rates Telstra removed neighbourhood calls from the unbundled retail offering (*Homeline Part*). Optus contends that Telstra's decision to remove neighbourhood calls from its unbundled package was undertaken with the purpose of reducing competition by inflating the access price for LCS. Optus therefore believes that Telstra is engaging in strategic regulatory gaming, having regard to the structure of the ACCC's pricing principles. As such, it is reasonable that the indicative price should be set based on the offerings at the time of the ACCC released its April 2002 report - with the inclusion of neighbourhood calls.
- 6.15 Applying the retail-minus methodology, based on the above retail prices of Telstra's basic unbundled standard and neighbourhood calls at 20 cents and 16.37 cents respectively (excluding GST), results in a LCS price of **11.58 cents** per residential local call (GST exclusive).²⁵
- 6.16 The access price would actually be even lower than this if business calls are included in the analysis.
- 6.17 A failure of the current ACCC retail-minus methodology is that it does not take into account the discounting that Telstra puts on its bundled offerings. That is, Telstra can maintain a high LCS access price by retaining the standard unbundled price of 22 cents, whilst discounting its bundled offerings to as low as 17.5 cents for *Homeline Plus* (these prices include GST). This provides Telstra with the perfect conditions to administer a price squeeze on its competitors. An alternative would therefore be to instead take into account all retail offerings when determining the retail price rather than just looking at the unbundled price alone.
- 6.18 A further alternative would be to establish more than one starting price and allow access seekers to adopt the preferred price provided that their resale of that service to customers imposes the same conditions as Telstra does. For example, if access seekers sell an unbundled service they pay an access price

²⁵ ACCC *Local Carriage Service pricing principles and indicative prices: Final Report (Revised)*, April 2002. This calculation assumes that 75% of calls are standard and 25% are neighbourhood calls.

based on Telstra's unbundled price. However, if access seekers bundle local calls with long distance then they pay an access price based on Telstra's local call costs within a similar bundle.

*Retail-minus using a weighted average of all Telstra's retail prices*²⁶

6.19 An alternative is to take a weighted average of all of Telstra's current retail offerings. This may be preferred because it reduces Telstra's ability to inflate the LCS price and to price squeeze access seekers as explained above.²⁷ The table below summarises Telstra's key retail offerings. We note that following complaints by Optus, Telstra has now excluded neighbourhood calls from these offerings, but has fully offset this with further discounts on its local call rate.

Telstra's current retail offerings, including GST

	Unbundled plan	Bundled plans	
	<i>Homeline Part</i>	<i>Homeline Complete</i>	<i>Homeline Plus</i>
Local call – cents/call*	22.0	20.0	17.5
Neighbourhood call –cents/call*	Not offered	Not offered	Not offered
Line rental – per month ^	\$23.50	\$23.50	\$26.50

* Local call prices are effective from 7 May 2003

^ Line rental prices are effective from 1 July 2003

6.20 Without knowing Telstra's call profile or customer numbers on each offering, we estimate a reasonable weighting might be that 60% of residential and business customers take *Homeline Part*, 30% take *Homeline Plus* and 10% take *Homeline Complete*.

6.21 Using the same estimated retail costs as above (7.45 cents), this would result in a LCS price of **11.96 cents** per local call.²⁸ Once again, this will be even lower if business calls are included in the analysis.

6.22 A more accurate estimate is possible by applying Telstra's actual customer numbers and incorporating all of Telstra's retail offerings including its Options Rewards, and the full gamut of its bundled discount plans. This would yield an even lower LCS price.

6.23 Optus is strongly in favour of price discounting in the local call market and has led the market in some of its local call offerings. These have, however, been largely restricted to customers on its HFC network. Where Optus relies

²⁶ This is based on the most recent Telstra prices that are effective from 7 May 2003. Note that neighbourhood calls have now been removed for all offerings.

²⁷ We note that it reduces Telstra's ability to perform a price squeeze, but to the extent that Telstra maintains customers on its unbundled plans, it will continue to have a cost advantage.

²⁸ This uses starting retail prices of (GST exclusive) 20 cents for *Homeline Part*, 18.64 cents for *Homeline Part* and 18.18 for *Homeline Complete*. The price of 18.64 cents for *Homeline Plus* incorporates the \$3 margin on line rental and apportions this across an estimated 100 local calls per month.

on Telstra network and LCS access prices, its ability to compete and pass on lower prices to customers is hindered.

Changing the estimates of retail costs under retail-minus

- 6.24 The estimates for a wholesale LCS price above are based on retail costs published by the ACCC and based on the 1999-2000 data in the n/e/r/a model. As suggested in Telstra's Undertakings and in the ACCC's discussion paper, these retail costs are to be updated in determining indicative prices. The issue is whether they were estimated correctly at the outset and whether they have changed significantly.
- 6.25 There are two options available to the ACCC in establishing an initial estimate of Telstra's retail costs for the current indicative prices, these are to:
- Carry out a new retail cost study based on Telstra's 2001/02 Regulatory Accounting Framework (RAF) accounts
 - Roll forward Telstra's retail costs already estimated by the ACCC based on Telstra's 1999/00 RAF accounts.
- 6.26 The first of the above options has the advantage that it uses the most up-to-date data available (ie, the 2001/02 RAF accounts). However, Optus believes that there are a number of advantages associated with the second option that make it more appropriate than the first.
- 6.27 Firstly, the ACCC went through an intensive effort and consultation process when estimating retail costs in 2001 (using 1999/00 RAF data) - including the appointment of independent experts in the calculation of avoided costs. Carrying out an avoided cost study based on the RAF will inevitably be a large-scale project. While the RAF does distinguish between retail and wholesale functions, the guidelines for doing so do not dovetail with the estimates of 'retail costs' required under the retail-minus pricing principle.
- 6.28 In particular, the RAF is a fully distributed cost framework that leaves a significant amount of discretion to Telstra in the allocation of (retail) costs across products. The RAF is not designed, nor can it be expected, to ensure that all retail costs relevant to the retail-minus calculation are allocated to the relevant LCS products 'basic access' and 'local calls'. Similarly, even the allocation between wholesale and retail activities need not be consistent with ensuring that all avoidable costs on the cessation of retailing are included as RAF retail costs.
- 6.29 The consequence of this is that for each year of the Undertakings a retail-minus cost study is required to:
- Understand the process by which costs are allocated between basic access/local calls and other non-LCS product categories
 - Form a judgement on whether this process has ensured that all costs that would be avoided as a result of the cessation of retailing of basic access and local calls have been allocated to those product categories under the RAF

