



Australian  
Competition &  
Consumer  
Commission

**Assessment of Telstra's Unconditioned Local Loop  
Service Band 2 monthly charge undertaking**

**Final Decision**

**Public Version**

**April 2009**



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## Abbreviations

ADSL	Asymmetric digital subscriber line
CAM	Customer access module
CAN	Customer access network
CAPM	Capital asset pricing model
CMUX	Customer multiplexer
COLR	Carrier of last resort
CSPs	Carriage service providers
DA	Distribution area
DC	Direct current
DSL	Digital subscriber line
DSLAM	Digital subscriber line access multiplexer
ERP	Equity risk premium
ESA	Exchange service area
FTTN	Fibre to the node
IDD	International Direct Dial
IDF	Intermediate distribution frame
IEN	Inter-exchange network
IRIM	Integrated remote integrated multiplexer
LAN	Local area network
LAS	Local access switch
LCS	Local Carriage Service
LRIC	Long run incremental cost
LSS	Line sharing service
LTIE	Long Term Interests of End-users
MEA	Modern equivalent asset

MRP	Market risk premium
NBN	National Broadband Network
NTP	Network termination point
O&M costs	Operational and maintenance costs
PIE	PSTN Ingress and Egress model
POI	Point of interconnection
PSTN	Public Switched Telephone Network
PSTN O/T	PSTN Originating and Terminating Access Services
RAF	Regulatory accounting framework
RAU	Remote access unit
RBOC	Regional Bell Operating Company
RIM	Remote integrated multiplexer
RSS/RSU	Remote switching stage/ remote switching unit
SAOs	Standard Access Obligations
SIO	Services in operation
STD	Subscriber Trunk Dialling
STS	Standard telephone service
TCAM	Telstra Customer Access Module
TEA model	Telstra Efficient Access model
TELRIC	Total element long-run incremental cost
TPA	<i>Trade Practices Act 1974</i>
TS	Transit switch
TSLRIC	Total service long-run incremental cost
TSLRIC+	Total service long-run incremental cost plus indirect costs
ULLS	Unconditioned Local Loop Service
USF	Universal Service Fund

USO	Universal Service Obligation
VoIP	Voice over IP
WACC	Weighted average cost of capital

# Footnote abbreviations

## Submissions

<b>Name of Party</b>	<b>Abbreviation</b>	<b>Full Reference</b>
Adam Internet et al	<i>Response to the ACCC's discussion paper</i>	<i>Telstra's Access Undertaking For The Unconditioned Local Loop Service - Response To ACCC Discussion Paper Dated June 2008, August 2008.</i>
Adam Internet et al	<i>Response to the ACCC's Draft Decision</i>	<i>Telstra's Band 2 Monthly Charge Access Undertaking For The Unconditioned Local Loop Service – Response To ACCC Draft Decision Dated November 2008, 23 December 2008.</i>
Competitive Carriers Coalition	<i>CCC's submission on Draft Decision</i>	<i>CCC Submission on Draft Decision, 15 December 2008.</i>
Dr. Robert G. Harris and Dr. William Fitzsimmons	<i>Assessment of the TEA model</i>	<i>An Assessment of Telstra's TEA Cost Model for Use in the Costing and Pricing of Unconditioned Local Loop Services (ULLS), 4 November 2008.</i>
Ingenius Consulting Network	<i>Report for Telstra</i>	<i>Commentary on the use of international benchmarking in setting interconnection rates, A report from the Ingenious Consulting Network, December 2008.</i>
Marsden Jacob Associates	<i>Review of the TEA model</i>	<i>Review of the TEA model – A report prepared for Competitive Carriers Coalition, 12 August 2008.</i>
Telstra	<i>Modifications in v1.2 of the TEA model</i>	<i>Telstra's Ordinary Access Undertaking for the Unconditioned Local Loop Service: Modifications in v1.2 of the TEA model, 10 September 2008.</i>
Network Strategies	<i>Report for Optus</i>	<i>Report for Optus – Review of Telstra TEA model version 1.1 – ULLS undertaking, 5 September 2008.</i>
Network Strategies	<i>Draft decision issues paper</i>	<i>TEA Model: Issues from ACCC Draft Decision, 2 December 2008.</i>
Network Strategies	<i>Additional comments on the TEA model</i>	<i>Review of Telstra TEA model version 1.1 – additional comments, 19 December 2008.</i>
Optus	<i>Response to the ACCC's discussion paper</i>	<i>Telstra's Access Undertaking for the Unconditioned Local Loop Service: Response to Discussion Paper, August 2008.</i>
Optus	<i>Response to the ACCC's Draft Decision</i>	<i>Telstra's Access Undertaking for the Unconditioned Local Loop Service: Response to Draft Decision, December 2008.</i>

Ovum	<i>International WACC benchmark review</i>	<i>Telstra Efficient Access cost model – International WACC benchmark, 28 January 2009.</i>
Ovum	<i>TEA model (v1.0) economic review</i>	<i>Review of the economic principles, capital cost and expense calculations of the Telstra Efficient Access Model, 6 August 2008.</i>
Ovum	<i>TEA model (v1.0) engineering review</i>	<i>Review of the network design and engineering rules of the Telstra Efficient Access cost model, 6 August 2008.</i>
Ovum	<i>TEA model (v1.0) operability review</i>	<i>Review of the operability of the Telstra Efficient Access cost model, 6 August 2008.</i>
Ovum	<i>TEA model (v1.2) engineering review</i>	<i>Telstra Efficient Access cost model – engineering issues, 2 February 2009.</i>
Ovum	<i>TEA model (v1.2) economic review</i>	<i>Telstra Efficient Access cost model – economic issues, 5 February 2009.</i>
Ovum	<i>ULLS benchmarking review</i>	<i>Telstra ULLS Undertaking – ULLS International Benchmarking, 26 February 2009.</i>
Bowman, RG	<i>Report on WACC</i>	<i>Report on the Appropriate Weighted Average Cost of Capital for the Services provided over the CAN, May 2007.</i>
Telstra	<i>Model documentation submissions (3 March)</i>	<i>Telstra’s Efficient Access Model, Model Documentation, 3 March 2008.</i>
Telstra	<i>Undertaking is reasonable</i>	<i>Telstra’s ULLS Undertaking is Reasonable, 4 April 2008.</i>
Telstra	<i>WACC submission</i>	<i>Weighted Average Cost of Capital, 4 April 2008.</i>
Telstra	<i>Model documentation submission</i>	<i>Telstra’s Efficient Access Model, Model Documentation: Addendum, 6 August 2008.</i>
Telstra	<i>Telstra’s response to the ACCC’s Discussion Paper</i>	<i>Telstra’s Ordinary Access Undertaking for the Unconditioned Local Loop Service: Response to the ACCC’s Discussion Paper dated June 2008, 12 August 2008.</i>
Telstra	<i>TEA model efficiency</i>	<i>Measure of TEA Model Efficiency, 8 September 2008.</i>
Telstra	<i>Response to access seeker submissions</i>	<i>Telstra’s Ordinary Access Undertaking for the Unconditioned Local Loop Service: Response to Access Seeker Submissions, 18 November 2008.</i>
Telstra	<i>Response to Ovum</i>	<i>Telstra’s Ordinary Access Undertaking for the Unconditioned Local Loop Service: Response to Ovum’s Submissions, 5 December 2008.</i>
Telstra	<i>Telstra’s response to the ACCC’s Draft Decision</i>	<i>Telstra’s Ordinary Access Undertaking for the Unconditioned Local Loop Service: Response to the ACCC’s Draft Decision, 23 December 2008.</i>

Telstra	<i>Telstra's response to the ACCC's December request for further information</i>	<i>Telstra's Response to the ACCC's request for further information on Telstra's Band 2 ULLS undertaking made pursuant to s152BT of the Trade Practices Act dated 23 January 2008, 13 March 2009.</i>
Telstra	<i>Telstra's response to the ACCC's January request for further information</i>	<i>Telstra's Response to the ACCC's request for further information on Telstra's Band 2 ULLS undertaking made pursuant to s152BT of the Trade Practices Act dated 16 December 2008, 13 March 2009.</i>
NERA	<i>TSLRIC+ assessment</i>	<i>Does Telstra's TEA Model Provide a Reasonable Estimate of the TSLRIC+ of Supplying ULLS?, 16 January 2009.</i>
Unwired	<i>Unwired's response to the ACCC's Draft Decision</i>	<i>Submission in response to Assessment of Telstra's Unconditioned Local Loop Service Band 2 monthly charge undertaking- Draft Decision November 2008 and Draft MTAS Pricing Principles Determination November 2008, 16 January 2009.</i>
William B. Tye	<i>Conference paper</i>	<i>Competitive Neutrality: Regulating Interconnection Disputes in the Transition to Competition, Conference Paper, ACCC Regulation and Competition Conference, July 25-26 2002.</i>

## ACCC Publications

<b>Abbreviation</b>	<b>Full Reference</b>
<i>2006 ACCC final decision</i>	<i>ACCC, Assessment of Telstra's ULLS monthly charge undertaking – Final Decision, August 2006.</i>
<i>2008 ACCC Draft Decision</i>	<i>ACCC, Assessment of Telstra's Unconditioned Local Loop Service Band 2 monthly charge Undertaking – Draft Decision, November 2008.</i>
<i>2008 ACCC Discussion Paper</i>	<i>ACCC, Telstra's Access Undertaking for the Unconditioned Local Loop Service – Discussion Paper, June 2008.</i>
<i>2008 ACCC pricing principles</i>	<i>ACCC, Unconditioned Local Loop Service Pricing Principles and Indicative Prices, June 2008.</i>

## Telstra Undertakings and Supporting Materials

<b>Abbreviation</b>	<b>Full Reference</b>
<i>2003 Undertaking</i>	Telstra, <i>Telstra Access Undertaking to the Australian Competition and Consumer Commission under Division 5 of Part XIC of the Trade Practices Act 1974 (Cth)</i> , 9 January 2003.
<i>2003 Replacement Undertaking</i>	Telstra, <i>Telstra Access Undertaking to the Australian Competition and Consumer Commission under Division 5 of Part XIC of the Trade Practices Act 1974 (Cth)</i> , 14 November 2003.
<i>2004 Undertaking</i>	Telstra, <i>Telstra Access Undertaking to the Australian Competition and Consumer Commission under Division 5 of Part XIC of the Trade Practices Act 1974 (Cth)</i> , 13 December 2004.
<i>2005 Undertaking</i>	Telstra, <i>Telstra Access Undertaking to the Australian Competition and Consumer Commission under Division 5 of Part XIC of the Trade Practices Act 1974 (Cth)</i> , <i>ULLS Monthly Charges 2006-2007</i> , 23 December 2005.
<i>2007 Undertaking</i>	Telstra, <i>Telstra Ordinary Access Undertaking to the Australian Competition and Consumer Commission under Division 5 of Part XIC of the Trade Practices Act 1974 (Cth)</i> , 21 December 2007.
<i>2008 Undertaking</i>	Telstra, <i>Telstra Ordinary Access Undertaking to the Australian Competition and Consumer Commission under Division 5 of Part XIC of the Trade Practices Act 1974 (Cth)</i> , 3 March 2008.
<i>TEA model user guide</i>	Telstra, <i>Telstra's Efficient Access Model, User Guide</i> , 3 March 2008.
<i>Overview of TEA model</i>	Telstra, <i>Telstra's Efficient Access Model, Overview</i> , 3 March 2008.
<i>Engineering rules</i>	Telstra, <i>Access Network Dimensioning Rules, Incremental costing model input</i> , 3 March 2008.
<i>Factor calculation</i>	Telstra, <i>Factor Calculation</i> , 11 April 2008 (Microsoft Excel spreadsheet).
<i>Modifications to TEA model (v1.1)</i>	Telstra, <i>Modifications included in TEA Version 1.1</i> , 6 August 2008.
<i>O&amp;M and indirect cost factor study</i>	Telstra, <i>Operations and Maintenance and Indirect Cost Factor Study</i> , 7 April 2008.

<i>Modifications to the TEA model (v 1.2)</i>	Telstra, <i>Telstra's Ordinary Access Undertaking for the Unconditioned Local Loop Service: Modifications in v1.2 of the TEA model</i> , 10 September 2008
<i>TEA model overview</i>	Telstra, <i>Telstra's Efficient Access Model (TEA) Overview</i> , 21 December 2007.
<i>Confidentiality claim on route optimisation</i>	Telstra Letter re: <i>Telstra's Band 2 ULLS Undertaking – Confidentiality Claim on TEA Model Route Optimisation Process report and witness statement</i> , 13 January 2009
<i>Statement of A</i>	[begin c-i-c] [redacted] [end c-i-c], 18 November 2008.
<i>Route optimisation process</i>	Telstra, <i>TEA Model Route Optimisation Process</i> , 18 November 2008.
<i>Factor calculations</i>	Telstra, <i>Factor Calculation</i> , 18 February 2009 (Microsoft Excel spreadsheet).
<i>Request for NERA</i>	Telstra, <i>Telstra's Band 2 ULLS Undertaking – request for access to NERA Model</i> , 26 February 2009.

# Glossary

Access Provider	Carrier or carriage service provider who supplies declared services to itself or other persons defined in section 152AR of the TPA.
Access Seeker	Service provider who makes, or proposes to make, a request for access to a declared service under section 152AR of the TPA.
Customer access network	The network which enables the connection of telephones and other customer premises equipment to switching technology. It consists of a network of conduits and pipes in the ground with a mixture of cables containing copper wires and optical fibres. It has two parts – the distribution network and the feeder network.
Distribution network	That part of the customer access network connecting the distribution point (typically a pillar) to the network termination point.
Exchange	A generic term for a major node in an exchange service area (e.g. an IRIM, RSS/RSU, LAS, TS).
Feeder network	That part of the customer access network connecting the exchange to the distribution point (typically a pillar).
Integrated remote integrated multiplexer	This device consists of a protective housing cable and optical fibre terminating strips, and multiplexing equipment, erected in street-based housing. ‘Integrated’ means that the housing contains multiplexers that enable different services to be carried over the same transmission cable (i.e. special services, telephone services, public telephone services, ISDN services). The transmission protocol used to provide carriage services is integrated with the telephone exchange software.
Inter-exchange network	The network connecting exchanges to each other.
Integrated Services Digital Network	The ISDN is a network that has evolved from the PSTN. ISDN services enable end users to send and receive information at faster speeds and with greater reliability than is possible using the standard PSTN service. ISDN services are used for the carriage of information such as voice, data, high quality sound, text, still images and video.
Local access switch	This equipment provides ring current, dial tone and battery feed to end-users, as well as switching calls locally

to other local access switches. It also provides number analysis for call routing and call charge recording, and enhanced (or supplementary) services such as call waiting and call diversion.

Multiplexer	A device that combines two or more signals into a single composite data stream for transmission on a single channel.
Network termination point	The termination point of the public switched telephone network at the end-user's premises. Cabling beyond this point is customer wiring.
Pre-selection	Function that enables an end-user or service provider to select a preferred carrier or carriage service provider for a certain type of call (e.g. long distance calls).
Remote subscriber stage	A customer access module of the LM Ericsson AXE telephone switching exchange located in buildings remote from the group switching function.
Remote subscriber unit	A customer access module of the Alcatel S12 telephone switching exchange located in buildings remote from the group switching function.
Service provider	Defined in section 86 of the <i>Telecommunications Act 1997</i> . Means a carriage service provider or a content service provider.
Total service long run incremental cost	See Australian Competition and Consumer Commission, <i>Access Pricing Principles – Telecommunications: A guide</i> , July 1997, and Australian Competition and Consumer Commission, <i>Unconditioned Local Loop Service, Pricing Principles and Indicative Prices</i> , June 2008.