- Understand all management reports and other studies used as allocation devices under the RAF framework (there is no reason to expect that these allocation methodologies will be consistent with a retail-minus cost study)
 - Decide on the appropriate adjustment to RAF allocations of costs across product categories to ensure avoidable costs are allocated to basic access/local calls.
- 6.30 The resulting adjusted RAF retail accounts for basic access and local calls would then include all avoidable retail costs. However, those performing the retail-minus cost study would then have to remove all non-avoidable costs that have been allocated to RAF retail accounts for basic access and local calls.
- 6.31 We understand that in the 2001 avoided cost study the ACCC's expert made a number of adjustments. However, those adjustments were based on the 1999/00 RAF accounts and internal allocation procedures used in those accounts. Such adjustments cannot necessarily be applied reliably to any future retail-minus cost studies, as the underlying RAF allocations need not be the same as in 1999/00. All of these issues suggest that it would be considerably simpler and less costly to rely on rolling forward the results of the previous retail-minus cost study rather than undertaking a complete new study.
- 6.32 The second important reason why a new retail-minus cost study should be avoided also relates to the scope for the RAF allocation guidelines to be interpreted in different ways. This provides Telstra with a considerable advantage in relation to ensuring that RAF retail costs allocated to basic access and local calls are minimised.
- 6.33 The ACCC accepted the advice of its expert that these basic access and local calls retail costs – such a study would be required again to ensure that the allocation were consistent with other service and that the entire RAF has not been manipulated in order to serve Telstra's objective of minimising retail costs in local calls. In Optus' view this highlights both:
- The divergence between RAF allocation guidelines and the cost allocation required for the retail-minus pricing principle
 - The capacity for Telstra to manipulate the RAF allocations in order to minimise any estimates of avoidable retail costs derived from them.
- 6.34 In relation to the second dot point we note that there are a number of ways in which Telstra could 'learn' by this experience in order to reduce the scope for such adjustments in future cost studies. For example, Telstra could respond by simply minimising its allocations to RAF retail across all products rather than simply basic access and local calls. While the RAF guidelines provide some constraint on the capacity to do this it is by no means a strict constraint.
- 6.35 The third main reason for rolling forward the avoidable cost estimate based on the 1999/00 RAF data is that it provides greater certainty for access seekers and Telstra, as it would be less likely to lead to a sudden change in access prices. The benefits of this in terms of continuity of strategy and commercial planning by all players should not be underestimated. Furthermore, assuming

that the past avoidable cost study of 2 years ago was accurate, if a new cost study did result in a significantly different result to rolling forward the past estimate then this would throw significant doubt on either the:

- The new avoidable cost study
- The processes for rolling forward the past cost study.

6.36 On the assumption that the process for rolling forward the past cost study would be the same as the process for rolling forward any new cost study, this tends to lead to the conclusion that either:

- In order to perform avoidable cost studies a very intensive effort (and understanding of Telstra's RAF allocations) is required suggesting that they should be performed infrequently with estimates rolled forward over a period of 5 years or more (as is commonly the case in other regulated industries such as energy transmission/distribution).
- The process for rolling forward estimates from year to year is unreliable and a new avoidable cost study should be performed every year in order to set indicative prices.

6.37 It is Optus' view that the first of these conclusions is the most appropriate.

Establishing the TSLRIC of LCS access based on the n/e/r/a-ACCC model

6.38 Optus has noted on a number of occasions that the TSLRIC+ of a local call is substantially lower than estimated by Telstra and that the Government's retail price controls allow Telstra to earn significant monopoly profits on local calls. The ACCC should have regard to the cost of a local call in setting its LCS price.

6.39 Optus believes that it is appropriate to use the TSLRIC+ when building up the cost of a local call rather than TSLRIC++, because the ADC should not be included in the cost of a local call.

6.40 The ACCC is currently considering whether there is a case for it to continue to allocate an access deficit contribution (ADC) when costing PSTN services (including LCS). The final decision the ACCC arrives at in relation to consideration of the ADC will likely impact on the appropriate pricing principle for LCS.

6.41 In particular, if the ACCC decides that the legislative objectives do not warrant an ADC being included in access prices then, consistent with the above analysis, then:

the lesser of TSLRIC+ and retail-minus should be adopted as the appropriate LCS pricing principle.

6.42 As shown below, Optus own estimate of the TSLRIC+ of LCS suggests that it is lower than an access price based on the retail-minus approach. However, if the ACCC decides that the legislative objectives do warrant an ADC being included in access prices then:

the lesser of TSLRIC++ and retail-minus should be adopted as the appropriate LCS pricing principle.

- 6.43 Clearly, a retail-minus approach is more likely to be appropriate if an ADC continues to be allocated to PSTN services than if it does not (as TSLRIC++ is greater than TSLRIC+).
- 6.44 Based on the most recently available ACCC efficient PSTN conveyance costs, the cost of providing a local call to the end-user on a TSLRIC basis is calculated as follows:
- The efficient conveyance cost (TSLRIC+) flagfall rate is 0.13 cents per call end and the per minute rate is 0.69 cents per minute as presented in the ACCC's indicative rates for 2001/02.²⁹
 - **[Start commercial-in-confidence]**
[End commercial-in-confidence]
 - Based on a call hold time of approximately 5 minutes the actual network direct and indirect costs (TSLRIC+)³⁰ of a local call is **7.16 cents**.
 - The associated ADC for that average 5 minute local call is calculated as 4.72 cents.³¹
 - If the ACCC decided to add the ADC to this, the resulting TSLRIC++ would be 11.88 cents.
- 6.45 As shown in the analysis above, the TSLRIC+ for an average local call (5 minutes) is significantly lower than the ensuing range of retail-minus LCS access prices of 11.58-11.96 cents.
- 6.46 As the length of a local call increases, the associated cost of that call will increase. If a reliable TSLRIC methodology is to be applied it is imperative that the correct local call hold time is determined on a current and going forward basis. Even under the simplistic costing exercise above (which does not cater for the local calls that avoid the local switch altogether) it can be seen how much the TSLRIC estimate will be affected by even small changes in the call hold time.

Factors affecting the retail-minus price of LCS

- 6.47 Optus believes there are substantial inadequacies in the way in which the ACCC have applied the retail-minus methodology. Optus believes:

²⁹ This is likely to overstate the network costs of the local call because it assumes two full PSTN OTA services, whereas this may not be the precise call path for all local calls. Call set up and hold costs are likely to be different for local calls and PSTN origination and termination.

³⁰ Consistent with ACCC views, the network costs in this calculation are based on TSLRIC+, that is, it includes the efficient conveyance costs and some allocation of common or indirect costs of the network. It is not appropriate to use TSLRIC++ when calculating the network costs for local calls in this analysis.

³¹ The ADC rate is 1.36 cents allocated to flagfall and 0.20 cents per minute. This is a 50:50 allocation of the total access deficit consistent with the ACCC's methodology.

- It is a form of ECPR that, contrary to previous claims by the ACCC, is in fact inconsistent with the *Trade Practices Act 1974*. Optus contends that that monopoly profits earned by Telstra on its local call service should be netted off the LCS price.
- A precise and correct estimation of retail costs is essential in determining the correct LCS wholesale price.
- It does not allow access seekers to pass efficiency gains in retail costs on to the end-users. Nor does it force Telstra to pass on efficiency gains in network costs.
- The price cap does not factor in that it is unlikely that Telstra is constrained by this price given that the average retail prices charged by Telstra are significantly lower than 22 cents.³²
- The LCS wholesale price is driven by the choice of retail starting price rather than being cost based. If the regulator selects the wrong retail starting price it can make a considerable difference to the final LCS wholesale price.
- The retail-minus methodology allows price squeezes, particularly when based on only one standard retail price.

7. Adjustment path for LCS using re-calculation of LCS retail costs

- 7.1 The ACCC's proposed adjustment path will only be relevant if a retail-minus methodology continues to be used for LCS wholesale prices. If the ACCC adopts a TSLRIC approach, retail costs will not be an issue as, at the wholesale level, any efficiency gains will already be captured in the TSLRIC estimate.
- 7.2 In the ACCC's implied adjustment path it is considering the TFP in relation to all retail costs associated with LCS. LCS associated retail costs include those retail costs associated with providing basic access and those retail costs associated specifically with providing local calls.
- 7.3 If the retail discount on basic access is estimated to decrease over time as efficiency gains are realised in the provision of basic access, then it is expected that total retail costs that are included in the calculation of the access deficit should also decrease at a similar rate. It is important that the ACCC monitor this closely when considering the size of the access deficit over time and the adjustments to retail costs associated with basic access.
- 7.4 Optus does not believe that Telstra will have been able to drive significant cost reductions in its retail activities since the ACCC's last set of indicative prices.

³² Telstra offers considerable discounts on the standard 22 cent per call (GST inclusive) in the current market. For example, the local call charge is as low as 17.5 cents (GST inclusive) under *Homeline Plus*. Hence, it is difficult to accept a claim from Telstra that the pricing of local call services are constrained by retail price controls below costs when market evidence demonstrates that Telstra voluntarily prices local call services significantly below these retail price controls. The ACCC in its assessment of Telstra's original PSTN Undertaking found that Telstra prices local call services at least \$90 million below the maximum price permissible under the prevailing retail price controls.

Efficiency gains in retailing of local calls and access due to technical progress; economies of scale/scope and managerial improvements are likely to be limited. More automated billing systems may enable more efficiency and bundling activities may increase economies of scope and scale, however, these are unlikely to be significant and it is likely to be the case that retail costs for Telstra have remained quite stable over time.

- 7.5 In order to determine an appropriate adjustment factor, it would be beneficial to examine the historic movements in retail costs for Telstra compared to the CPI to come up with a proxy TFP rate for retail costs.³³ Changes in Telstra's retail activities as measured through its RAF should be treated with caution. If Telstra claims that significant changes have occurred then the ACCC should examine in detail the underlying reasons for these changes, including whether Telstra has simply amended its cost allocation methodologies. Further, such an analysis should be provided to access seekers for review consistent with procedural fairness.
- 7.6 Another point to note is that any changes in the retail costs associated with basic access will have an equivalent impact on the calculation of the access deficit. If the retail discount on basic access is estimated to decrease over time as efficiency gains are realised in the provision of basic access, then it is expected that total retail costs that are included in the calculation of the access deficit should also decrease at a similar rate. It is important that the ACCC monitor this closely when considering the size of the access deficit over time and the adjustments to retail costs associated with basic access.

ACCC's proposed adjustment path for re-calculation of LCS retail costs

- 7.7 On page 18 of the ACCC's discussion paper the following formulae is put forward as the appropriate mechanism to roll forward an estimate of retail costs:

$$\text{Retail costs}_t = \text{RC}_{t-1} (1 + \text{CPI}_{t-1} - \text{TFP}_{t-1});$$

where:

TFP = change in total factor productivity; and

CPI = the change in the consumer price index

- 7.8 However, this construction has a number of problems. Firstly, the purpose of the above formulae should be to estimate, as accurately as possible, the change in retail costs from one period to the next. In this regard, the reliance on CPI and TFP is potentially misguided. The ACCC does not provide a definition of TFP in its discussion paper, however, the economic literature defines TFP generally as the difference in the growth of output of an economy that cannot be explained by growth of inputs. Thus, a TFP of 1 percent may be taken to suggest that even if the number of inputs remained constant over time output would still grow at 1 percent. If one can further assume that the production

³³ Optus has requested access to Telstra's retail costs in order to examine these and determine a likely TFP estimate. Any comment provided in this submission is limited to the extent that Optus does not have access to relevant information at this stage.

function for the economy in question operates under constant returns to scale it can be assumed that the same output could be achieved and all inputs reduced by 1 percent. We imagine that the ACCC had this scenario in mind when it chose to include the term 'TFP' on the right hand side of the above equation.

7.9 However, we note that this is a very specialised scenario and is unlikely to result in an accurate rolling forward of retail costs over time for the following reasons. In this case we are interested in estimating changes in the cost of providing retail services. This is a function of:

- TFP (ie, the total number of inputs required to produce a given level of output of retail services)
- Changes in the input prices for those services
- Changes in the level of output of retail services.

7.10 Clearly, TFP only addresses the first of these issues. Arguably, the CPI term on the right hand side of the above equation addresses the second issue of changes in input prices – if input prices for retailing of LCS change in line with the general consumer price index. However, this is almost certainly not going to be the case, the input price used most intensively in retailing (labour) is likely to be rising in real terms over time (that is, faster than CPI). We note that Telecom New Zealand has submitted to the New Zealand Commerce Commission that avoidable retail costs are in the vicinity of 90 percent labour costs.³⁴ If this is true then it is much more reasonable to adopt an index of economy wide wage costs than CPI to index retail costs from one year to the next. Optus considers that average weekly ordinary time earnings (AWOTE) published by the ABS would be a suitable index in this regard.

7.11 We note that subtracting TFP from an estimate of CPI will never be a sensible approach where TFP is positive. This is because a positive TFP is by itself an indication of increased real earnings by factors of production. Assuming input costs rise by CPI (ie, no real increase in input earnings) and then subtracting TFP is internally inconsistent. If a positive TFP estimate is to be used then consistency requires that real input prices must also be assumed to be rising (ie, nominal costs rising faster than CPI).

7.12 Finally, the third dot point above would seem to suggest that the ACCC implicitly believes that the output of retail activity is likely to be constant over time. In reality retail costs may be rising as percentage of total costs over time as retail competition in telecommunications intensifies. This increase in retail activity will almost certainly lead to higher costs over time that outweigh the minimal scope for TFP gains in retailing.