## Executive Summary

On 3 March 2008, Telstra Corporation Limited (Telstra) lodged an ordinary access undertaking (2008 Undertaking) with the ACCC. This Undertaking specifies certain terms and conditions under which Telstra will meet its standard access obligations (SAOs) in respect of the unconditioned local loop (ULLS).

The ULLS is most commonly a twisted copper wire pair that provides a communications path between the telephone exchange and the consumer or business end-user premises. As a result, the ULLS is an essential input used by other telecommunications access seekers in combination with their own equipment to provide competitive telephony and high-speed broadband services to consumers and businesses.

Telstra proposed a monthly charge of \$30 to be paid by access seekers for access to the ULLS in metropolitan areas. This charge is substantially above the currently regulated access price of \$16.75<sup>1</sup>. Telstra also propose that the \$30 charge may be increased to \$46.54. The higher charge was estimated by Telstra using its submitted cost model, version 1.3 of the Telstra Efficient Access Model (TEA Model). Several non-price terms were also proposed.

The ACCC considers the 2008 Undertaking:

- is unlikely to promote the long term interests of end-users, as it will not promote competition and will not encourage the economically efficient use of, and investment in infrastructure;
- will result in Telstra recovering more revenue than is necessary to promote Telstra's legitimate business interests;
- will harm the interests of access seekers and persons who have rights to use the service;
- contains price terms which will exceed the direct costs of providing access;
- does not have a material effect on the operational and technical requirements necessary for the safe and reliable operation of telecommunications services; and
- is not likely to facilitate the economically efficient operation of the ULLS.

Accordingly, the ACCC is not satisfied that the terms and conditions in the 2008 Undertaking are consistent with the legislative criteria and are reasonable.

Hence, the ACCC has made a final decision to reject Telstra's 2008 undertaking in respect of metropolitan areas (Band 2 exchange service areas).

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<sup>1</sup> includes a proxy ULLS specific charge of \$2.45.

## E1 Assessing the 2008 Undertaking

The ACCC relies on various sources of information to assist it in determining whether the 2008 Undertaking satisfies the legislative criteria.<sup>2</sup>

The ACCC discusses the following key sources of information used in this final decision to determine whether the 2008 Undertaking is reasonable:

- Telstra's implementation of the Total Service Long Run Incremental Cost Plus (TSLRIC+, where 'plus' refers to an adjustment allowed to recover common costs);
- results from a comparison of international local loop prices with Telstra's proposed \$30 price;
- trend in ULLS prices and uptake overtime; and
- preliminary results from the Analysys cost model which provides guidance on the range of possible cost estimates.

### Telstra's implementation of TSLRIC+

The ACCC considers TSLRIC+ to be a broad theoretical concept which can be implemented in a number of different ways, depending on how costs are measured and allocated, and the parameter values and underlying network assumptions used to produce cost estimates.

The ACCC has previously provided broad guidance on how it would expect the TSLRIC+ of a regulated service to be implemented. This is set out in the ACCC's *Access Pricing Principles - Telecommunications, a guide*<sup>3</sup> and more recently in the ACCC's *Pricing Principles for Unconditioned Local Loop Service, Pricing Principles and Indicative Prices*.<sup>4</sup>

In assessing Telstra's implementation of TSLRIC+ in its TEA model, the ACCC considered whether it was satisfied that Telstra's implementation of the TSLRIC+ concept (the parameter values and underlying assumptions regarding network design applied by Telstra in the TEA model) result in cost estimates that, on balance, meet the legislative criteria.

The TEA model has been through several revisions during the undertaking assessment period as corrections were made by Telstra to errors identified by other parties.

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<sup>2</sup> In particular that the terms of the undertaking are reasonable under section 152AH of the *Trade Practices Act 1974* (TPA),

<sup>3</sup> ACCC, *Access Pricing Principles - Telecommunications, a guide*, 1997.

<sup>4</sup> ACCC, *Pricing Principles for Unconditioned Local Loop Service Amendment Determination 2008 (No.1)*, p.5.

### *Inherent inconsistency with Telstra's implementation of TSLRIC+*

In practice, TSLRIC+ estimates are generally modelled on the concept of a 'hypothetical operator' building a 'hypothetical network'.

The ACCC considers that when TSLRIC+ is implemented assuming best-in-use technology and an optimised hypothetical network design, estimates are likely to reflect the hypothetical operator's efficient and forward-looking costs of providing the regulated service. Costs that are efficient and forward-looking are likely to create signals to efficiently build infrastructure where bypass is possible, or buy the regulated service.

The ACCC observes that there is inherent inconsistency in Telstra's implementation of TSLRIC+. In particular, Telstra has been inconsistent in its application of the hypothetical operator – sometimes applying costing and network design assumptions of the incumbent with a legacy network design network and other times, costings associated with a new entrant. For instance, Telstra has continuously referred to its TSLRIC+ model as producing cost estimates faced by a new entrant, yet its model is based on the existing Telstra network, a network design that would not be implemented by a new entrant. This inconsistency assumes that a new entrant repeats the legacy network design decisions of the incumbent, thereby increasing the cost attributed to the hypothetical network and the cost estimates for a ULLS.

The assumption of hypothetical operator is an underlying concept in the TEA model – in particular, it is a hard-coded feature which the network design depends on. Therefore, where internal inconsistencies in the application of hypothetical operator occur - such as in Telstra's implementation of TSLRIC+ in the TEA model - variable parameter values and therefore cost estimates are affected.

### *Further testing of the TEA model*

Despite its concern over Telstra's implementation of TSLRIC+, the ACCC acknowledges that Telstra has submitted the TEA model as a significant piece of material in support of its 2008 Undertaking and that the model should therefore be subject to comprehensive scrutiny. Therefore, the ACCC has:

- assessed the reasonableness of Telstra's preferred key default parameter values; and
- undertaken its own scenario run of the TEA model. The scenario run was, in part, undertaken to see what results would be achieved by attempting to overcome the inherent inconsistency in the application of hypothetical operator by Telstra.

In its assessment of Telstra's preferred key default parameter values, the ACCC considers that Telstra's implementation of TSLRIC+ over-estimates network costs and therefore does not produce cost estimates that are efficient and forward-looking.

The ACCC notes Telstra has asserted that the \$30 charge can be supported by the results of the TEA model under any reasonable set of inputs.<sup>5</sup> The ACCC has found that when the TEA model is run with other parameter values, the resulting range of estimates between \$18 - \$21 are significantly less than \$30. This leaves the ACCC with significant doubt as to whether the \$30 charge is reasonable. While this does not, of itself, mean that the ACCC cannot be satisfied of the reasonableness of the \$30 price, the ACCC does have concerns that the \$30 figure falls outside what could be considered to be a reasonable price range.

To understand the significance of the proposed \$30 charge in terms of revenue, the ACCC notes that Telstra would receive an additional \$97 million in revenue per annum<sup>6</sup> when comparing Telstra's annual revenue at the current regulated price<sup>7</sup> versus at a \$30 charge.

### **Comparison of international local loop prices with Telstra's proposed \$30 price**

In response to the ACCC's Draft Decision, interested parties submitted that the international benchmarking exercise in the Draft Decision should be more comprehensive. Accordingly, the ACCC engaged Ovum to undertake a more detailed international benchmarking analysis - taking account of similarities and differences between countries.

The results of Ovum's work shows that, even when taking into account country specific factors, the \$30 charge is still significantly higher than prices for similar unbundled local loop services in comparable countries. The significant discrepancy suggests the \$30 charge is higher than that required by an efficient operator in other comparable countries to recover costs of supplying an ULLS.

### **Trend in ULLS prices**

The ULLS price is an important factor in encouraging new investment in, and further augmentation to the ULLS-based network, as access seekers incur this cost when delivering broadband and voice services to end-users, using their own infrastructure.

The ACCC notes that since 2005-06, ULLS regulated prices have slowly increased due to higher input prices. ULLS uptake in all bands has grown during this time.

The ACCC considers that a rapid and substantial change in the monthly charge to \$30 could have the effect of distorting access seekers' incentives to invest in ULLS-based infrastructure. In particular, any further price increases to \$46.54 is likely to have a significant detrimental effect on ULLS investment.

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<sup>5</sup> Telstra letter to ACCC, titled "Telstra's March 2008 ULLS Undertaking for Band 2: Request for further information", 7 April 2008.

<sup>6</sup> \$14.30 plus a proxy for the ULLS specific charge of \$2.45

<sup>7</sup> \$97 085 400 = ULLS lines in Dec 2008 (610 600) \* 13.25 \* 12

## **Preliminary results from the Analysys cost model**

The ACCC engaged Analysys Mason Limited (Analysys) to develop a TSLRIC+ model for a range of fixed network services, including the ULLS for all areas of Australia for the period 2007-2012.

The ACCC considers that the results from the Analysys cost model can be viewed as providing a preliminary check on other model estimates. In this regard, any large disparities between the Analysys cost model estimates and other model estimates would suggest further investigation into the other models' underlying assumptions and parameter values. With this in the mind, the ACCC notes the significant difference between the current Analysys cost estimate for 2008 of \$17-\$18<sup>8</sup> and the \$30 charge.

The ACCC accepts that the Analysys cost model has yet to be finalised. The Analysys model has recently been the subject of a public consultation process, and as such may undergo modifications before being finalised. Furthermore, as was indicated in the ACCC's discussion paper on the model, the default values with which the Analysys model is populated are default values selected by Analysys, and do not necessarily reflect the ACCC's preferred values.<sup>9</sup> As a result, the ACCC considers that, whilst the Analysys model is a relevant source of information, less weight can be placed on current estimates from the Analysys model for the purposes of assessing this undertaking, than other sources of information.

## **Examination of Regulatory Accounting Framework data**

The ACCC examined Telstra's returns under the Telecommunications Industry Regulatory Accounting Framework (RAF) in order to reach a view on the possible quantum of Telstra's direct costs of providing access to the ULLS. The ACCC has found that the \$30 charge will allow Telstra to more than recover the direct costs of providing the ULLS.

Despite the ACCC noting in its Draft Decision that Telstra did not supply direct cost information; in response to the Draft Decision Telstra did not provide an alternative method or its own estimation of the direct cost of providing the ULLS, submitting only the TEA model as supporting evidence. The ACCC notes however that TEA model is intended to estimate the cost of the hypothetical operator when providing the ULLS, as claimed by Telstra. It would, therefore, not be appropriate to use the TEA model to estimate the direct cost of providing the ULLS.

## **Concluding Comments**

As a result of the detailed analysis undertaken by the ACCC, it is not satisfied that Telstra's 2008 Undertaking is reasonable.

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<sup>8</sup> Estimated using v.1.2 of the Analysys cost model, plus a ULLS specific charge of \$2.45. Note that the inclusion of \$2.45 does not indicate that the ACCC accepts \$2.45 as a reasonable price for the ULLS specific charge. Its inclusion here is for illustrative purposes only.

<sup>9</sup> ACCC, *Analysys Cost Model Discussion Paper*, December 2008, p. 8.

## **E2 A note on the practice of late submissions**

The ACCC notes with concern that Telstra and access seekers continued to provide submissions to the ACCC beyond the due dates. Submissions to the Draft Decision were due 12 December 2008, which was extended to 23 December 2008. The ACCC notes that 132 documents were lodged by Telstra in the 10 days to 22 April 2009.

Late provision of documents necessarily delays the ACCC's decision and provides a reduced opportunity for all interested parties to assess and respond to the submissions of others within a reasonable timeframe. None of this can be in the public interest.

When parties provide submissions to the ACCC, it expects parties to provide relevant comments and analysis. In this way, the ACCC and parties are clear as to the arguments that the submitter considers relevant to the current process. While providing documents without indicating their relevance to this process may save time for the submitting party, it makes the job of the ACCC and other parties more difficult and reduces the effectiveness of the original submission.

In this undertaking process, the ACCC notes that on a number of occasions, parties submitted documents without any supporting analysis, and without indicating their relevance to the assessment process. For instance, Optus submitted an Ofcom Paper<sup>10</sup> on 14 April 2009 without providing any supporting submission indicating its relevance.

Notwithstanding, the ACCC has had regard to all submitted material. Where material is of questionable relevance and/or has not been the subject of full consultation, the weight given to that evidence has been affected. This is the risk that is taken by any party who delays their submissions or fails to take appropriate time and care to specify the particular passages on which they rely.

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<sup>10</sup> Ofcom, *Review of BT network charge controls - consultation on proposed charge controls in wholesale narrowband market*, 19 March 2009.

# 1 Introduction

This document sets out the ACCC's final decision on Telstra's ULLS 2008 Undertaking.

On 3 March 2008, Telstra lodged an access undertaking with the ACCC. The 2008 Undertaking specifies certain terms and conditions under which Telstra undertakes to meet its SAOs in respect of the ULLS. The 2008 Undertaking supersedes a previous ULLS undertaking that had been lodged by Telstra on 21 December 2007, which Telstra withdrew at the same time the 2008 Undertaking was lodged. The 2008 Undertaking does not include monthly charges for the ULLS in areas other than Band 2 ESAs and contains limited non-price terms and conditions.

In support of its 2008 Undertaking, Telstra submitted the TEA Model. Telstra has since submitted revised versions of the TEA model. Telstra's Proposed Monthly Charge of \$30 is below version 1.3 of the TEA Model's estimate of \$46.54 in Band 2 ESAs. Telstra submits that the Proposed Monthly Charge of \$30 is limited to the term of the 2008 Undertaking, which if accepted by the ACCC would extend until 31 December 2010. After the term of the undertaking, Telstra submits that ULLS prices can be increased to TSLRIC+ (estimated as \$46.54 by the TEA Model (version 1.3) either through commercial negotiation, arbitration or Telstra lodging another undertaking.<sup>11</sup>

Telstra has submitted three revised versions of the TEA model and accompanying documentation in support of its 2008 Undertaking:

- On 6 August 2008, Telstra submitted version 1.1 of the TEA model;
- On 10 September 2008, Telstra submitted version 1.2 of the TEA model; and
- On 22 January 2009, Telstra submitted version 1.3 of the TEA model.

On 13 November 2008 the ACCC released its Draft Decision (2008 Draft Decision) and preliminary reasons for rejecting the 2008 Undertaking. In response to the ACCC's 2008 Draft Decision,<sup>12</sup> the ACCC received submissions from:

- Telstra;
- the CCC;
- Optus;
- Adam Internet et al; and
- Unwired Australia Pty Ltd (Unwired).

On 4 June 2008 the ACCC released a discussion paper on Telstra's 2008 Undertaking (the 2008 Discussion Paper). In response to the Discussion Paper, submissions were received from:

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<sup>11</sup> Telstra Corporation Limited, *Telstra's ULLS Undertaking is Reasonable*, 4 April 2008, p. 4.

<sup>12</sup> ACCC, *2008 ACCC draft decision*, November 2008.

- Telstra;
- Competitive Carriers Coalition (CCC);
- SingTel Optus Pty Limited (Optus); and
- Adam Internet Pty Ltd, iiNet Limited/Chime Communications Pty Ltd and Agile Pty Ltd/Internode Pty Ltd (Adam Internet et al).