7.13 Given the above considerations we believe that the appropriate methodology to roll forward retail costs over time is given by:

$$\text{Retail costs}_t = \text{RC}_{t-1} (1 + \text{AWOTE}_{t-1});$$

where:

$$\text{AWOTE} = \text{change in average weekly ordinary time earnings};$$

³⁴ See page 232, *Telecom New Zealand Submission on Wholesale Draft Determination* January 2003.

Sharing wholesale cost reductions with customers

- 7.14 A potential flaw with the above recommended roll forward mechanism is that it does not share any wholesale cost reductions with customers. The ACCC may take the view that this is appropriate as the ‘retail-minus’ pricing principle is only intended to apply where Telstra is unable to fully recover its wholesale costs.
- 7.15 However, as already outlined above, Optus believes that Telstra is currently able to recover above its full wholesale costs and that the associated monopoly profit on LCS will tend to grow over time. In this circumstance the retail-minus principle operates as a form of efficient component pricing rule (ECPR) and protects Telstra from the loss of those monopoly profits through cost based competition.
- 7.16 Nonetheless, should a retail-minus methodology be used to establish an initial LCS wholesale price we believe that it would be consistent with the ACCC’s legislative objectives to index that wholesale price in line with changes in unit wholesale costs.

$$w_t = w_{t-1} * (1+\alpha)$$

where:

w_t = the LCS access price in period t; and

α = the estimated nominal change in LCS wholesale/network costs per annum.

- 7.17 This approach would ensure that Telstra’s monopoly LCS profits did not increase over time due to falling network costs that are not captured by the retail-minus methodology. Of course, it would still be preferable to base the initial LCS price on a direct estimate of wholesale costs where those wholesale costs are below the price set by an application of the retail-minus principles.

8. Range versus point estimate

- 8.1 Optus supports consideration being given to a range rather than a point estimate for indicative prices. While multilateral agreement on access prices can reduce the regulatory burden, a “one price fits all” approach may not be appropriate. If the economic costs of supplying services to different access seekers varies, then it is efficient for different prices to be paid for access. The ACCC may consider factoring these elements into its model terms and conditions.
- 8.2 As recognised by the ACCC in the original Pricing Principles 1997 and as Optus has argued in the past, access prices might vary according to volume, particularly when that volume affects the scale of wholesale ordering, billing and other specific cost associated with providing access.
- 8.3 Optus believes that if the ACCC is to provide a range then it should give detailed guidance as to the factors (and the quantification of the coefficients of

those factors) that would decide which point within the range a particular access seeker might arrive at. A worked example would be appropriate. This is particularly important given that the objective of setting indicative prices is to assist access seekers in commercial negotiations with Telstra. The absence of any explanation to support a range of prices is likely to undermine commercial negotiations because past experience indicates that Telstra will simply offer the higher rate.

- 8.4 Notwithstanding our above view, Optus would caution the ACCC against simply using a range as a means to hold over the consideration issues beyond the statutory deadline for setting indicative prices. Such an outcome is unlikely to facilitate commercial negotiations and achieve the certainty this reform was supposed to promote. The range should reflect those matters already canvassed by the ACCC in its 1997 Pricing Principles and should not be used as a device to deal with uncertainty. If the ACCC feels that it has to take this approach then it should clearly signal the issues that require further consideration and implement a process to ensure the rapid resolution of those matters.

9. PIE 2

- 9.1 Below is a discussion of Optus' preliminary views of the PIE 2 model. This discussion is based on non-confidential information that is presently available. Optus has not as yet been granted access to the PIE 2 model and has not been able to examine the network architecture or the confidential assumptions.
- 9.2 Telstra's PIE 2 model appears to be a mix of historic and forward-looking architecture, though it appears to use current cost replacement values and some forward-looking values for particular assumptions. For example, the network architecture (including site locations), trench sharing arrangements and operating and maintenance (O&M) appears to be based on historic decisions and values. In contrast the trenching costs, WACC, some multiplexer technology choices and asset values appear to be forward-looking.
- 9.3 This inconsistency raises significant concerns about the basic principles on which the costs and prices are based, and on the various assumptions in the model. These are discussed below.
- 9.4 Comments on the PIE 2 model's network architecture will be given in a later submission though we suspect that key issues will include:
- Trench costs and trench sharing assumptions appear not to be efficient forward looking parameters, but based on historic design and arrangements
 - The number of switches employed and their location appear to be a function of historic decisions, as does the location of network sites. These should be based on best in use technology and planning decisions
 - It is unclear what capacity is devoted to non-PSTN OTA services, or the level of transmission capacity.

TSLRIC

- 9.5 Access prices accomplish several important goals for economic efficiency and delivering consumer benefits, including:
- (a) Preventing incentives for inefficient bypass of existing infrastructure and steering purchasers to the most efficient, least-cost downstream suppliers of each good or service for which there is sufficient demand (productive efficiency)
 - (b) Guiding purchasers to make efficient choices among different goods and services offered in the market (allocative efficiency)
 - (c) Achieving the level of cost recovery that encourages efficient levels of investment, innovation, entry and exit (dynamic efficiency).
- 9.6 Objectives a) and b) are ideally achieved by pricing access at the short run marginal cost of providing access. However, this is unlikely to be consistent with objective c) as it is unlikely to lead to the recovery of all the access suppliers sunk infrastructure costs.
- 9.7 A forward-looking economic cost approach is the highest access price consistent with achieving objective c) without compromising objectives a) and b). This is because the expansion, contraction, entry and exit decisions of competitors efficiently and necessarily turn on expected prices and costs. Such signals guide efficient economic decision-making and are not related to the costs Telstra has expended historically.
- 9.8 Economic costs are calculated from the standpoint of building production and service capability today, at current input prices, and in the fashion that is most cost effective in light of today's generally available technology, and input prices.
- 9.9 Consequently, a forward-looking cost standard for the setting of access prices to Telstra's network will aid in the attainment of the three core efficiency goals detailed above.
- 9.10 The appropriate consideration of whether the incumbent or entrant TSLRIC should be used is provided by n/e/r/a in its report to Optus on "Appropriate measurement (and recovery) of the 'access deficit'":

The standard economic rationale for the use of TSLRIC in setting access prices is to eliminate the incentive for inefficient bypass of natural monopoly infrastructure. That is, by setting prices at or below the costs of a new entrant the new entrant will have no incentive to (inefficiently) duplicate a service already in existence. However, in the case of the CCN (the traffic sensitive portion of the PSTN) the rationale for the use of TSLRIC is less clear as it is presumed that the CCN is capable of competitive supply (ie, is not necessarily a natural monopoly in all areas). Consequently, it can be efficient for competing CCN's to cover the same areas. This raises the obvious question of why regulate the CCN in those areas in the first place? Ignoring this question here (but addressed in section 5) the potential for competitive supply means that

there is a risk that setting access prices too low will deter new entrants - even if the new entrant has lower costs than the incumbent.