The ACCC commissioned Ovum to review and report on version 1.0 of the TEA model. Ovum was also engaged by the ACCC to respond to submissions made to its reports and reviewed versions 1.2 and 1.3 of the TEA model, to the extent that this was required. It was also engaged to undertake an international benchmarking analysis on unbundled local loop prices.

Public versions of submissions and Ovum's reports on its review of the TEA models and its international benchmarking analysis are available on the ACCC's website.

## 2 Background

### 2.1 Declaration and the regulatory framework

The ULLS was first declared in August 1999 under Part XIC of the TPA and was subsequently re-declared by the ACCC in July 2006 for a further three years.<sup>13</sup> Once a service is declared, carriers and CSPs supplying the declared service to themselves or others are subject to the SAOs. These obligations constrain the manner in which carriers and CSPs can conduct themselves in supplying the declared service.

Section 152AR of the TPA sets out the SAOs applying to carriers and CSPs when supplying the declared service to themselves or others. The terms and conditions upon which a carrier or CSP meets these obligations are as agreed between the parties. In the event that they cannot agree, one of them can notify the ACCC of an access dispute under section 152CM of the TPA. Once notified, the ACCC can arbitrate and make a determination which resolves the dispute. However, the ACCC's determination need not be limited to the matters specified in the dispute notification. The ACCC can deal with any matter relating to access by the service provider to the declared service.<sup>14</sup>

The TPA also enables a carrier or CSP to resolve potentially contentious issues with the ACCC outside the arbitral process. A carrier or CSP can do this by giving the ACCC an access undertaking under section 152BS of the TPA, setting out the terms and conditions on which the carrier or CSP proposes to comply with particular SAOs. If accepted by the ACCC, the terms and conditions of the undertaking become binding. If a carrier or CSP breaches the undertaking, the Federal Court can make an order requiring compliance with the undertaking, the payment of compensation, or any other order that it thinks appropriate (section 152CD). Once an undertaking is in operation, the ACCC must not make an arbitral determination that is inconsistent with the terms and conditions of the accepted undertaking.<sup>15</sup>

### 2.2 The declared service

#### 2.2.1 Unconditioned Local Loop Service

The current ULLS declaration describes generally the provision of this service as involving the use of unconditioned cable, primarily copper pairs, between a customer's premises and a point located at or associated with a CAM.

As shown in **Figure 2.2.1**, ULLS interconnection is typically on the customer side of the IDF in a Telstra local exchange. In other words, access seekers generally install

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<sup>13</sup> ACCC, *Declaration inquiry for the ULLS, PSTN OTA, CLLS*, Final Determination, July 2006.

<sup>14</sup> *Trade Practices Act 1974* (Cth), subsection 152CP(2).

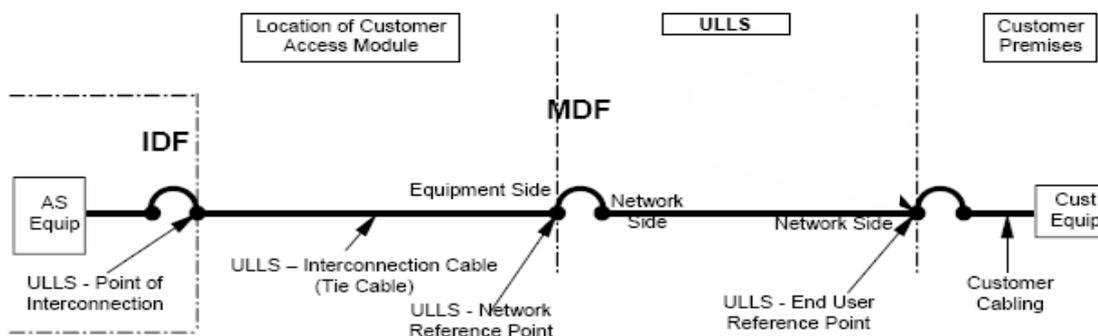
<sup>15</sup> *Trade Practices Act 1974* (Cth), subsection 152CQ(5).

their own interconnection equipment—typically a DSLAM—in an exchange which is ‘associated with’ a Telstra CAM.<sup>16</sup>

Importantly, the right of access under the existing ULLS declaration is not limited to the exchange. The current ULLS declaration also applies to remote access units, such as street cabinets, where a CAM has been deployed.

Access seekers that take up the ULLS can provide higher quality and a more diverse range of broadband services compared to those access seekers that resell Telstra’s ADSL service. The ULLS can also be used by access seekers to supply voice calls.

**Figure 2.2.1 Schematic diagram of the ULLS network architecture**



The MDF is within the exchange building. The section labelled ‘ULLS’ is the cable between the exchange building and the customer’s premises.

Source: modified diagram from Communications Alliance (C559:2005) Part 1, p. 16.

Telstra, as the predominant supplier of this service, has ownership of most of the copper CAN located throughout Australia.

The declared ULLS is used by access seekers to connect their own networks to existing infrastructure and deliver new and innovative high-speed and data-based services to end-users more efficiently. It can also potentially be used to provide voice services using VoIP and DSL technologies. Possible services include high speed Internet access, ‘tele-working’, distance learning, video-on-demand, remote LAN access and other multimedia and data applications, as well as traditional local, STD and IDD call services in competition with Telstra.

## 2.3 Background to regulation of the ULLS

The 2008 Undertaking lodged by Telstra follows a series of decisions made by the ACCC since 2003 on ULLS monthly charges. On 9 January 2003, Telstra lodged an undertaking with the ACCC relating to the supply of the ULLS (2003 Undertaking).

<sup>16</sup> The ACCC considers that an access seeker’s DSLAM is ‘associated with’ a CAM in Telstra’s exchanges. While both in the exchange, the link between an access seeker’s DSLAM and a Telstra CAM is indirect as it is routed through Telstra’s MDF.

In October 2003, the ACCC published model price and non-price terms and conditions for core services, which included the ACCC's views on appropriate pricing of the ULLS. Subsequently, Telstra withdrew its 2003 Undertaking by way of submitting the 2003 Replacement Undertaking on 14 November 2003. Following the issue of a draft decision to reject the 2003 Replacement Undertaking by the ACCC, Telstra withdrew the 2003 Replacement Undertaking and submitted a revised ULLS monthly charge undertaking – the 2004 Undertaking – on 13 December 2004. The 2004 Undertaking contained geographically de-averaged prices according to geographical areas (Bands 1–4).

On 21 December 2005, the ACCC issued a final decision to reject the 2004 Undertaking. In rejecting the 2004 Undertaking, the ACCC formed the view that the monthly access charges proposed by Telstra were higher than what was required for it to recover the costs of provision of the ULLS in full.

Telstra lodged the 2005 Undertaking, which proposed a single (average) ULLS monthly price of \$30 per month, on 23 December 2005. In August 2006, the ACCC rejected the 2005 Undertaking.<sup>17</sup> The ACCC's decision was affirmed by the Australian Competition Tribunal which was not satisfied that the ULLS charge of \$30 per service per month was reasonable.<sup>18</sup>

In December 2007, March 2008 and April 2008, the ACCC made final determinations in the arbitration of eight disputes between Telstra and access seekers regarding the supply of the ULLS. These final determinations specified the monthly charges for which Telstra supplied the ULLS to access seekers and expired on 30 June 2008. The ACCC is currently arbitrating a number of ULLS access disputes, all of which involve ULLS monthly charges.

In June 2008, the ACCC made the 2008 ULLS Pricing Principles and Indicative Prices Determination.<sup>19</sup> This determination includes indicative prices for ULLS monthly charges until July 2009.

In October 2008, the non-price model terms and conditions determination for the ULLS and core services made in 2003 expired. In November 2008, the ACCC made a new determination for non-price model terms and conditions that applies to the ULLS and other core services (2008 Model Terms Determination).<sup>20</sup>

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<sup>17</sup> ACCC, *2006 ACCC final decision*, August 2006.

<sup>18</sup> *Telstra Corporation Limited (No 3)* [2007] ACompT 3 (17 May 2007).

<sup>19</sup> ACCC, *Pricing Principles for Unconditioned Local Loop Service Amendment Determination 2008 (No.1)*.

<sup>20</sup> ACCC, *Model Non-Price Terms & Conditions Determination 2008*.

### 3 Summary of the Telstra ULLS Undertaking

This section summarises the price and non-price terms and conditions in the 2008 Undertaking.

#### 3.1 Terms and conditions of the Undertaking: Proposed ULLS monthly charge

Telstra submits that the ULLS charges payable by the access seeker to Telstra should comprise:

- a once only charge payable at connection ('connection charge');
- a monthly charge; and
- charges for other aspects of the service, including operational aspects such as service qualification inquiries and order withdrawals.<sup>21</sup>

In the ACCC's 2008 Draft Decision, the ACCC noted the 2008 Undertaking appears only to specify the monthly charge for Band 2 ESAs, which Telstra proposes to set at \$30.

In response, Telstra submitted that:<sup>22</sup>

Telstra's Undertaking encompasses all elements of the ULLS monthly charge. The costs associated with the monthly charge in Telstra's Undertaking are ULLS network costs and ULLS specific costs. Most attention to Telstra's Undertaking has been given to Telstra's estimate of ULLS network costs, since this, on its own, supports a \$30 ULLS price. Given this, and for the purpose of limiting the scope of debate around Telstra's Undertaking, Telstra is willing to accept the ACCC's \$2.45 cost estimate for ULLS specific costs set out in its 2008 ULLS pricing principles.

The ACCC notes Telstra's submission that the Proposed Monthly Charge includes ULLS specific costs of \$2.45. However, the 2008 Undertaking which sets out the terms and conditions for access to the ULLS does not state that the ULLS specific cost is included.

The ACCC also notes that the 2008 Undertaking does not explicitly include charges for the ULLS in areas other than Band 2 ESAs, ULLS connection charges and charges for operational aspects of the service.

The term 'Band' has been developed by Telstra to differentiate geographic areas within Australia. Telstra states that a Band 2 area has more than 108.4 SIOs per square kilometre, which is not considered a Band 1 area.<sup>23</sup> The ACCC notes that this generally equates to metropolitan areas outside of the central business districts of NSW, Victoria,

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<sup>21</sup> Telstra, *3 March 2008 Ordinary Access Undertaking for the Telstra Unconditioned Local Loop Service, Attachment Part B – Service Description*, p. 13.

<sup>22</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p 33.

<sup>23</sup> Telstra, *Service Quality Strategy*, 23 June 2006, p. 3.

South Australia Queensland and Western Australia, and covers 67 per cent of all SIOs (approximately 6.9 million lines from a total of 10.2 million lines), 70 per cent of the population, but only 0.2 per cent of the land mass.<sup>24</sup>

The Proposed Monthly Charge of \$30 is below the TEA model's (Version 1.3) estimate of \$46.54 in Band 2 ESAs.

### **3.2 Basis for proposed charges: the Telstra Efficient Access model**

The TEA model estimates the ULLS network costs for all 583 Band 2 ESAs. In summary, Telstra submits that the model:

- uses actual data including customer locations, pillars, exchange locations and cable routes;
- does not include any cable duplication;<sup>25</sup>
- allows variability in the price inputs for equipment, materials, supplies and contract labour required to construct the CAN;
- uses application ratios designed to account for variations in terrain in which the plant will be placed (i.e. rocky or normal terrain, turf or under roads, footpaths and driveways);
- models every exchange;
- limits equipment choices to those that satisfy the ULLS product definition (i.e. an all copper unconditioned loop), even though Telstra currently deploys only fibre main cable in new construction;
- does not include distribution areas of the existing Telstra network that are fed by fibre because ULLS is not available in those areas;
- includes sharing of trenching and conduit between fibre main cable and copper main cable;
- can be run using a tapered or non-tapered distribution cable design; and
- uses two databases: the Cable Plant Records database which records Telstra's records of physical cables and the Network Plant Assignment and Management System which stores information about customer services and network plant interconnectivity.<sup>26</sup>

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<sup>24</sup> Based on analysis of ESA boundary information conducted by ACCC. The boundary information was purchased from MapInfo in the package, *ExchangeInfo*.

<sup>25</sup> Legacy effects, such as duplicative cable runs are inherent in Telstra's current network as a result of the construction and reinforcement of the network over the course of a number of years.

<sup>26</sup> Telstra, *TEA model overview*, 21 December 2007, p. 2.

### 3.3 Non-price terms and conditions

The 2008 Undertaking prescribes a limited number of non-price terms and conditions. These set out:

- the description of the ULLS that Telstra undertakes to supply access seekers;
- that the service may vary depending on the geographic and technical capability of the Telstra network when a request for the ULLS is made or the ULLS is delivered;
- in accordance with the *ULLS Ordering and Provisioning Code* (ACIF C569:2005), Telstra will provide the access seeker with information in Telstra's records about the cable plant used to provide the ULLS. Telstra makes no representation as to the accuracy of that information;
- that the access seeker complies with applicable industry safety standards, including the *Network Deployment Rules* (ACIF C559:2005) for voltages and currents on the ULLS. The access seeker must install all necessary surge protection to safeguard against personal injury and damage to equipment;
- that the access seeker must comply with the *ULL Fault Management Guideline*, the *Network Deployment Rules* (ACIF G572:2001) and the *ULLS Ordering and Provisioning Code* (ACIF C569:2005);
- that the access seeker enter into, with Telstra, facilities access arrangements necessary for it to connect its network to Telstra's ULLS at the ULL POI. Telstra notes that the 2008 Undertaking does not deal with facilities access; and
- that the access seeker is responsible for billing the end user for the telecommunications service provided by the access seeker to the end user.

## 4 Legislative Framework

### 4.1 Form and content of an ordinary access undertaking

Section 152BS of the TPA provides that an ordinary access undertaking submitted by a carrier or CSP to the ACCC is a written document which indicates how the carrier or CSP undertakes to comply with the terms and conditions specified in the undertaking in relation to the applicable SAOs. Section 152BS sets out that an ordinary access undertaking may be one of the following types:

- an undertaking containing terms and conditions that are specified in the undertaking; or
- an undertaking where the terms and conditions are specified by adopting a set of model terms and conditions set out in the telecommunications access code, as in force from time to time.<sup>27</sup>

The 2008 Undertaking falls into the first category where the terms and conditions are specified in the undertaking.

### 4.2 Criteria for acceptance of an undertaking – model terms and conditions in access code not adopted

Section 152BV of the TPA sets out the matters in respect of which the ACCC must be satisfied before it can accept an ordinary access undertaking. It applies where an ordinary access undertaking is given to the ACCC by a carrier or CSP and the undertaking does not adopt a set of model terms and conditions set out in the telecommunications access code.

Section 152BV of the TPA provides:

- (1) *This section applies if:*
  - (a) *an ordinary access undertaking is given to the Commission by a carrier or a carriage service provider; and*
  - (b) *the undertaking does not adopt a set of model terms and conditions set out in the telecommunications access code.*
- (2) *The Commission must not accept the undertaking unless:*
  - (a) *the Commission has:*
    - (i) *published the undertaking and invited people to make submissions to the Commission on the undertaking; and*
    - (ii) *considered any submissions that were received within the time limit specified by the Commission when it published the undertaking; and*

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<sup>27</sup> *Trade Practices Act 1974* (Cth), subsections 152BS(3) and (4).