In summary, access prices can have a role in signalling new entrants not to invest in any circumstance (even if they are lower cost than the incumbent) and in signalling investors to invest only if they are lower cost than the incumbent. Which of these is appropriate will depend on whether the underlying infrastructure is a natural monopoly or not.

- 9.11 Whilst n/e/r/a was in this circumstance providing advice on the merits of TSLRIC for the CCN (or the traffic sensitive portion of the PSTN), the same principle should be applied to the CAN.

Economic principles of TSLRIC

- 9.12 Total Service Long Run Incremental Cost (TSLRIC) is the additional cost incurred by a firm over the long run in producing a service, assuming all the other outputs of the firm are held constant.
- 9.13 The relevant increment of output to be costed is the total demand of all uses and users of the network service, including both access seekers and the access provider. TSLRIC represents the additional costs of providing this total service.
- 9.14 TSLRIC is based on costs incurred over the long run, that is, a time horizon long enough that all capital and sunk costs are variable and able to be replaced with best in use technology. Obsolete or inefficiently configured assets are replaced with efficiently configured assets using current best-in-use technology.
- 9.15 In competitive markets, entry decisions are based on long run costs, since all costs of entry are variable before the necessary investment is sunk.
- 9.16 The measure of cost on which efficient prices are based, and to which efficient prices converge in competitive markets, is incremental cost. Incremental cost represents the additional cost of producing a particular service if all other outputs of the firm are held constant.
- 9.17 Use of incremental cost pricing will best approximate the performance of competitive markets upon which efficient prices are based. In the long run, prices in competitive markets converge to incremental cost. Firms decide whether to expand or enter new markets by comparing the expected costs of expansion or entry with the expected incremental revenue. Likewise, firms decide whether to contract or exit by comparing the costs avoided with the expected revenues foregone.

An access price based on TSLRIC promotes the long-term interests of end users

- 9.18 An access price for the declared services based on TSLRIC promotes the long-term interests of end-users by:
- Encouraging competition by promoting efficient entry and exit in dependent markets;

- Encouraging economically efficient investment in infrastructure and promoting efficient ‘build or buy’ decisions;
- Providing for the efficient use of existing infrastructure;
- Providing incentives for access providers to minimise the costs of providing access;
- Promoting the legitimate business interests of the access provider by allowing efficient access providers to fully recover the cost of providing the service; and
- Protecting the interests of persons who have rights to use the declared services.

Measurement of TSLRIC

- 9.19 The costs that are included in a TSLRIC estimate can be separated into operating costs and capital costs. Common costs may only be included in TSLRIC provided certain attribution and imputation rules are satisfied.
- 9.20 Operating costs are the ongoing operational costs of providing the declared services, including the labour and material costs that are causally related to the provision of the declared services.
- 9.21 Capital costs comprise a significant proportion of the TSLRIC of the declared services, and are determined by a consideration of the following:
- (a) Valuation of assets - replacement cost is the present-day cost of replacing the asset with another asset that provides the same service potential. This should not be the same asset, but rather the asset that hypothetically is the best (least-cost) option under current technology. This can be the best-in-use or the best commercially available technology.
 - (b) Rate of return - the cost of capital, usually represented by the weighted average cost of capital, is the opportunity cost of debt and equity funds to finance the operations of the firm.
 - (c) Rate of depreciation - depreciation represents the decline in the economic value of assets used to provide access services. The decline in economic value of an asset is determined by a range of factors including its expected operational life and technological factors.
 - (d) Common costs - properly constructed measures of TSLRIC will only provide for the recovery of common costs if the cost must be causally related to the provision of the service such that the cost would be incurred if the service was provided on a stand-alone basis; the total costs of providing the service (incremental and common) should not exceed the stand-alone costs of providing the service; and common costs should not be over-recovered. A firm should not earn revenues from the supply of any set of services that exceeds the forward-looking stand-alone costs of providing that set of services. This implies that the sum of the incremental and common costs which are allocated to any

set of services should not exceed the stand-alone costs of providing that set of services. Therefore the allocation of common costs across all services should not exceed total common costs.

TSLRIC is an upper-bound estimate of actual costs

- 9.22 Given the sunk nature of much of the incumbent's current infrastructure, TSLRIC is a conservative measure of economic costs and provides an upper-bound measure of the costs an efficient incumbent firm would actually incur in providing the service, to service current demand.
- 9.23 By way of example, assume that Telstra's actual distribution network has a trench, not shared with other utilities, that contains the conduit and copper cable used to service households in the street. An efficient operator today may instead roll out an aerial cable on poles where the costs of the poles are shared, for example, with an electricity utility and two cable TV companies. Where Telstra chooses to not update its network to this forward-looking efficient practice, it does so because the ongoing actual costs of maintaining its sunk network are less than the TSLRIC of providing the service.
- 9.24 TSLRIC involves the assessment of a network that provides the services in question in an efficient way. However, the incumbent may choose to build a different network in order to efficiently participate in other markets. Consequently, there may be economies of scope not captured by the pure TSLRIC network model, and/or higher levels of common costs allocated to the declared services than would otherwise be the case.

TSLRIC should not be based on existing network design

- 9.25 TSLRIC models should not be based on the firm's existing network, but rather as it would be if reconstructed from today - assuming all current productive inputs are variable and need to be replaced. The existing network captures an aggregated amalgam of a firm's historical practices, and does not properly represent best-in-use efficient practices that would be deployed if constructing the network today.
- 9.26 TSLRIC estimates should be determined by constructing a model of a new network that employs best-in-use technology and which is dimensioned to accommodate current demand for the service over the period where prices are being set.
- 9.27 These principles require the modelling of a network based on the most economic choice of technology, network architecture and network locations. The scorched node and scorched equipment approaches are inappropriate because:
- TSLRIC principles assume a best-in-use network;
 - TSLRIC principles require an assessment of forward looking costs which assume a best-in-use network model which is not based on existing network architecture (whether to the node or otherwise) but rather as a network would be if reconstructed from today (i.e. assuming all current productive inputs are variable and need to be replaced);

- TSLRIC estimates must exclude the costs of inefficient design or operations, including incumbent practices that are now inefficient even though such practices may have been efficient when the network roll-out occurred; and
 - Telstra's existing network architecture from the end-user to the node captures an aggregated amalgam of Telstra's historical practices over the last 80 years, and does not represent current best-in-use efficient practices. It does not represent a network that would be rolled out from today, assuming the capital stock is variable.
- 9.28 Telstra's current network architecture, design, technology and operations reflect its operation as a government-owned monopoly. Telstra's network architecture up to the node is economically inefficient. For example, it has not deployed efficient sharing of distribution and inter-exchange trenching infrastructure in metropolitan areas.