- (b) *the Commission is satisfied that the undertaking is consistent with the standard access obligations that are applicable to the carrier or provider; and*
- (c) *if the undertaking deals with price or a method of ascertaining price-the Commission is satisfied that the undertaking is consistent with any Ministerial pricing determination; and*
- (d) *the Commission is satisfied that the terms and conditions specified in the undertaking are reasonable; and*
- (e) *the expiry time of the undertaking occurs within 3 years after the date on which the undertaking comes into operation.*

Note: Section 152AH contains a list of matters to be taken into account in determining whether terms and conditions are reasonable.

Each of the matters set out in subsection 152BV(2) is explained below.

#### **4.2.1 Public process: paragraph 152BV(2)(a)**

Paragraph 152BV(2)(a) of the TPA provides that the ACCC must not accept an undertaking unless the ACCC:

- has published the undertaking and invited people to make submissions on the undertaking; and
- has considered any submissions that were received within the time limit specified by the ACCC when it published the undertaking.

On its website the ACCC has published the 2008 Undertaking, the ACCC's 2008 Discussion Paper and ACCC's 2008 Draft Decision. The ACCC has invited submissions at each stage of the process, set timeframes to make submissions and where appropriate granted extensions.

The ACCC has posted electronic copies of parties' public submissions in response to the ACCC's 2008 Discussion Paper and the ACCC's 2008 Draft Decision on its website. Where parties have provided submissions in confidence or, where parts of submissions have contained confidential information, as claimed by submitters (and accepted by the ACCC), these documents have not been included on the website. Where possible, the ACCC have required parties to supply public versions of confidential documents to be included on the ACCC's website.

#### **4.2.2 Consistency with the standard access obligations: paragraph 152BV(2)(b)**

Paragraph 152BV(2)(b) of the TPA provides that the ACCC must not accept an undertaking unless the ACCC is satisfied that the undertaking is consistent with the SAOs that are applicable to the carrier or CSP. Subject to exemptions made by the ACCC, a carrier or CSP must comply with the SAOs in regard to declared services it supplies either to itself or to other persons. The SAOs are set out in section 152AR of the TPA.

In summary and subject to certain conditions and exceptions set out in section 152AR, if requested by a service provider, an access provider is required to, amongst other things:<sup>28</sup>

- supply the declared service (paragraph 152AR(3)(a));
- take all reasonable steps to ensure that the technical and operational quality of the declared service supplied to the service provider is equivalent to that which the access provider is supplying to itself (paragraph 152AR(3)(b));
- take all reasonable steps to ensure that the fault detection, handling and rectification which the service provider receives in relation to the declared service is of equivalent technical and operational quality and timing to that which the access provider provides to itself (paragraph 152AR(3)(c));
- permit interconnection of its facilities with the facilities of the service provider (paragraph 152AR(5)(c));
- take all reasonable steps to ensure that the technical and operational quality and timing of the interconnection is equivalent to that which the access provider provides to itself (subparagraph 152AR(5)(d)(i));
- if a standard is in force under section 384 of the *Telecommunications Act 1997*, take all reasonable steps to ensure that the interconnection complies with the standard (subparagraph 152AR(5)(d)(ii));
- take all reasonable steps to ensure that the service provider receives interconnection fault detection, handling and rectification of a technical and operational quality and timing that is equivalent to that which the access provider provides to itself (paragraph 152AR(5)(e));
- if requested by the service provider, provide billing information in connection with matters associated with, or incidental to, the supply of the declared service (paragraph 152AR(6)); and
- if a declared service is supplied by means of conditional-access customer equipment, the access provider must, if requested to do so by a service provider supply any service that is necessary to enable the service provider to supply carriage services and/or content services by means of the declared service and using the equipment (paragraph 152AR(8)).

The ACCC's view is now final on whether the 2008 Undertaking is consistent with the applicable SAOs, and is set out in section 5 of these reasons.

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<sup>28</sup> *Trade Practices Act 1974* (Cth), section 152AR.

#### **4.2.3 Consistency with Ministerial pricing determinations: paragraph 152BV(2)(c)**

Section 152CH of the TPA provides that the Minister may make a written determination setting out principles dealing with price-related terms and conditions relating to the SAOs.<sup>29</sup> Subsection 152CI(1) of the TPA provides that if a provision of an access undertaking is inconsistent with any Ministerial pricing determination, the provision will have no effect to the extent of the inconsistency.

Paragraph 152BV(2)(c) provides that the ACCC must not accept an undertaking dealing with price or a method of ascertaining price unless the undertaking is consistent with any Ministerial pricing determination.

To date, a Ministerial pricing determination has not been made. Accordingly, the ACCC is not required to assess the 2008 Undertaking under this criterion until such time that a Ministerial pricing determination is made.

#### **4.2.4 Whether terms and conditions are reasonable: paragraph 152BV(2)(d)**

Paragraph 152BV(2)(d) of the TPA provides that the ACCC must not accept an undertaking unless the ACCC is satisfied that the terms and conditions specified in the undertaking are reasonable.

When assessing the 2008 Undertaking, the ACCC must have regard to both the object and objectives of the Part XIC telecommunications access regime as set out in section 152AB of the TPA and, more specifically, in determining whether the particular terms and conditions of the 2008 Undertaking are reasonable, it must have regard to the range of matters set out in subsection 152AH(1) of the TPA.

Subsection 152AB(1) of the TPA stipulates the object of the Part XIC telecommunications access regime is to promote the LTIE. In determining whether a particular thing promotes the LTIE, the ACCC must have regard to the extent to which it is likely to result in the achievement of the following objectives:

- promoting competition in markets for telecommunications services;
- achieving any-to-any connectivity in relation to carriage services that involve communication between end-users; and
- encouraging the economically efficient use of, and the economically efficient investment in, the infrastructure by which telecommunications services are supplied, or are likely to become, capable of being supplied.<sup>30</sup>

In addition to considering whether the 2008 Undertaking meets the object and objectives of the telecommunications access regime, subsection 152AH(1) of the TPA requires the ACCC to assess whether the particular terms and conditions of the 2008 Undertaking are reasonable having regard to the following criteria:

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<sup>29</sup> In section 152CH of the TPA “price-related terms and conditions” means terms and conditions relating to price or a method of ascertaining price.

<sup>30</sup> *Trade Practices Act 1974* (Cth), subsection 152AB(2).

- whether the terms and conditions promote the LTIE of carriage services or of services supplied by means of carriage services;
- the legitimate business interests of Telstra, and its investment in facilities used to supply the declared service;
- the interests of persons who have rights to use the declared service;
- the direct costs of providing access to the declared service;
- the operational and technical requirements necessary for the safe and reliable operation of a carriage service, a telecommunications network or facility; and
- the economically efficient operation of a carriage service, a telecommunications network or a facility.<sup>31</sup>

In addition, the ACCC may consider any other relevant matter.<sup>32</sup>

The ACCC's view on the reasonableness of the terms and conditions contained in the 2008 Undertaking is set out in section 7 of these reasons.

#### **4.2.5 Expiry date: paragraph 152BV(2)(e)**

Subsection 152BS(7) of the TPA provides that an ordinary access undertaking that specifies terms and conditions must specify the expiry time of the undertaking. Paragraph 152BV(2)(e) provides that the expiry time of the undertaking must be within three years after the date on which the undertaking comes into operation.

The term of the 2008 Undertaking is, if accepted, from the date of the ACCC's acceptance until the earlier of:

- 31 December 2010;
- termination or withdrawal of this Undertaking in accordance with the TPA; or
- the Telstra ULLS ceases to be service of a kind to which a declaration under section 152AL of the TPA applies, and
- the ULLS ceasing to be a service of a kind to which a declaration under section 152AL of the TPA applies.

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<sup>31</sup> *Trade Practices Act 1974* (Cth), subsection 152AH(1).

<sup>32</sup> Section 152AH does not use the expression "any other relevant matter". Rather, subsection 152AH(2) states that the matters listed in subsection 152AH(1) do not limit the matters to which the ACCC may have regard. Thus, the ACCC may consider any other relevant matter.

## 4.3 Procedural matters

### 4.3.1 Confidentiality

In arriving at its final decision, the ACCC has relied on commercial-in-confidence information supplied by Telstra and interested parties. The ACCC has assessed this material in terms of its policy on treatment of information and has determined that, in most instances, it should not reproduce that confidential material in these reasons. The ACCC notes, unless it can corroborate commercial-in-confidence information in some way, it is constrained in the weight that it can give to information that has not been subject to broader industry scrutiny.

Where information that is commercially sensitive has been relied upon in reaching a conclusion in these reasons, it has either been aggregated to a level such that it is no longer commercially sensitive or, where this is not possible, masked with the designation [c-i-c]. Unless otherwise indicated, the information masked with [c-i-c] is information provided by Telstra or an interested party over which they have made a confidentiality claim and the ACCC accepted that claim.

The ACCC recognises that its decision-making processes should be as transparent as practicable. In this regard it notes that interested parties can obtain the commercial-in-confidence information from the provider of that information upon the giving of an appropriate confidentiality undertaking. The ACCC notes that interested parties have been able to negotiate such undertakings with Telstra in respect of some of the confidential information that has been relied upon by the ACCC.

However, the ACCC notes that Telstra's confidentiality arrangements have made it difficult for interested parties to gain reasonable access to the TEA model. The timeliness of the provision of confidential information continues to be an ongoing issue of concern to the ACCC. Given the delays experienced by interested parties throughout this process, the ACCC expressed its concern to Telstra on several occasions that interested parties have been significantly limited in their ability to properly assess the TEA model and confidential material in support of the 2008 Undertaking.<sup>33</sup> The ACCC's concerns in relation to proper external review of the 2008 Undertaking and supporting materials are discussed further in Appendix B.1.

The ACCC also notes that Optus has adopted a similar confidentiality undertaking arrangement as Telstra with regard to its confidential material. The ACCC reiterates that it would be concerned if such processes affected interested parties' ability to properly assess relevant material.

## 4.4 Information requests and further submissions from Telstra

Pursuant to subsection 152BT(2), the ACCC has the power to request that Telstra give the ACCC further information about the 2008 Undertaking in order to facilitate the ACCC's consideration of the 2008 Undertaking.

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<sup>33</sup> ACCC letter to Telstra, *Telstra's 2008 ULLS Undertaking – Confidentiality arrangements*, 14 May 2008.; ACCC, *2008 ACCC Discussion Paper*, June 2008, pp. 9-10.

The ACCC made three formal requests to Telstra for further information under subsection 152BT(2). Prior to the release of the 2008 Draft Decision, on 28 March 2008<sup>34</sup> the ACCC made an initial request<sup>35</sup> with Telstra providing responses on 4 April<sup>36</sup> and 7 April 2008.<sup>37</sup> Subsequent to the release of the ACCC's Draft Decision, the ACCC made two more formal requests for further information on 16 December 2008<sup>38</sup> and the 23 January 2009.<sup>39</sup> Telstra responded to these requests on 13 March 2009.<sup>40</sup>

These formal requests for information and public versions of Telstra's responses are published on the ACCC website.

## 4.5 Information relied upon

In assessing the 2008 Undertaking, the ACCC has primarily relied upon Telstra's submissions in support of the 2008 Undertaking, as well as the submissions of Telstra and interested parties made in response to the ACCC's 2008 Discussion Paper and the ACCC's 2008 Draft Decision. The ACCC has relied upon relevant information from sources other than submissions where it considers that the information facilitates its analysis. This relevant information includes previous ACCC reports; information the ACCC has obtained in the course of related regulatory processes; advice from consultants engaged by the ACCC; and other materials, such as academic writings and journal articles. All information the ACCC has had regard to in making this decision is specified in Appendix C.

## 4.6 Decision-making period

The ACCC has a six month statutory timeframe in which it must make a decision to accept or reject the 2008 Undertaking.<sup>41</sup> The six month timeframe does not include:

- the period of time from the date the ACCC published the 2008 Undertaking and invited submissions to the due date for receipt of those submissions (the 'Consultation Period');<sup>42</sup> or

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<sup>34</sup> ACCC, *Letter re: Telstra's March 2008 Undertaking for Band 2: Request for further information*, 28 March 2008.

<sup>35</sup> ACCC, *Letter re: Telstra's March 2008 Undertaking for Band 2: Request for further information*, 28 March 2008.

<sup>36</sup> Telstra, *Letter re: Telstra's March 2008 Undertaking for Band 2: Request for further information*, 4 April 2008.

<sup>37</sup> Telstra, *Letter re: Telstra's March 2008 Undertaking for Band 2: Request for further information*, 7 April 2008.

<sup>38</sup> ACCC, *Letter re: Request for further information: Telstra's Band 2 ULLS undertaking*, 16 December 2008.

<sup>39</sup> ACCC, *Letter re: Request for further information: Telstra's Band 2 ULLS undertaking*, 23 January 2009.

<sup>40</sup> Telstra, *Letter re: Telstra's Band 2 ULLS Undertaking - Response to s.152BT requests and further submissions*, 13 March 2009.

<sup>41</sup> *Trade Practices Act 1974* (Cth), subsection 152BU(5).

- the period of time from the date the ACCC makes a formal request for further information to the date that Telstra fulfills the request.<sup>43</sup> As noted (in section 4.4), the ACCC has requested further information from Telstra on three occasions pursuant to section 152BT of the TPA.

Moreover, in certain circumstances, the ACCC may extend or further extend the six month timeframe by a period of not more than three months.<sup>44</sup> The ACCC extended the six month statutory timeframe by three months in November 2008. Based on this extension and the requests for further information pursuant to section 152BT of TPA discussed above, the statutory timeframe has been extended until 16 May 2009.

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<sup>42</sup> See paragraph 152BV(2)(a) of the TPA.

<sup>43</sup> *Trade Practices Act 1974* (Cth), subsection 152BU(6). The ACCC can request further information pursuant to section 152BT of the TPA.

<sup>44</sup> *Trade Practices Act 1974* (Cth), subsection 152BU(7).

## **5 The standard access obligations**

Under paragraph 152BV(2)(b), the ACCC must not accept an undertaking unless it is satisfied that the Undertaking is consistent with the SAOs that are applicable to the carrier or CSP – in this case, Telstra. The SAOs are set out in section 152AR of the TPA. An access provider that supplies a declared service to itself or other persons must comply with any applicable SAOs. Paragraph 152BV(2)(b) ensures that the carrier or CSP is not subject to inconsistent obligations if the undertaking is accepted.

### **5.1 Approach to assessing consistency with the standard access obligations**

The TPA does not detail a specific approach for assessing whether the terms and conditions in an undertaking are consistent with the access provider's SAOs. The approach used by the ACCC is to consider whether the terms and conditions in an undertaking are inconsistent with the SAOs. If the terms and conditions are not inconsistent with the SAOs, the ACCC is likely to regard them as consistent.

The ACCC considers that terms and conditions specified in an undertaking would be inconsistent with the SAOs if an access provider, in giving effect to those terms and conditions, would not satisfy each of the applicable SAOs. Such inconsistency may arise expressly or by implication from the circumstances in which the terms and conditions in the undertaking could be satisfied.

The purpose of this assessment is to ensure that an access provider would comply with the SAOs should the 2008 Undertaking be accepted. This process is not concerned with the reasonableness of the terms and conditions of the 2008 Undertaking. Reasonableness is assessed separately in section 8 of this final decision.

The ACCC has only considered whether any of the specified non-price terms in the 2008 Undertaking are inconsistent with the applicable SAOs. The specified price terms and conditions of the 2008 Undertaking are more relevant to the assessment of reasonableness and to the matters to which regard must be had under section 152AH.

### **5.2 Assessment**

Clause 3.1 of the 2008 Undertaking provides that Telstra will comply with the terms and conditions specified in the Attachment to the 2008 Undertaking to satisfy the relevant SAOs.