Trenching costs

- 9.29 The PIE 2 contains a mix of historic network architecture and forward looking values. This approach gives rise to substantial scope for inconsistency in the way various costs are treated. An area in which such inconsistencies are apparent is in the approach adopted by Telstra in relation to new estates.
- 9.30 The n/e/r/a-ACCC model assumes that new estates in 1998 represented 5% of the total number of all estates, and that the number of new estates as a proportion of total estates increases by around 2% each year. Accordingly, by 2003, at least 14% of Telstra's network should be made up of new estates and consequently contain no trenching costs for Telstra. However, the PIE 2 model apparently has new estates representing only 2% of all estates.
- 9.31 The adoption of an approach that models historic network architecture with forward-looking values will enable Telstra to reap a return on trenching costs that it did not incur. This will have implications for the ability of access seekers to compete effectively with the incumbent, and ultimately, the interests of end users will be harmed.

Trench sharing

- 9.32 Trench sharing is an important aspect of any forward looking model, as when trenches are shared by the incumbent and other telecommunications companies and utilities, line costs are significantly reduced. The trench sharing parameter must reflect forward-looking efficient operator practice, as otherwise, there will be inefficient pricing and inefficient entry. The importance of the trench sharing parameter is highlighted by the fact that trenches comprised 47% of the total access network investment in the n/e/r/a-ACCC model.
- 9.33 In a forward-looking model, the trench sharing of an efficient operator that rolls out network today is the relevant measure. The new build operator would have greater scope and incentives for trench sharing than Telstra has done historically. The trench sharing parameter should reflect best in use technology today; not an aggregate of what Telstra has done historically.

- 9.34 Trench sharing estimates based on Telstra's historical practice is inappropriate as, for much of its history, Telstra has enjoyed what could be describe as a "soft" budget constraint. It historically made large losses, which the Government absorbed, in the belief that the social benefits of a ubiquitous network were worth the cost. As such, Telstra had no incentive to share trenches, or minimise costs.
- 9.35 Even when Telstra was put on a more commercial footing, the price cap regulation again dulled cost minimisation incentives. Under the price cap regime since 1989, there has been little cost control incentive, as the price caps have been proxy rate of return regulation. Telstra's losses were funded by Government and managers were not held accountable to shareholders.
- 9.36 By corollary, Telstra currently has trenches and ducts, generally non-shared, because historically the incumbent rolled out these trenches when it had little incentive to share.
- 9.37 A good approximation of what an efficient operator would do when rolling out a network is can be observed as the best in commercial use approach today. The best in commercial use approach was shown when Optus entered into extensive lease arrangements with utilities when rolling out its HFC network.
- 9.38 Alternatively, it can be observed that in a forward looking manner, Telstra already shares trenches with 1.5 other companies on average. This again provides a reasonable input for a forward-looking model.
- 9.39 From previous experience with TSLRIC models in Australia we see inadequate sharing assumptions. This has arisen due to misunderstanding or misrepresentations of the degree of trench sharing between the CAN and CCN (or the IEN) as well as the trenches shared between fixed voice telephony and other Telstra business, including mobile, data transmission, retail data and various other services that share the trenches.

O&M Costs

- 9.40 Similarly, network O&M costs should be based on forward-looking efficient costs, as opposed to Telstra's historical costs. Use of historical costs would mean that access seekers would be punished for the inefficient past practices of Telstra.
- 9.41 As discussed above, historically Telstra enjoyed an institutional and regulatory environment that provided very few incentives for cost minimisation or operating efficiencies. To the contrary, economic theory maintains that public monopolies operating under rate of return regulation will tend to over capitalise and gold plate their operating practices.
- 9.42 Telstra now functions under an entirely different environment. The introduction of competition and changes to the regulatory regime means that Telstra now faces a new set of incentives, characterised predominantly for the need for efficiency.
- 9.43 To this extent, Telstra's O&M costs are now constrained by the need to minimise costs. Telstra can no longer maintain any excessive O&M costs in

the manner it previously could, for risk of placing itself at a relative competitive disadvantage.

- 9.44 It is therefore unclear why access prices, and ultimately the prices facing end users of telecommunications services, should reflect Telstra's historic O&M costs that it incurred while operating under a vastly different regulatory environment. Optus submits that using Telstra's historical O&M costs as a basis for establishing access prices will have the effect of partially negating the benefits of competition and deregulation.
- 9.45 Optus believes that the appropriate treatment of O&M costs would comprise assessing the forward-looking costs that would accrue to an efficient operator utilising the best in use technology and operating practices.

WACC

- 9.46 The appropriate value of the individual WACC parameters has been discussed in detail on many separate occasions and the ACCC has taken a position on the WACC parameters in its assessment of Telstra's previous Undertaking and in its role in the regulation of other utilities (including electricity transmission).
- 9.47 Nonetheless, market conditions change over time and the WACC parameters need to be updated on an ongoing basis to reflect these changes. While many of our arguments remain unchanged from previous submissions, Optus believes that the impact of most of the Ralph Business Taxation Reforms should now be realised, and this should be reflected in the ACCC's approach to compensating Telstra for the cost of tax. Further, we suggest a number of minor adjustments to the WACC parameters.
- 9.48 The following sections traverse some of the relevant issues that the ACCC should give regard to in its analysis.

Compensation for the cost of tax

- 9.49 Access prices must provide a sufficient return to cover the real cost of financing the regulated asset base (the WACC multiplied by the asset base) plus all other costs – including operating expenses, depreciation and the cost of company tax; that is, the return on assets required by investors after they have incurred (and paid) all other costs associated with running the business. However, unlike the costs of doing business, estimating the cost of company tax to equity investors in a business involves:
- Establishing the amount of company tax paid.
 - Estimating the proportion of that tax which is actually a cost to equity investors.³⁵
- 9.50 There are a number of approaches to establishing the tax paid by the business. These include:

³⁵ This second component is dealt with below in the discussion of imputation credits and their value.