The terms and conditions principally relate to pricing, although the Attachment also contains clauses that may be classified as non-price terms and conditions.

The Attachment to the 2008 Undertaking specifies a Telstra service description and proposed non-price terms for the Telstra service. The service description encompasses availability, cable plant information and applicable industry standards. The Telstra service description is outlined below:

- (a) The Telstra service description

Telstra describes its Unconditioned Local Loop Service to be a service for the use of a unconditioned Communications Wire between the Network Boundary at the End Users Premises and a ULL POI associated with the TCAM service that End User.

The Telstra Unconditioned Local Loop Service will support a connection with DC continuity.

(b) Availability

The availability of the Telstra Unconditioned Local Loop Service may vary depending on the geographic and technical capability of the Telstra Network at the time at which a request for the Telstra Unconditioned Local Loop service is made or the Telstra Unconditioned Local Loop Service is delivered.

(c) Cable Plant Information

Telstra will, in accordance with the ULL Ordering and Provisioning Code, provide the Access Seeker with information in Telstra's records about the cable plant used to provide the Telstra Unconditioned Local Loop Service.

The access seeker acknowledges that the information provided to it by Telstra will be derived from Telstra's records and that Telstra makes no representation as to the accuracy of that information.

(d) Industry Standards

The Access Seeker must comply with the applicable industry safety standards, including the specifications set out in the Network Deployment Rules for voltages and currents on the Telstra Unconditioned Local Loop Service.

The Access Seeker must install all necessary surge protection to safeguard against personal injury and damage to equipment.

The non-price terms pertain to access seeker obligations, facilities access and customer billing. The non-price terms specified in Part B of the Attachment to the 2008 Undertaking are outlined below:

1. Access Seeker Obligations

The Access Seeker must comply with the ULL Fault Management Guideline, the Network Deployment Rules and the ULL Ordering and Provisioning Code.

2. Facilities Access

The Access Seeker will need to enter into with Telstra such facilities access arrangements as necessary in order for it to connect its network to a Telstra Unconditioned Local Loop Service at the ULL POI.

3. End Customer Billing

The Access Seeker is responsible for billing the End User for the telecommunications service provided by the Access Seeker to the End User.

### **5.2.1 Non-exhaustive scope of the 2008 Undertaking**

Telstra notes in its 2008 Undertaking application that the terms and conditions specified principally relate to matters of pricing.

While the price and non-price terms and conditions that are contained in the 2008 Undertaking do not cover all of the matters relating to the supply of the service, it is not necessary for an undertaking to exhaustively address all matters that could relate to the applicable SAOs. The terms and conditions of the 2008 Undertaking – once accepted – relate to the supply of the service as specified in the 2008 Undertaking. Any relevant matters that are not addressed in the 2008 Undertaking can be settled by

commercial negotiation. However, in the event that parties to a commercial negotiation are unable to reach an agreement, such matters could be settled via an ACCC arbitration of the dispute.

The ACCC considers the absence of terms and conditions about certain matters does not, by itself, make an undertaking inconsistent with the SAOs. The ACCC notes that the TPA does not contemplate that an undertaking must include all the possible terms and conditions of access. However, the ACCC also recognises that the absence of terms and conditions in an undertaking may only provide a limited degree of certainty to all market participants.

In the Draft Decision, the ACCC noted that because the 2008 Undertaking is focused solely on the monthly access charge, there may still be scope for Telstra to restrict access to the declared service, as access seekers may need to negotiate on reasonable terms and conditions on other cost items included in the monthly charge, which have not been detailed in this undertaking. In relation to whether the Proposed Monthly Charge includes a specific charge component, Telstra, in its Response to the Draft Decision noted that the Proposed Monthly Charge includes a specific charge of \$2.45. However, the ACCC considers that as this clarification was provided in a submission and not in the terms and conditions in the Undertaking, this issue still creates uncertainty in negotiations between parties as to whether the specific charge is included.

### **5.2.2 Submissions**

#### **Whether the 2008 Undertaking specifies terms and conditions for services other than the Telstra Service**

Telstra notes that the ULLS service description in the 2008 Undertaking (the 'Telstra Service') is consistent with the service description contained in the ULLS Declaration.<sup>45</sup> In particular, Telstra considers that there are some aspects of the Telstra Service covered by the 2008 Undertaking which are more limited than the ULLS Declaration description. For example, the 2008 Undertaking only specifies charges for a ULLS connected to an exchange building in a Band 2 exchange. However, these matters do not create any inconsistencies with the SAOs.<sup>46</sup>

Optus notes that while the ULLS Declaration description in the 2005 Undertaking and 2008 Undertaking are not exactly the same, the wording is very similar.<sup>47</sup> Accordingly, Optus considers that some of the ACCC's comments in assessing Telstra's 2005 Undertaking would be applicable to the assessment of the Telstra Service submitted as part of Telstra's current ULLS 2008 Undertaking. Optus notes that the ACCC in its August 2006 *Final Decision of the Assessment of Telstra's ULLS*

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<sup>45</sup> Telstra, *Response to the ACCC's discussion paper*, 12 August 2008, p. 2.

<sup>46</sup> Telstra, *Response to the ACCC's discussion paper*, 12 August 2008, p. 2.

<sup>47</sup> Optus, *Response to the ACCC's discussion paper*, August 2008, p. 11.

*Monthly Charge Undertaking*<sup>48</sup> concluded that the Telstra service description appeared to be more limited than the ULLS Declaration.<sup>49</sup>

Adam Internet et al submit that the main difference between the service description in the ULLS Declaration and the 2008 Undertaking is that in the latter, Telstra does not state that the POI must be located on the end-user side of the CAM. Adam Internet et al therefore suggest that the service description in the 2008 Undertaking is potentially broader than the ULLS Declaration.<sup>50</sup>

In reply to Optus' submission, Telstra states that Optus makes an incorrect assumption in describing the 2008 Undertaking service description as being potentially more limited than the ULLS Declaration. Telstra also submits that Adam Internet et al are incorrect in stating that the service description in the 2008 Undertaking is broader than the ULLS Declaration.

Telstra submits that the service description in the 2005 Undertaking was described in similar terms as the 2008 Undertaking and that this was held to be consistent with the ULLS declaration by the ACCC and the Australian Competition Tribunal. Telstra states that a more limited service description does not affect the ability of Telstra to meet its SAOs as an access seeker could ask the ACCC to arbitrate a dispute for the provision of a form of the declared service that was not described in the service description but was contemplated by the ULLS declaration.<sup>51</sup>

### **Supply, quality and fault handling in relation to the declared service**

The 2008 Undertaking specifies certain technical requirements, applicable codes and industry standards relating to supply of the Telstra Service.

Telstra notes the absence of terms and conditions specifying how it will fulfil its obligations in respect of equivalent supply, quality and fault handling of the ULLS, should have no bearing on the ACCC's assessment of the reasonableness of the 2008 Undertaking as:

- the 2008 Undertaking is not required to be exhaustive;
- any relevant matters not addressed in the 2008 Undertaking could be settled by commercial negotiation or, failing that, in appropriate circumstances, by the ACCC in arbitration; and
- paragraph 152BV(2)(d) provides that the ACCC must be satisfied that the terms and conditions specified in the 2008 Undertaking are reasonable. None of the terms and conditions specified in the 2008 Undertaking can be said to be unreasonable due to the absence of terms and conditions regarding obligations concerning equivalence.<sup>52</sup>

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<sup>48</sup> ACCC, *2006 ACCC Final Decision*, August 2006.

<sup>49</sup> Optus, *Response to the ACCC's discussion paper*, August 2008, p. 12.

<sup>50</sup> Adam Internet et al., *Response to the ACCC's discussion paper*, December 2008, p. 2.

<sup>51</sup> Telstra, *Response to access seeker submissions*, 18 November 2008, p 17.

<sup>52</sup> Telstra, *Response to the ACCC's discussion paper*, 12 August 2008, p. 3.

Optus suggests that Telstra does not provide access seekers with a level of service equivalent to that which it provides itself. Optus notes that this difference is particularly evident with timeframes for supply of new customers; capacity thresholds on daily ULLS cutovers (for supply of new customers); copper quality and fault handling. Optus submits that the absence of certain terms and conditions in the 2008 Undertaking mean that the 2008 Undertaking is not consistent with the SAOs.<sup>53</sup>

In response to Optus, Telstra submits that, as contemplated by Part XIC, the terms of the 2008 Undertaking need not be exhaustive and that actual compliance with SAOs in practice are irrelevant to an assessment of whether the terms and conditions of the 2008 Undertaking are consistent with the applicable SAOs.<sup>54</sup>

### **Interconnection of facilities**

The 2008 Undertaking does not contain provisions relating to the technical and operational quality and timing of interconnection, or provisions in relation to interconnection, fault detection, handling and rectification. Part A of the Attachment to the 2008 Undertaking defines the POI between Telstra's network and a service provider's network. Part A of the Attachment to the 2008 Undertaking states that:

ULL POI means, in relation to a line, a point that is an agreed point of interconnection located at or associated with a TCAM and located on the End User side of the TCAM.

Telstra submits that it has not included specific terms relating to availability, cable plant information, industry standards, access seeker obligations, facilities access and end user billing in the 2008 Undertaking.<sup>55</sup> These issues have been excluded from previous Undertakings and the ACCC accepted that those Undertakings were not inconsistent with the billing information SAOs. The ACCC notes that Telstra is incorrect when it states that the 2008 Undertaking does not include specific terms relating to access seeker obligations, as these are clearly set out in the 2008 Undertaking. For instance, Part B (1) of the Attachment to the 2008 Undertaking sets out 'Access Seeker Obligations' which states that 'The Access Seeker must comply with the ULLS Fault Management Guidelines'.

Optus submits that the CAM is in fact owned by access seekers, and therefore it would be incorrect to say the CAM is owned by Telstra.<sup>56</sup> Optus observes that Telstra has changed the definition of POI slightly from the ACCC service description. Optus suggests that Telstra's use of the description 'agreed POI' is more narrowly defined than the ACCC's description of a 'potential POI'.<sup>57</sup> Optus suggests that a potential POI provides multiple possible points of interconnection, but an agreed point of interconnection is limited to those locations to which Telstra is willing to supply; it

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<sup>53</sup> Optus, *Response to the ACCC's discussion paper*, August 2008, p. 13.

<sup>54</sup> Telstra, *Response to access seeker submissions*, 18 November 2008, p 22

<sup>55</sup> Whilst the ACCC's Draft Decision also indicated that the 2008 Undertaking did not include specific terms relating to access seeker obligations, this is not the case.

<sup>56</sup> Optus, *Response to the ACCC's discussion paper*, August 2008 p. 16.

<sup>57</sup> Optus, *Response to the ACCC's discussion paper n*, August 2008, p. 16.

may also be a means by which Telstra can avoid reaching an agreement with an access seeker for supply of the ULLS.<sup>58</sup> Optus suggests that the POI described in the 2008 Undertaking disadvantages access seekers and is not consistent with the SAO to permit interconnection to the service provider's facilities.<sup>59</sup>

Adam Internet et al suggest that a reasonable undertaking by Telstra should include an obligation to enable an access seeker to interconnect with Telstra's facilities.<sup>60</sup>

In response to Adam Internet et al, Telstra notes that facilities access is not a matter dealt with specifically by the 2008 Undertaking. Telstra submits that it is not necessary for the Undertaking to be exhaustive and the absence of particular terms and conditions does not mean that the terms and conditions specified in the 2008 Undertaking are inconsistent with the ULLS Declaration.<sup>61</sup>

### **Provision, timing and content of billing information**

The 2008 Undertaking does not contain terms and conditions on the provision, timing and content of billing information.

Subsection 152AR(7) of the TPA provides that the billing information that must be provided by an access provider to a service provider at such times and in a manner ascertained in accordance with the *Trade Practices Regulations 1974*. Regulation 28S prescribes the manner, form and timing that the billing information must be provided, and that they should be agreed by the access provider and service provider. It also sets out the type of billing information that must be given.

Optus submits that access seekers need to be provided with transactional data in a timelier manner than it and other access seekers are currently experiencing. Optus refers to the particular circumstance of ULLS completion advices that are currently supplied within one clear business day in accordance with *ACIF C569:2005 Unconditioned Local Loop Service - Ordering, Provisioning and Customer Transfer*. Optus notes that this timeline is not acceptable – particularly when the connection is completed on a Friday as this provides a lag between Optus' own billing of an end user and the time within which it has been billed by Telstra for provision of the Telstra Service.<sup>62</sup>

### **5.2.3 Conclusion**

The ACCC notes that there is potential for uncertainty for access seekers about the scope of the 2008 Undertaking as it specifies a service that does not precisely correspond to the terms used to define the declared service. In particular, the ULLS as described in the 2008 Undertaking would appear more limited than the declared service.

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<sup>58</sup> Optus, *Response to the ACCC's discussion paper*, August 2008, p. 17.

<sup>59</sup> Optus, *Response to the ACCC's discussion paper*, August 2008, p. 17.

<sup>60</sup> Adam Internet et al., *Response to the ACCC's discussion paper*, December 2008, p. 5.

<sup>61</sup> Telstra, *Response to access seeker submissions*, 18 November 2008, p. 23.

<sup>62</sup> Optus, *Response to the ACCC's discussion paper*, August 2008.

The ACCC notes the following aspects of the Telstra service description that are not in the ULLS Declaration:

- The Telstra Service will support a connection with DC continuity – there is no requirement for the Telstra Service to support any other service;
- The Telstra Service is limited to a Telstra Service where the End User is connected to an exchange building in a specified Band 2 Exchange Service Area;
- The definition of the POI in the 2008 undertaking refers to an 'agreed POI' while the declaration refers to a 'potential POI';
- The 2008 Undertaking does not contemplate prices for the ULLS in a Band 2 Exchange Service Area for a service connected at:
  - (a) other exchange service areas (not a Band 2 Exchange Service Area); or
  - (b) places other than at an Exchange Building in a Band 2 Exchange Service Area such as when an End User is connected to either a IRIM/RIM/CMUX.

The ACCC is of the view that the price and non-price terms specified in the 2008 Undertaking only apply to the declared service supplied by Telstra. Telstra would not be required to supply, on the terms of the 2008 Undertaking (if accepted), a form of the declared service that was different to or beyond the scope of the Telstra Service.

One interpretation of the 2008 Undertaking is that it specifies terms and conditions for all possible forms of the ULLS. This interpretation has the consequence that Telstra could—refuse to supply any form of the declared service other than the Telstra Service it has specified in the 2008 Undertaking. If such an interpretation was adopted, the ACCC could not be satisfied that the 2008 Undertaking is consistent with the SAOs. However, the ACCC interprets the 2008 Undertaking as specifying terms and conditions only for the supply of the Telstra Service and not for every possible permutation of the ULLS. Accordingly, the ACCC concludes that utilising a service description for the ULLS in the 2008 Undertaking which is different to the description in the ULLS Declaration does not automatically lead to an inconsistency with the SAOs.

The ACCC considers that, the Telstra Service, while different in description to the ULLS Declaration, would not constrain the ability of access seekers to gain access to the ULLS in accordance with Telstra's SAOs. Further the ACCC considers that where an access seeker requires access to a declared service that does not fall within the definition of the Telstra Service in the 2008 Undertaking, then this does not necessarily mean that the undertaking is inconsistent with the SAOs, it just means that the undertaking may not apply to the specific requirements of the access seeker. For instance, access seekers are still able to request access to a 'potential' POI, however, the fact that it is not an 'agreed' POI means that its supply is not subject to the 2008 Undertaking and parties will either have to reach agreement, supply a new undertaking or notify an access dispute in order to meet the SAOs.

Therefore the ACCC considers that any inconsistency between the service descriptions contained in the ULLS Declaration and the 2008 Undertaking does not result in the 2008 Undertaking being inconsistent with the SAOs.

The ACCC notes that the 2008 Undertaking does not contain provisions specifying how Telstra will satisfy its obligations regarding:

- the quality and timing of fault detection, handling or rectification;
- the commencement, refusal, suspension or termination of supply;
- all terms concerning interconnection of facilities; and
- billing terms.

The ACCC considers that the absence of these provisions does not necessarily make the 2008 Undertaking inconsistent with the SAOs. Rather, Telstra has not specified all aspects of how these obligations will be satisfied for the Telstra Service. These will be determined through negotiation.

As discussed above at section 5.2.1, the ACCC considers that should agreement not be reached on these provisions and other non-price matters not dealt with in the 2008 Undertaking, any disagreement could be resolved via the arbitration process under Part XIC of the TPA. For instance, in relation to the issue raised by Optus regarding the provision of equivalent service in relation to the time frames for the supply of new customers, the ACCC considers that if parties are unable to satisfactorily negotiate a resolution, they have recourse to notify the ACCC of a dispute on this issue.

The ACCC's conclusion is that the 2008 Undertaking is not inconsistent with Telstra's SAOs in relation to the ULLS. The ACCC notes that the 2008 Undertaking does not contain an exhaustive terms and conditions or deal with all aspects of the supply of Telstra's ULLS service. However, an undertaking is not required to be exhaustive, and other terms and conditions of supply could be determined by commercial negotiation, or failing agreement, through arbitration by the ACCC.

The ACCC notes that it has recently made the 2008 Model Terms Determination under section 152AQB of the TPA in relation to the core services (PSTN OTA, LCS and ULLS).<sup>63</sup> As the ACCC is required to have regard to the Determination that has been made in arbitrating access disputes concerning core services, such model non-price terms and conditions provide guidance to industry on access terms and may assist in facilitating commercial negotiation and increase certainty.

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<sup>63</sup> ACCC, *Final Determination - Model Non-price terms and conditions*, November 2008.

## **6 Background: the ACCC's approach to pricing the unconditioned local loop service**

### **6.1 Introduction**

This section is intended to provide background to the cost methodology that applies to the ULLS, and the rationale for its application. In light of the focus on the price terms in the 2008 Undertaking, the ACCC considers it important to provide background and context about the ACCC's approach to costing the ULLS, prior to setting out the ACCC's assessment of the 2008 Undertaking against the legislative criteria. The ACCC also refers to the Telstra's costing assumptions for illustrative purposes in this section.

The ACCC has provided guidance to industry on pricing principles that would generally be appropriate in the pricing of regulated services and in particular the ULLS. These are detailed in the ACCC's *Access Pricing Principles - Telecommunications, a guide*<sup>64</sup> and more recently in the ACCC's *Pricing Principles for Unconditioned Local Loop Service, Pricing Principles and Indicative Prices* (the 2008 ACCC Pricing Principles).<sup>65</sup>

The ACCC's final 2007 ULLS Pricing Principles conclude that Total Service Long Run Incremental Cost Plus (TSLRIC+) where '+' refers to the addition of common and indirect costs not directly attributable to the service, should be applied to the ULLS.<sup>66</sup>

As noted in its 2008 Draft Decision, TSLRIC+ establishes a broad framework and general principles only; it does not necessarily follow that all implementations of the TSLRIC+ framework will satisfy the legislative criteria the ACCC must consider, particularly the reasonableness of an undertaking under section 152AH.

The ACCC notes that several submissions in response to the ACCC's 2008 Draft Decision commented on the appropriate pricing methodology to apply to the ULLS. These submissions have been taken into account by the ACCC and detailed, where relevant in this section.

### **6.2 The concept of TSLRIC+**

This section describes the components of a TSLRIC+ framework and the purpose of applying this concept.

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<sup>64</sup> ACCC, *Access Pricing Principles - Telecommunications, a guide*, 1997.

<sup>65</sup> ACCC, *Pricing Principles for Unconditioned Local Loop Service Amendment Determination 2008 (No.1)*, p.5.

<sup>66</sup> ACCC, *Pricing Principles for Unconditioned Local Loop Service Amendment Determination 2008 (No.1)*, p.5.

### **6.2.1 Components of TSLRIC+**

The concept of TSLRIC may be better understood by breaking it up into the following components:

- ‘Total service’ refers to the cost of production of an entire service (as opposed to the cost of a particular unit which is a marginal cost concept);
- ‘Long run’ refers to a cost concept where all factors of production can be varied. In the short run, at least one factor of production (usually equipment) is fixed;
- ‘Incremental cost’ is the increment or additional cost the access provider incurs in the long run in providing a particular service as a whole, assuming all of its other production activities remain unchanged. Identifying these costs involve a comparison of the costs the access provider would incur if it did provide the service with the costs the access provider would incur if it did not provide the service.

Hence, TSLRIC is the total incremental or additional cost a firm incurs in the long run in providing a service, assuming all of its other production activities remain unchanged. It is the cost a firm would avoid in the long term if it ceased to provide a service. As such, TSLRIC can represent the costs a firm necessarily incurs in providing a service and captures the value of society’s resources used in its production.

TSLRIC is derived by summing the capital costs (consumption of capital rather than actual investment) and the operating and maintenance costs that the firm incurs in providing the service as a whole on an annual basis.

Capital costs comprise the cost of capital (the opportunity cost of debt and equity used to finance the firm) and depreciation (the decline in economic value of assets) of capital that is specific to the production of the service. These are expressed as annualised capital costs and depreciation, where annual capital costs are derived by the application of the WACC factor on the estimated costs of fixed assets.

Operating costs are the continuing operational costs of providing the service, including the labour and materials costs that are causally related to the provision of the service.

In a pure TSLRIC framework, only product-specific costs are considered with no allowance for common costs associated with multiple products. For this reason, it is usual to allocate some of the common costs associated with a regulated product. The ACCC uses TSLRIC+ where ‘+’ refers to the addition of common and indirect costs not directly attributable to the service.

### **6.2.2 Purpose of using TSLRIC+**

The application of TSLRIC+ pricing is based on the idea that, in certain circumstances, it can be desirable to set an access price that mimics the price that would prevail if the access provider faced effective competition caused by the threat of being displaced as a supplier through the possibility of bypass.

One reason the ACCC adopted TSLRIC+ in the past has been to promote efficient build/buy decisions - in particular, building of by-pass infrastructure, where efficient. Setting prices based on TSLRIC+ was intended to create the right incentives for carriers operating in downstream markets to make the appropriate choice as to whether they should invest in their own upstream infrastructure (i.e. build) in order to provide services to end-users, or to seek access from an existing upstream provider of the listed service (i.e. buy).

The ACCC notes that the degree to which *efficient* build/buy signals are achieved depends on how TSLRIC+ is implemented. This is discussed below in section 6.3. Efficient build/buy signals are where the access price is set at a level where the build option encourages the access seeker to *efficiently* invest in a network build that brings better service potential, defined in terms of productive, allocative and dynamic efficiency outcomes.

The ACCC also notes that even if cost estimates create incentives to efficiently build or buy, this does not mean that the cost estimates on which an undertaking is based would automatically mean the price terms and conditions of an undertaking satisfy each of the legislative criteria the ACCC must consider. Therefore, the ACCC notes that while such estimates may assist the undertaking to meet some of the legislative criteria; the undertaking still may not necessarily satisfy all of the legislative criteria. This recognises that the cost estimates are supporting material to an undertaking and that what is of relevance is whether on balance the undertaking satisfies the legislative criteria.

### **6.3 The implementation of TSLRIC+**

The ACCC considers TSLRIC+ to be a broad theoretical concept which can be implemented in a number of different ways, depending on how costs are measured and allocated, and the parameter values and underlying network assumptions used to produce cost estimates.

The ACCC has provided broad guidance on how it would prefer the TSLRIC+ of a regulated service to be implemented. This is set out in the ACCC's *Access Pricing Principles - Telecommunications, a guide*<sup>67</sup> and more recently in the ACCC's *Pricing Principles for Unconditioned Local Loop Service, Pricing Principles and Indicative Prices*.<sup>68</sup>

In the assessment of an undertaking the ACCC must be satisfied that implementation of that concept results in cost estimates that, on balance, meet the legislative criteria. The ACCC notes that a choice as to what assumptions are made when estimating the TSLRIC+, means that not all implementations of TSLRIC+ will result in a price term, which although based on the TSLRIC+, necessarily meets all the legislative criteria that the ACCC must consider.

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<sup>67</sup> ACCC, *Access Pricing Principles - Telecommunications, a guide*, 1997.

<sup>68</sup> ACCC, *Pricing Principles for Unconditioned Local Loop Service Amendment Determination 2008 (No.1)*, p.5.

Implementing TSLRIC+ requires a number of decisions to be made about the parameter values and underlying conceptual basis for the network design. These parameter values and underlying assumptions regarding the network design are the prime basis for the resulting TSLRIC+ estimate. Therefore, when the ACCC assesses a cost model submitted as part of an undertaking, it will have regard to the reasonableness of the parameter values and underlying network design assumptions, to determine whether cost estimates supporting the undertaking have been implemented in a fashion that would be considered reasonable under the legislative criteria set out in section 152AH of the TPA.

NERA submits that the TEA model is a TSLRIC+ model. However NERA notes that it has not conducted an analysis on the ‘appropriateness’ of the inputs that have been used in the model and has assumed that the inputs are appropriate.<sup>69</sup>

The ACCC’s view is that the relevant test in assessing whether cost estimates from Telstra’s implementation of TSLRIC+, on balance, satisfy the legislative criteria, is whether the assumptions and input values Telstra applies can support an estimate of the efficient cost of supplying the ULLS—not whether the TEA model simply applies a TSLRIC+ concept.

The ACCC considers that the existence of particular features in certain implementations of TSLRIC+ may be likely to result in estimates that, on balance, meet the legislative criteria; these features being:

- That the hypothetical efficient network operator is the access provider; and
- network assets in the hypothetical network are optimised on a forward-looking or best-in-use technology basis.

When these features exist in a TSLRIC+ model, the ACCC considers that cost estimates the cost model is based on, are likely to be efficient and forward-looking which goes towards satisfying some of the legislative criteria. These features are discussed further below.

### **6.3.1 Basing TSLRIC+ of the service on the access provider**

In practice, TSLRIC+ is based on the total service costs of a ‘hypothetical efficient network operator’. The ACCC agrees with Competition Economists Group (CEG)’s briefing that Telstra has applied the ‘hypothetical new entrant’ paradigm using estimates of forward-looking replacement costs which value copper lines when such a technology is not likely to be optimal in the present day.<sup>70</sup> CEG submits that such an application is questionable as new entrants ‘would never enter with the types of technology being modelled.’<sup>71</sup>

The ACCC considers that the incumbent’s network design should be a key consideration in determining the layout and costs of a hypothetical efficient network

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<sup>69</sup> NERA, *TSLRIC+ assessment*, 16 January 2009, p.1.

<sup>70</sup> Competition Economists Group, *Telstra ULL Price Undertaking*, November 2008.

<sup>71</sup> Competition Economists Group, *Telstra ULL Price Undertaking*, November 2008, p.1.

operator. The ACCC noted this in its *Access Pricing Principles - Telecommunications, a guide*:

The Commission will take into account the existing network design in determining TSLRIC.<sup>72</sup>

In particular, the ACCC considers that for access seekers to make efficient decisions about whether to build network infrastructure or buy the regulated service, TSLRIC+ should be based on the efficient costs that the access provider will incur over the long run in providing the service given its current network design and architecture. It should not be based on the assumption that the access provider can start again with a blank slate.<sup>73</sup> If the access seeker can, over the long run, provide the service at a lower cost than the access provider, it is economically efficient for the access seeker to duplicate the infrastructure. The ACCC also notes that having regard to the actualities of existing network deployment, where possible, ensures that the hypothetical efficient network assumption does not lead to unrealistic deployment outcomes.

The ACCC, therefore, considers that basing TSLRIC+ of the service on the efficient costs the access provider incurs in the long run in providing the regulated service is consistent with the purpose of creating incentives to efficiently build or buy, where there is potential for bypass through the duplication of infrastructure.

The CCC submits that ‘in the event that an operator did decide to bypass the local loop, it would not likely use copper.’<sup>74</sup> The CCC also states that Telstra, in its TEA model, has taken into account obstacles that a new entrant would face when building a copper network, such as trenching and labour costs.<sup>75</sup>

The ACCC also notes the comment from Europe Economics in a report prepared for Optus:

If TSLRIC+ is based on the concept of efficiently reproducing a copper-based access network, this would not be the relevant benchmark for the “build or buy” decision. New entrants would not reproduce a copper-based network similar to the one that has already been rolled out by the incumbent. Instead, they will roll out the technology that is most appropriate to the areas they serve (for example additionally using fibre in urban areas and radio in rural areas).<sup>76</sup>

The ACCC has taken these submissions into account and observes that an access provider that is operating efficiently in the long run would not choose to build a copper network but would be highly likely to use alternate technologies where the costs involved in the breaking and reinstating of concrete is not incurred (e.g. wireless), or where performance may be more efficient (e.g. using fibre instead of copper). In particular, the ACCC notes that Telstra's actual optimisation of the CAN

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<sup>72</sup> ACCC, *Access Pricing Principles - Telecommunications, a guide*, 1997, p.38.

<sup>73</sup> Statement by Graeme Woodbridge, *Telstra Corporation Limited (No 1 and 2)* [2000] ACompT, paragraph 80.

<sup>74</sup> Competitive Carriers Coalition, *CCC submission on Draft Decision*, 15 December 2008, p. 6.

<sup>75</sup> Competitive Carriers Coalition, *CCC submission on Draft Decision*, 15 December 2008, p. 6.

<sup>76</sup> Europe Economics, *Pricing Principles for the Unconditioned Local Loop Service (ULLS) in Australia The Conceptual Framework Final Report for OPTUS*, March 2009, p.23.

today indicates that it recognises other technologies are superior to copper. For example, the ACCC is aware that as Telstra has optimised its network over time, it has replaced copper with fibre such that 10.2 per cent of SIOs in the Telstra CAN do not terminate at the exchange.<sup>77</sup> The ACCC understands that the majority of these SIOs are fed by fibre from the exchange to a large pair gain system or RIM. The ACCC considers that Telstra's optimisation choices, such as replacing copper with optical fibre, demonstrates that the TEA model's hypothetical copper bypass network is unrealistic.

### 6.3.2 Methods of estimating TSLRIC+

Telstra submits that the TEA model applies a 'standardised form of TSLRIC+ pricing' and that the ACCC has previously indicated that a TSLRIC+ methodology will be used to assess future prices.<sup>78</sup> Telstra further submits that the ACCC's 2002 and 2007 pricing principles affirm the suitability of TSLRIC+ for setting prices along with previous decisions from the Australian Competition Tribunal.<sup>79</sup>

However, as stated above and in the ACCC's 2008 Draft Decision, of primary relevance to the ACCC is whether the actual implementation of the concept of TSLRIC+ under consideration meets the legislative criteria that the ACCC must consider in assessing an undertaking.