- (a) A simple transformation approach which grosses up the regulatory return on equity in the WACC equation by the statutory (or effective) tax rate multiplied by $1-\gamma$.
 - (b) A direct pass through of the actual tax payments multiplied by $1-\gamma$.
 - (c) A post tax model involving direct modelling of the expected tax paid multiplied by $1-\gamma$.
- 9.51 Telstra's most recent Undertakings uses a post tax modelling approach that uses a statutory tax rate of 30%. The cost of tax is then treated like all other cost building blocks in arriving at the access prices within the Undertakings.
- 9.52 Optus argues that the simple transformation approach (using either a statutory or effective tax rate) is inappropriate as it assumes that regulatory and taxable profits are identical. This is unlikely to be the case because nominal interest is deductible for tax purposes, and because the tax and regulatory depreciation rates differ.
- 9.53 A direct pass through of tax is intuitively appealing, but to be applied in practice would require a forecast of the tax paid and may require a correction mechanism. This could not be incorporated into either the indicative prices or the Undertakings.
- 9.54 It is therefore appropriate, in Optus' view to adopt a post tax modelling approach to the expected tax costs. In undertaking the tax modelling, consideration should be given to a number of parameters including
- Taxation rate.
 - Gearing ratios.
 - Asset values.
 - Asset lives.
- 9.55 Optus believes that a statutory rate of taxation is not reflective of a competitive PSTN operator, and that using the statutory rate will over-estimate the WACC because of the effects of gearing, interest rates, operating expenses, and in particular the continued benefits received from accelerated depreciation. Use of the effective rate of taxation has a strong precedent in regulatory decisions worldwide, and the efficiency benefits of doing so are well known.
- 9.56 With respect to accelerated depreciation, the recent Ralph reforms removed the ability of firms to use accelerated depreciation on assets acquired after 21 September 1999. Use of a pure forward looking approach to estimating a reasonable return on capital would mean that any benefits received by Telstra through accelerated depreciation would have to be ignored, given that if the network was to be rebuilt today, accelerated depreciation could not be used.
- 9.57 However, Optus strongly urges the ACCC to recognise that in reality, Telstra has in the past and will continue to reap significant advantages from accelerated depreciation. Indeed, the vast majority of Telstra's long-lived assets were acquired pre-Ralph, meaning that Telstra has received the benefits of accelerate the depreciation of these assets. We also note that even post-

Ralph, the tax depreciation rates (based largely on accounting lives) continue to provide a tax benefit to infrastructure owners given the economic lives of assets will generally be longer. Ignoring this reality would enable Telstra to receive a return in excess of a fair and reasonable rate. This would directly harm the interests of access seekers, and ultimately, end users.

- 9.58 Gearing ratios describe the capital structure of the firm. The tax deductibility of the cost of debt means that on an after-tax basis, substituting debt for equity within the capital structure can reduce the WACC. By the same token, investors can also use the gearing ratio as a means for estimating the risk of an investment. The higher the proportion of the company funding by debt, the higher the perceived financial and bankruptcy risk exposure of the business. By corollary, with high debt levels investors will demand higher return on their investment capital.
- 9.59 The optimal gearing ratio can vary substantially amongst firms. Key elements in determining the optimal gearing ratio of an individual firm are the ability of the firm to repay debt, and the ability of the firm to raise debt in capital markets. Therefore, a firm backed by sound financial fundamentals can be expected to have a relatively high optimal gearing ratio.
- 9.60 In the context of the Australian telecommunications market, an optimised access provider will have an excellent credit rating and therefore its ability to raise capital will be high. Further, the debt risk of the firm will be low, particularly in light of the high profitability of Telstra. This debt risk will be further reduced when the time frame for the debt risk is viewed only in terms of the period that the indicative prices will be current is taken into account, and the favourable interest rate outlook.
- 9.61 It could also be argued that Telstra's status as being partially government owned will give some reassurance to investors and probably allows it to withstand higher gearing ratios than comparable companies in private ownership.
- 9.62 As alluded to earlier, the relevant risk factors should not relate to Telstra in its current state, but rather Telstra in an optimised state. Optus submits that this would be relatively low. On balance, the advantages associated with funding an optimised Telstra through debt are more than likely to outweigh the increased risks to a very high gearing ratios. Telstra's book ratio is irrelevant to the extent that:
- It may fail to fully utilise the available tax advantages of debt funding; and
 - The risks of high debt of Telstra in its current form will be higher than the risks of a fully efficient firm with an optimised network.
- 9.63 Optus notes that the ACCC has used a gearing ratio of 60% in the past with respect to Transgrid, Adelaide Airport and CWPipeline. We believe that the risks faced by these firms would be higher than those faced by an incumbent telecommunications carrier. Consequently, we believe that Telstra could withstand a gearing ratio of greater than 60%.

9.64 In summary, Optus recommends that the ACCC adopt a gearing ratio of at least 60% for the purposes of estimating the appropriate WACC.

Imputation factor

9.65 The imputation factor represents the degree to which imputation credits are valued by equity investors. It attempts to remove double taxation from the calculation of the cost of capital formula by accounting for the implementation of the imputation tax credit system. Franking credits effectively represent, at the company level, personal tax collected or withheld.

9.66 Since July 2000, changes to the Australian taxation system through the Ralph reforms have made all tax credits refundable. It is therefore reasonable to posit that investors will now place a greater value on imputation tax credits than previously. Further, awareness amongst Australian investors of their ability to take advantage of these tax credits has grown, and is most likely to be at, or very close to, 100%.

9.67 There are a number of factors that could reduce the imputation factor to below one, as follows:

- The firm may decide not to pay all profits out as dividends, leading to the deferral of payment of imputation credits.
- Investors are unable to take advantage of imputation credits because the investor is based in a country that does not allow the use of Australian tax credits to offset taxation liabilities.

9.68 Optus believes that these factors should have little impact on the return Telstra is able to receive on its capital.

9.69 With respect to the first point, Optus would argue that the average investor is sufficiently rational to recognise that the failure of a firm to pay out all profits as dividends is generally due to profits being put back into the business in an attempt to enhance future profits. To this extent, investors will recognise that deferral of imputation credits may increase future dividends, and therefore increase the value of future imputation credits over and above what would have been received if all profits had been paid out as dividends immediately. We observe that the value of shares will rise by the full value of imputation credits retained.

9.70 With respect to the second point regarding the inability of some investors to utilise their tax credits, Optus again argues that this should have minimal impact in reducing the imputation factor below one. Optus believes that the proportion of investors based in countries that do not recognise Australian tax credits is low. International tax treaties have expanded the base of investors able to enjoy the benefits of Australian tax credits. Notably, taxation treaties exist between Australia and its most prominent investor markets: the United States, the United Kingdom and Europe.

9.71 Telstra has previously argued that its shareholders have a lower ability to utilise imputation credits relative to the market average, and that therefore the imputation factor should be set closer to zero rather than one. Using the logic set out above, it is clear that this argument is entirely inappropriate and would

result in a distortion of Telstra's investment returns relative to other investments. This, in turn, would distort investment patterns of the 'average' investor in the market.

- 9.72 Optus submits that the imputation factor of the investor is one. This reflects the fact that the equity investor is able to fully utilise imputation credits, and that investors are sufficiently rational to value the deferral of imputation credits insofar as it may lead to increase future returns.
- 9.73 If the ACCC were to decide that the inability of the non-domestic investor to utilise imputation credits was sufficiently significant to justify an imputation factor of less than one, then the ACCC may need to adopt other WACC parameters that reflect conditions in the international market place; not the Australian market. In particular, the market risk premium, beta values and the effective tax rate would need to be lowered.
- 9.74 Finally, it is clear that in light of the Ralph reforms the imputation factor adopted by the ACCC should be higher than levels adopted in previous regulatory decisions.

Risk-free rate

- 9.75 The risk-free rate used in the calculation of the WACC should correspond with the length of period that the indicative prices will remain current, that is, 3 years. Optus notes that the PIE 2 model derives the risk free rate from the 10-year Government bond. It is entirely inappropriate to base the risk free rate on a 10-year bond because this would compensate pricing risk beyond the three-year period of the Undertaking. The period should correspond to the period Telstra is bearing the risk.
- 9.76 The practice of selecting a risk free rate that matches the duration of the regulatory determination has precedent in recent regulatory determinations.
- 9.77 Further, the PIE 2 model appears to fails to average the bond rate. Averaging is important as it corrects for on-the-day bond fluctuations, and manages the risk of under or over estimating the risk-free rate. Optus notes that in the past the ACCC has adopted a 40-day moving average. This would appear to be an acceptable alternative Telstra's approach.
- 9.78 As at 28 April 2004, the 40-day moving average government bond rate is 4.58%, where the 3-year rate is derived through averaging the 2 and 5-year bonds.

Market Risk Premium

- 9.79 Telstra has set a Market Risk Premium (MPR) of 7% for the purposes of its most recent Undertaking. Optus is of the view that this rate is well in excess of the actual rates reflected in the market.
- 9.80 It is widely accepted that the MRP has fallen in recent years. This can, in part, be attributed to a more stable inflationary environment. Optus presented a wide of evidence in its 1999 submission on Telstra's PSTN Undertaking that

the MRP is has collapsed to around 3% and is converging on its “proper” level of 0%.

- 9.81 In addition, better methods are emerging for estimating its value and the results from application of these new methods tend to suggest that the MRP has been over estimated in the past. In this context, given that the appropriate focus for this review is to establish a forward looking WACC, it should reflect that fact that the MRP has fallen and is continuing to do so.
- 9.82 As discussed above, if the ACCC decides that the imputation factor should, to some extent, reflect the inability of some non-domestic investors to utilise imputation credits, then the MRP should reflect the international market risk rather than the domestic market risk. The international MRP is likely to be lower to reflect the enhanced ability of investors to diversify across a wider range of investment products.
- 9.83 In light of these arguments, Optus submits that the ACCC should adopt an MRP of no greater than 3%.

Asset Beta

- 9.84 In theory, the only risks that are captured by beta are those risks that cannot be eliminated by the investor through diversification. Such risks are referred to as systematic, undiversifiable and uninsurable risk.
- 9.85 If the net returns from an asset are correlated with the returns from the general market then the beta associated with that asset will be positive. The greater the correlation (covariance) the higher the asset beta. However, if there is a zero covariance the asset beta will be zero and if there is a negative covariance (ie, the returns on the asset increase as the returns on the market decrease) the asset beta for that asset will be negative.
- 9.86 Clearly, the asset beta is a function of the variability of revenues with general market conditions. The main source of any such covariance in the case of Telstra’s assets is through an output factor. If general economic conditions are good then demand for Telstra’s PSTN is likely to be higher than when general economic conditions are poor. To the extent that Telstra as a pure wholesaler of PSTN services (ie, abstracting from any other services Telstra provides including downstream services) would have net revenues that vary with demand for the PSTN then it is appropriate for Telstra to have an asset beta that is greater than zero.
- 9.87 However, the regulation of Telstra’s PSTN prices is such that any change in actual volumes results in a commensurate change in prices – with revenues largely unchanged. Given the form of regulation of PSTN prices largely protects Telstra’s PSTN revenue stream from the affects of changes in demand for PSTN services it is not obvious why an asset beta of greater than zero is being contemplated.
- 9.88 Optus submits that unless the regulation of PSTN revenues exposes Telstra to significant volume risk its PSTN asset beta should be set equal to zero.

Cost of Debt

- 9.89 The cost of debt is calculated as the risk-free rate-of-return plus a debt premium. The debt premium is added to cover investors for the specific debt risk of the firm in question. Optus submits that the debt premium should be set to zero or very close to zero.

Option value

- 9.90 In Telstra's Undertakings, the WACC does not include an allowance for asymmetric risks that are systematic and non-diversifiable.
- 9.91 Telstra comments that the WACC should be adjusted to allow for the implicit insurance costs of the various asymmetric risks. Telstra says that it is currently working on quantifying this parameter, which will most likely involve a percentage mark-up applied to the nominal post-tax vanilla WACC. It is unclear whether this parameter is going to be included in the current Undertaking once it has been quantified.
- 9.92 Optus submits that there is very little evidence that Telstra does face any risks over and above those accounted for by the risk parameters included in the general WACC equation. As such, we would strongly oppose any inclusion of an option value parameter in the WACC.

Annualised costs

- 9.93 In Telstra's Undertaking, the capital costs are converted into an annual capital charge that reflect the cost of capital and depreciation.
- 9.94 As discussed earlier, Optus believes that the ACCC should adopt an economic approach to depreciation rather than accounting approach. Optus notes that the value of the annual capital charges will be very sensitive to the useful life of the asset. To the extent the accounting asset life will not reflect the *true* useful life of the asset, the economic approach to depreciation will enable the derivation of significantly more accurate annualised costs. Under economic depreciation, assets are depreciated on the basis of their actual expected useful life spans
- 9.95 Optus is concerned with Telstra's use of a tilted annuity factor. A tilt is sometimes used to account for the higher depreciation costs of assets as a result of falling asset prices and the risk of obsolescence. For the purposes of setting indicative prices for the forthcoming regulatory period, Optus believes that it would be inappropriate to use a tilt as a means of front-loading costs.
- 9.96 Pricing decisions for previous regulatory periods have reflected the full extent of the tilt. Therefore, Optus argues that prices under subsequent regulatory periods should reflect depreciation costs with a lower degree of front-loading than previous periods. We recognise that use of a pure forward looking approach might suggest this approach in favour of resetting the depreciation costs at the beginning of each regulatory period to reflect the full costs accruing to a firm with new optimised assets.

9.97 However, if the asset base is reset and the annuity tilted, Telstra will be in effect over-recovering its return of capital. Optus believes the ACCC must establish a regime in which depreciation recovers precisely the difference between the opening and closing values of the asset base. This will only be achieved by either:

- (a) Setting indicative prices based on rolling forward the asset base (adding only prudently incurred capital expenditure) in the n/e/r/a-ACCC model.
- (b) Adjusting the PIE 2 model to account for the addition depreciation component already received by Telstra as a result of the tilting of the annuity in past prices.