There are a variety of methods that can be used to derive a TSLRIC+ estimate of a service. For example, TSLRIC+ may be estimated by reviewing the historic and current costs of operators. In relation to historic costs, the ACCC has generally considered that outlays incurred in past periods provide little assistance in determining the costs that would be incurred by an efficient supplier of a service in the present day. Using historic costs as the basis for pricing decisions can therefore distort consumption and investment decisions. For instance, historic costs guarantee a normal commercial return on costs to the access provider, regardless of the quality of the investment decision and whether such an investment decision is good or poor. Such an approach does not create appropriate incentives for the access seeker to make efficient build or buy decisions.

Current costs generally provide a superior alternative to historical costs but can suffer from omission or incomplete information about what assets have been fully depreciated over time. Further current costs may fail to provide appropriate incentives for service providers to build or buy as basing the estimate of TSLRIC+ on current costs alone would mean that access seekers may pay more than the efficient costs, potentially reducing entry.

Another method of estimating TSLRIC+ is through the application of an optimised cost model using forward-looking (current) costs. These costs are those that the access provider would incur in the long term using the most efficient means possible and

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<sup>77</sup> Based on analysis of information provided in response to the ACCC Infrastructure Record-Keeping Rule 2007, December 2007, the document is titled *Telstra\_MDF\_non\_MDF\_data\_ACCC\_2009.xls* and was received 5 March 2009

<sup>78</sup> Telstra, *Response to access seeker submissions*, 18 November 2008, p. 3.

<sup>79</sup> Telstra, *Response to access seeker submissions*, 18 November 2008, pp. 5-6.

commercially available. This methodology focuses on the efficient costs an access provider would incur over time so that errors or distorted decisions that an access provider may have incurred in the past are set aside and hence the current opportunity cost of the services to be provided is reflected.

The TSLRIC+ framework is usually applied using a forward-looking costs framework. In principle, the application of forward-looking costs would value all existing assets at the cost of a Modern Equivalent Asset (MEA). A MEA is the lowest cost asset built with the latest available, proven technology which can provide the equivalent service potential as the service which is being costed. In general, the forward-looking approach is more compatible with the competitive standard of efficiency, since in a competitive market, prices are set on the basis of the prevailing technology. In a competitive environment, operators would compete on the basis of costs likely to be incurred and are not compensated for costs incurred through inefficiency. In this regard, the estimation of efficient and forward-looking costs using a TSLRIC+ framework may indicate that a price term of an undertaking based on TSLRIC+ satisfies the legislative criteria that the ACCC must consider in determining whether to accept or reject an undertaking.

In response to the 2008 Draft Decision, Telstra submits that the ACCC is undertaking a ‘mix and match’ approach in relation to what cost base—historic or current—it uses to assess the price terms in the 2008 Undertaking.<sup>80</sup> Telstra further submits that the ACCC’s Draft Decision creates uncertainty as to whether TSLRIC+ pricing fulfils the legislative criteria.<sup>81</sup> With regard to pricing declared services Telstra submits that the objective of the legislative criteria is to ‘achieve the competitive market outcomes that would exist if the market for the supply of those services was effectively competitive.’<sup>82</sup>

Whilst the ACCC has sought historic and current cost information from Telstra, it notes that it has not applied this cost information in a ‘mix and match’ manner. Rather, for the purposes of estimating the efficient costs of providing the ULLS in the long run, the ACCC has indicated a preference for current cost information. It will also have regard to actualities of network deployment given that the hypothetical efficient network assumption can lead to unrealistic deployment outcomes. However, the ACCC may consider other information such as historic cost information when assessing an undertaking according to specific legislative criteria, such as considering the ‘direct costs of providing access to the declared service’.<sup>83</sup>

## 6.4 Modelling the CAN

Designing a network model to estimate TSLRIC+ requires choices about how much optimisation to include in the modelled network. These choices can be represented on a spectrum, as shown in the figure below.

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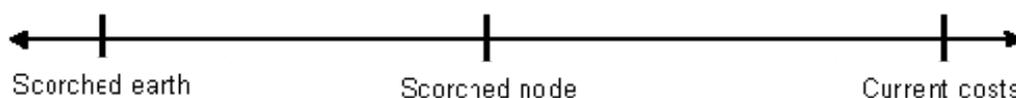
<sup>80</sup> Telstra, *Response to the ACCC’s Draft Decision*, 23 December 2008, p. 10.

<sup>81</sup> Telstra, *Response to the ACCC’s Draft Decision*, 23 December 2008, p. 14.

<sup>82</sup> Telstra, *Response to the ACCC’s Draft Decision*, 23 December 2008, p. 14.

<sup>83</sup> Paragraph 152AH(1)(d) *Trade Practices Act 1974*.

**Figure 6.4 Approaches to Network Design in TSLRIC Models** <sup>84</sup>



Under the scorched earth approach, nothing is fixed, not even the location of the nodes. The scorched earth network is what would be built if no network currently existed, and is generally based on the location of customers and forecasts of demand for services. As all network elements are subject to most efficient/best practice analysis, this approach generally gives the lowest estimate of TSLRIC+, because it removes all inefficiencies associated with the historical development of the network through time. While this approach may in theory give a measure of forward-looking costs; at a practical level, it is inherently susceptible to error, as there is no reference to an actual network deployment.

At the other end of the spectrum, a network can be based on the current costs of the existing firm. This will give the highest estimate of TSLRIC+ because it does not allow for any optimisation beyond what is already contained in the actual, existing network.

The scorched node approach is an intermediate approach that assumes the location of certain key features (nodes) of the access provider's existing network, such as exchanges and pillars, will be fixed; but optimises certain components of the network such as routes between and within nodes. Therefore, the ACCC has generally accepted the scorched node approach as an appropriate basis to model the fixed network.

When optimising network assets, costs can be valued based on the *actual* technology in use, or the *best-in-use* technology or on *forward-looking* technology (as if the most efficient/best technology commercially available or MEA were used). The ACCC has indicated a preference for either best-in-use or forward-looking technology, both of which optimise the replacement cost of the network.<sup>85</sup> Valuing assets based on these technology assumptions estimates the present-day cost of replacing the network asset with another asset that provides the equivalent service potential. This need not be the same asset, but rather is the asset that hypothetically would be the best (least cost) option for providing the equivalent service under best-in-use or forward-looking technology. Valuing assets assuming forward-looking technology would apply the most efficient technology for the provision of services on the ULLS – this may mean wireless loops and fibre.

However, in the past the ACCC has generally accepted the assumption of the best-in-use technology to estimate costs, as this requires less speculation about future evolving technologies or substantially altered network design. It is important to note that application of the optimised replacement cost approach to asset valuation

<sup>84</sup> The distance between the points on the spectrum is illustrative only.

<sup>85</sup> ACCC, *Access Pricing Principles - Telecommunications: a guide*, July 1997, p. 42.

assumes that the least cost technology is continually changing and there is the potential for infrastructure duplication using that cheaper technology.

Harris and Fitzsimmons argue that a TSLRIC model must take into account real world conditions, and that a failure to do so will lead to artificially low prices,<sup>86</sup> which would discourage investment by efficient operators.<sup>87</sup> The ACCC agrees with Harris and Fitzsimmons that real world conditions need to be taken into account when modelling the efficient costs of providing the ULLS in the long run. The ACCC considers that this is precisely what the scorched node approach to modelling does; it uses information about the access provider's existing network configuration as the basis for estimating the efficient costs incurred in providing the ULLS in the long run.

## **6.5 Relevance of the current implementation of TSLRIC+**

As stated previously, the ACCC has indicated that 'optimised replacement cost' is its generally preferred method of cost valuation.<sup>88</sup> Under this approach, each time an access price is determined, the existing sunk investment (in this case, the CAN) is revalued on the basis of a hypothetical situation where a brand new network is instantaneously constructed, and replicates the existing network's service potential, but uses best-in-use technology based on forecast demand. The 'cost' of building this hypothetical replacement network is therefore the 'asset base' from which access prices are determined.

The application of an optimised replacement cost approach was premised on the fact that the cost that the access price is based on would send appropriate efficient build/buy signals. These signals were considered necessary because, when the telecommunications access regime commenced, it was believed that rapid technological change (where the least-cost technology continually changes), would lead to a declining unit cost of service provision, increasing the likelihood that access seekers would build their own competing infrastructure to provide end-user services. In particular, with falling replacement costs, valuing the network at replacement cost would mean that the asset base would be revalued downwards over time as costs fell, resulting in falling access prices, and thus discouraging access seekers from inefficiently building their own competing infrastructure.

However, the ACCC is aware that there are limitations in the current implementation of TSLRIC+ and that the past rationale of promoting efficient/build decisions when pricing the ULLS may be less relevant.

The ACCC notes that the current implementation of TSLRIC+ may, in practice, have resulted in the past depreciation of existing asset values not being taken into account in the revaluation of network assets in each regulatory period. Therefore, existing assets do not drop out of the asset base because they are continually revalued at optimised replacement cost. This limitation is particularly apparent when having to

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<sup>86</sup> RG Harris and W Fitzsimmons, *Assessment of the TEA model*, 4 November 2008, p. 19.

<sup>87</sup> RG Harris and W Fitzsimmons, *Assessment of the TEA model*, 4 November 2008, p. 20.

<sup>88</sup> Reproduction cost may also be appropriate, in cases where replacement cost is difficult to quantify.

cost enduring assets such as trenches, which are likely to be less susceptible to bypass. The ACCC notes that under Part XIC of the TPA, it is open to parties to put forward their preferred pricing approaches, and that Telstra has consistently proposed particular forward-looking TSLRIC+ principles, including asset revaluation. The ACCC also notes that this continual revaluation of the asset base, where it is unclear when the revaluation will occur creates considerable uncertainty for both access provider and access seekers.

The ACCC acknowledges that the past rationale of promoting efficient build/buy decisions through the current implementation of TSLRIC+ may be less relevant in a regulatory environment where the competitive state of telecommunications markets is changing and there may be fewer prospects for efficient by-pass. The ACCC also observes that there are limitations in the application of TSLRIC+ outside its original focus on PSTN assets. In response to the ACCC's 2008 Draft Decision, Optus also questions the suitability of TSLRIC+ for pricing the ULLS.<sup>89</sup> In particular, Optus considers that a NBN roll out would have limited potential for infrastructure based competition because Telstra has already recovered a 'substantial proportion of the costs incurred historically on network construction.'<sup>90</sup> Furthermore, Optus cites Europe Economics as indicating that where the provision of a service is expected to remain a monopoly, the application of TSLRIC+ as a pricing methodology is less appropriate.<sup>91</sup>

The ACCC is conscious of the evolving nature of the telecommunications industry. In particular, since the 2008 ACCC Pricing Principles, the lack of deployment of competing end-to-end infrastructure by access seekers for some services and/or some regions may necessitate a review of the current access pricing principles, and the consideration of other appropriate pricing approaches.

## 6.6 Conclusion

The overall conclusions of the ACCC in regard to the issues discussed in this section are:

- *TSLRIC+ may be implemented in a number of ways, depending on the parameter values and underlying assumptions regarding network design*

Implementing TSLRIC+ requires a number of decisions to be made about the parameter values and underlying conceptual basis for the network design. These parameter values and underlying assumptions regarding the network design are the prime basis for the resulting TSLRIC+ estimate.

- *Of primary relevance to the ACCC is whether the cost estimation supporting the undertaking has been implemented in a fashion that would be considered reasonable under the legislative criteria set out in section 152AH of the TPA.*

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<sup>89</sup> Optus, *Response to the ACCC's Draft Decision*, December 2008, p. 7.

<sup>90</sup> Optus, *Response to the ACCC's Draft Decision*, December 2008, p. 7.

<sup>91</sup> Europe Economics, 2004, *Pricing Methodologies for Unbundled Access to the Local Loop*, Final Report, p. 50. As cited in: Optus, *Response to Draft Decision*, December 2008, p. 6.

When the ACCC assesses a cost model submitted as part of an undertaking, it will have regard to the reasonableness of the parameter values and underlying assumptions regarding network design, to determine whether cost estimates supporting the undertaking have been implemented in a fashion that would be considered reasonable under the legislative criteria set out in section 152AH of the TPA.

The ACCC's assessment of Telstra's implementation of TSLRIC+ is discussed in the next section.

## **7 Assessing price terms in the 2008 Undertaking**

### **7.1 Introduction**

This section describes the ACCC's review of key material considered in its assessment of the price terms in the 2008 Undertaking against the statutory criteria.

When assessing whether the price terms in the 2008 Undertaking are consistent with the legislative criteria, in particular, whether the terms of the undertaking are reasonable under section 152AH of the TPA, the ACCC has relied on various sources of information to assist it in determining whether the proposed undertaking price satisfies the legislative criteria that the ACCC must consider.

The ACCC discusses the following key sources of information used in this final decision, to determine whether the terms and conditions specified in the 2008 Undertaking are reasonable:

- Telstra's implementation of TSLRIC+ (the TEA model default parameter values and underlying network design assumptions);
- results from a comparison of international local loop prices with Telstra's proposed \$30 price;
- trends in ULLS prices and uptake over time; and
- preliminary results from the Analysys cost model, which provides guidance on the range of possible ULLS cost estimates.

The ACCC's assessment of the price and non-price terms and conditions of the 2008 Undertaking against the reasonableness criteria in section 152AH of the TPA is set out in section 8.

### **7.2 Relationship between the \$30 Proposed Monthly Charge and TEA model estimate**

In support of its 2008 Undertaking, Telstra submitted the TEA Model. Telstra's 2008 ULLS Undertaking price of \$30 (Proposed Monthly Charge) is below the price estimate, given by version 1.3 of the TEA Model, of \$46.54 in Band 2 ESAs.

To understand the relationship between the \$30 Proposed Monthly Charge and the TEA model estimate, the ACCC in a letter dated 28 March 2008 requested from Telstra the 'mathematical calculations and TEA model parameter changes used to reconcile the 2008 Undertaking monthly charge of \$30 for Band 2 and the TEA model's estimate of a ULLS monthly charge of approximately \$50.<sup>92</sup> In response, Telstra stated that:

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<sup>92</sup> ACCC letter to Telstra, "Telstra's March 2008 ULLS Undertaking for Band 2: Request for further information", 28 March 2008.

A \$30 ULLS price, while at this stage below TSLRIC+, is a reasonable first step for industry to take toward TSLRIC+-based pricing and cost recovery.

Telstra's proposed charge of \$30 is reasonable for a number of reasons, including the fact that it is fully supported by the results of the TEA model under any reasonable set of inputs. Since the TEA model is a TSLRIC+ model, the proposed charge is consistent with the statutory criteria. Additionally, the \$30 undertaking price reflects the level persistently sought in commercial negotiations with access seekers as well as in previous regulatory proceedings. Therefore, it in no sense amounts to a "rate shock" for access seekers. It is open to the Commission to find, on our evidence, that a higher price would also be reasonable. However, this is not a reason to reject Telstra's undertaking as it does not mean that the \$30 price charged over the term of Telstra's ULLS Undertaking is unreasonable.<sup>93</sup>

Telstra also submits that the Proposed Monthly Charge of \$30 is limited to the term of the 2008 Undertaking. After the term of the 2008 Undertaking has expired, Telstra submits that ULLS prices should be increased to TSLRIC+ (estimated as \$46.54 by version 1.3 of the TEA Model) through commercial negotiation, arbitration or Telstra lodging another undertaking.<sup>94</sup>

The ACCC notes that it is required to assess whether the \$30 Proposed Monthly Charge is reasonable (that is, the price terms of an undertaking are reasonable) and thereby satisfies the legislative criteria. The TEA model is assessed as being relevant material in support of the Proposed Monthly Charge. In particular, the ACCC has assessed whether Telstra's implementation of TSLRIC+ is able to support cost estimates that reflect the efficient and forward-looking costs of providing the ULLS.

### **7.3 The ACCC's assessment of Telstra's implementation of TSLRIC+**

In this section, the ACCC provides an assessment of Telstra's implementation of TSLRIC+. A comprehensive summary of the assessment of Telstra's assumptions on network design and engineering rules and default parameter values are detailed in Appendix B.

#### **7.3.1 Telstra's implementation of TSLRIC+**

As noted in section 6, the ACCC considers that, even if a particular model upon which a proposed price is based conforms to the TSLRIC+ concept, this is not sufficient to infer that the estimates from such a model are reasonable estimates. Rather, the issue is whether Telstra's implementation of TSLRIC+ results in reasonable cost estimates, which requires an assessment of the reasonableness of underlying assumptions and parameter input values in the cost model.

The ACCC has refined its thinking on whether Telstra's implementation of TSLRIC+ can support estimates that are efficient and forward-looking as a result of submission received in response to the 2008 Draft Decision. In particular, the ACCC has firmed

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<sup>93</sup> Telstra letter to ACCC, titled "Telstra's March 2008 ULLS Undertaking for Band 2: Request for further information", 7 April 2008.

<sup>94</sup> Telstra, *Undertaking is reasonable*, 4 April 2008, p. 4.

its view that Telstra's implementation of TSLRIC+ is not likely to result in cost estimates that are efficient and forward-looking.

The ACCC has found that Telstra's implementation of TSLRIC+ suffers from an inherent inconsistency—it applies a scorched node approach to modelling in that the TEA model is based on Telstra's existing CAN but assumes that a new entrant would replicate the entire copper Telstra network in the present day. The ACCC notes, however, that a new entrant may choose other technology options such as fibre and wireless, as well as a different network design when building an access network today.

It is apparent in several cases that Telstra's implementation of TSLRIC+ is intended to estimate the costs of a hypothetical new entrant. For instance, in Telstra's submission in response to the Draft Decision, Telstra states:

The price proposed in Telstra's Undertaking is supported by the result of the TEA model which calculates the TSLRIC+ of an efficient new entrant supplying ULLS.<sup>95</sup>

Harris and Fitzsimmons similarly state that their view is that estimating TSLRIC+ requires determining what it would cost a new firm to build, operate and maintain a new CAN.<sup>96</sup>

However, unlike the TEA model network, a 'hypothetical new entrant' would be able to adopt a more efficient network design, and/or use other technologies such as fibre or wireless. It would be unlikely to replicate Telstra's existing copper network, including the existing exchange and pillar locations.

Accordingly, the ACCC considers that Telstra's modelling paradigm effectively assumes that the new entrant repeats the legacy network design decisions of the incumbent, thereby increasing the cost attributed to the hypothetical network.

Having endorsed an approach that models a new network that would not be built, Harris and Fitzsimmons advocate that the costs associated with this new network should be estimated having regard to 'the environment as it exists today'. In particular, they express the view that the new firm building the new network 'would not have the luxury of installing its network in unobstructed green field conditions.'<sup>97</sup>

This statement from Harris and Fitzsimmons suggests a new entrant would build a network that replicates the Telstra copper network and, therefore, would have to face costs such as the breaking and re-instating of concrete. The ACCC considers that a new entrant would not choose this deployment option for those parts of the network that are potentially replicable especially when compared to other options presently available that do not require such significant cost to be incurred.

This inconsistency is apparent again in Harris and Fitzsimmons' submission when, in their criticism of the ACCC's views on modelling the fixed network, they state that it is inconsistent to assume an instantaneous network build for the purposes of using

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<sup>95</sup> Telstra, Response to ACCC's Draft Decision, 23 December 2008, p. 24.

<sup>96</sup> RG Harris and W Fitzsimmons, *Assessment of the TEA model*, 4 November 2008, p. 15.

<sup>97</sup> RG Harris and W Fitzsimmons, *Assessment of the TEA model*, 4 November 2008, p. 15.

‘best in use’ technology and dimensioning the network, but to also assume trench sharing in new estates, which could only happen if the network were built over a number of years.<sup>98</sup>

Harris and Fitzsimmons appear to indicate that if a network is built instantaneously then a new entrant would not be able to exploit trench sharing that may have occurred over the previous years; therefore, the trench sharing is constrained to the level that occurs at the time of the instantaneous network build. However, the ACCC notes that as Telstra’s implementation of TSLRIC+ applies a scorched node approach, the actualities of network deployment (in this case, that the network is built over a number of years) is relevant to the modelled network design. Therefore, as Telstra has had the opportunity to trench share over time, this should be taken into account when modelling the hypothetical network.

As the scorched node modelling paradigm used by the TEA model assumes that a new entrant repeats the inefficient deployment decisions of the incumbent, this increases the cost attributed to the hypothetical network. In this regard, the ACCC does not consider that Telstra’s implementation of TSLRIC+ can support cost estimates that reflect the efficient cost of providing the ULLS. The ACCC considers that when using a cost model there should be consistency in the underlying network design assumptions. The ACCC considers that networks can be designed as a ‘scorched node’ or ‘scorched earth’– what is of importance is that model assumptions are consistent with the scorching approach applied.

The ACCC concludes that the internal inconsistencies that exists in Telstra’s implementation of TSLRIC+ means that any cost estimates from such implementation need to be considered with caution.

The ACCC has also completed further testing of Telstra’s implementation of TSLRIC+, including key assumptions and default parameter values, to assess whether cost estimates from Telstra’s implementation of TSLRIC+ are reasonable. Furthermore, as set out below, the ACCC has applied another set of assumptions to the TEA model, the results of which indicate that the Proposed Monthly Charge is out of the range of estimates that could not be considered reasonable.

### **7.3.2 Further testing of Telstra's implementation of TSLRIC+**

The ACCC acknowledges that Telstra has submitted the TEA model as a significant piece of supporting material in respect of its 2008 Undertaking, and that Telstra’s implementation of TSLRIC+ should therefore be subject to comprehensive scrutiny.

As noted above, the ACCC has performed an assessment of the Telstra’s implementation of TSLRIC+ - its underlying network design assumptions and default parameter values - despite its view that the TEA model suffers from an inherent inconsistency as to the identity of the hypothetical operator.

In this section, the ACCC provides:

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<sup>98</sup> RG Harris and W Fitzsimmons, *Assessment of the TEA model*, 4 November 2008, pp. 22–23.

- a summary of its assessment of Telstra's implementation of TSLRIC+ - the network design assumptions, engineering rules and default parameter values Telstra has applied; and
- the results of the ACCC's own scenario run of the TEA model. The scenario run was undertaken to see what results would be achieved by attempting to overcome the inherent inconsistency in the application of the hypothetical operator by Telstra.

***Summary of the ACCC's assessment of Telstra's implementation of TSLRIC+, the underlying network design assumptions and default parameter values***

As noted in section 6, the ACCC considers model estimates that reflect the efficient, forward looking costs of providing the ULLS are likely to satisfy the legislative criteria.

With this in mind, the ACCC's assessment of Telstra's implementation of TSLRIC+, the underlying network design assumptions and default parameter values, is summarised below. A more detailed assessment is provided in Appendix B.

*Ability to assess the TEA model*

The ACCC considers that the TEA model itself is, overall, open and transparent but the ACCC has concerns about the limited opportunity for external review of the model due to confidentiality restrictions imposed by Telstra for access to the full version of the TEA model.

*Engineering rules and network design*

The ACCC considers that Telstra's implementation of TSLRIC+ suffers from an inherent inconsistency in its application of the 'hypothetical operator'. This directly affects the engineering rules and network design assumptions in the TEA model. For instance, Telstra's implementation of TSLRIC+ uses as a starting assumption Telstra's actual copper routes yet Telstra repeatedly refers to the TEA model producing estimates faced by a new entrant. Further, the Telstra's implementation of TSLRIC+ assumes that the hypothetical network that would be built in the present day would be a copper network which effectively replicates Telstra's network. This assumes that a new entrant would repeat the legacy network design decisions of the incumbent, which results in attributing a higher cost to the hypothetical network. Therefore, estimates from such a model would not be efficient and forward-looking.

The ACCC has detailed its views on specific aspects of Telstra's assumptions regarding the engineering rules and network design in Appendix B.

*Telstra's default network cost assumptions*

The ACCC has made the following assessments in relation to Telstra's default network cost assumptions:

- the value of equipment costs and vendor prices are overestimated;
- the inclusion of lead-in costs result in an overestimation of network costs;

- the inclusion of the surface barriers (such as the breaking and reinstating of concrete) as a component of trenching costs results in an overestimate of network costs. The ACCC considers that Telstra is inherently inconsistent in its implementation of TSLRIC+ in the TEA model with regard to the application of the hypothetical operator. In particular, the Telstra applies a scorched node approach to modelling the CAN yet Telstra assumes that the new entrant would replicate Telstra's entire copper network and would therefore face costs such as the breaking and reinstating of concrete. The consequence of the inherent inconsistency in Telstra's application of the hypothetical operator means that the costs of the hypothetical network are artificially inflated as it assumes that the new entrant will repeat the legacy network design decisions involving costs such as breaking and re-instating surface barriers, which may not be incurred in a forward-looking network design.
- Telstra's preferred trench sharing value of 1 per cent in new estates is an underestimate of trench sharing in the present day;
- operations and maintenance and indirect cost factors are overestimated;
- the cost of capital is overestimated. While the ACCC and Telstra do agree on a number of the WACC input parameters, the ACCC rejects Telstra's overall WACC as excessive; and
- a straight line (flat tilt) annuity will result in over compensation to Telstra.

The ACCC concludes that, overall, these default network cost assumptions would lead to an over-estimation of the efficient costs of providing the ULLS.

### ***TEA model scenario run***

Given its conclusion that Telstra's implementation of TSLRIC+ results in estimates that are not within the expected range of prices, the ACCC has tested the TEA model using another set of assumptions to see what results would be achieved by attempting to overcome the inherent inconsistency in Telstra's application of hypothetical operator. The ACCC also notes that Telstra has asserted that the Proposed Monthly Charge can be supported by the results of the TEA model under any reasonable set of inputs.<sup>99</sup>

The ACCC applied the following assumptions to version 1.3 of the TEA model in its scenario run:<sup>100</sup>

- trenching of turf only;
- the ACCC's calculations for the pre-tax WACC of 9.64, post-tax vanilla WACC of 8.83;<sup>101</sup>

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<sup>99</sup> Telstra, *Telstra's ULLS Undertaking is Reasonable*, 4 April 2008, p. 2.

<sup>100</sup> The calculations used by the ACCC to derive the estimated range were provided to Telstra on 18 December 2008, and is available on the ACCC website.

- tilt to the ducts and pipes of 3 per cent;<sup>102</sup>
- \$0 for lead-ins rather than the TEA model assumption of \$282.91; and
- taking account of the fall in O&M costs by \$2.51, which Telstra estimated was the net result from corrections to the factor calculation issues raised by the ACCC in its 2008 Draft Decision.<sup>103</sup>

In combination, these assumptions result in an estimated range of \$18-\$21 for the ULLS monthly charge (which includes a specific charge) which is significantly less than \$30.

This leaves the ACCC with significant doubt as to whether the Proposed Monthly Charge of \$30 is reasonable and reflects the efficient costs of providing the ULLS. While this does not, of itself, mean that the ACCC cannot be satisfied of the reasonableness of the \$30 price, the ACCC does have concerns that the \$30 figure appears to fall outside what could be considered, when all submissions are taken into account, to be a reasonable price range. The results of the ACCC's scenario run indicate that Telstra's application of its TEA Model over-estimates network costs.

The ACCC also had other concerns expressed in the Draft Decision regarding adjustments to the O&M and indirect cost assumptions, which were not addressed by Telstra. In this regard, an additional further decrease in the estimated monthly charge would be expected. These were not included in this scenario run of the TEA model as this would have required significant data manipulation.

To understand the significance of the proposed \$30 charge in terms of revenue, the ACCC notes that Telstra would receive an additional \$97 million in revenue per annum<sup>104</sup> when comparing Telstra's annual revenue at the current regulated price<sup>105</sup> versus at a \$30 charge.

The quantum of the impact of the inclusion of breaking and reinstating concrete costs to network costs can also be seen from the fact that these surface barrier costs contribute \$11.72 (25 per cent) to Telstra's estimate of \$46.54.

The ACCC also notes Optus' submission that it used version 1.2.1 of the TEA model to undertake its own scenario run using revised parameters.<sup>106</sup> These revised parameters include a number of the ACCC's parameters, including Ovum's proposed pre-tax WACC. In addition, Optus modified the costing information in the TEA

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<sup>101</sup> The risk-free rate and the A-rated cost of debt were estimated from closing prices for the 10 trading days ending 8 April 2009.

<sup>102</sup> A 3 percent tilt reflects forecast inflation from December 2008 to December 2010. see [http://www.rba.gov.au/PublicationsAndResearch/StatementsOnMonetaryPolicy/Aug2008/list\\_of\\_tables.html#table\\_17](http://www.rba.gov.au/PublicationsAndResearch/StatementsOnMonetaryPolicy/Aug2008/list_of_tables.html#table_17)

<sup>103</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December, p. 83.

<sup>104</sup> \$14.30 plus a proxy for the ULLS specific charge of \$2.45

<sup>105</sup> \$97 085 400 = ULLS lines in Dec 2008 (610 600) \* 13.25 \* 12

<sup>106</sup> Optus, *Response to the ACCC's Draft Decision*, December 2008, p. 29.

model to make it consistent with the confidential Optus submission by [begin c-i-c] [redacted] [end c-i-c]. Optus submits that these changes result in a monthly charge of [begin c-i-c] [redacted] [end c-i-c], which reduces the valuation of the network by [begin c-i-c] [redacted] [end c-i-c].

In relation to the scenario discussed above, Optus notes that this does not indicate ‘the entire sum of changes that would be necessary to make the TEA model acceptable.’<sup>107</sup> Optus states that this is because there are ‘fundamental problems with many other aspects of the model such as the lack of optimisation along routes’.<sup>108</sup>

In its submission of 23 March 2009, Telstra state that its analysis from testing the materiality of the ACCC’s position on the inputs into the TEA model shows that it would be an error to reject its undertaking since, even after running the TEA model with the ACCC’s set of input values, the TSLRIC+ estimate of ULLS in band 2 is above the Undertaking price of \$30. Telstra submit that the approach taken to measure the materiality involves quantifying the cumulative impact of all changes proposed by the ACCC in the 2008 Draft Decision and, in cases where clear guidance was not provided by the ACCC in the Draft Decision, the most recent of the ACCC’s other decisions in relation to ULLS. Telstra further submit that to achieve a price below \$30, a user of the model must uniformly adopt the most extreme and unrealistic assumptions.<sup>109</sup>

The ACCC considers that the alternative assumptions it applied to its scenario testing of the TEA model were not extreme or unrealistic. The significance of the effect of changing the values of key parameters is not surprising to the ACCC as clearly some of these parameter values (such as the costs of breaking an re-instating concrete) rely heavily on the underlying network design assumptions of the TEA model. The ACCC does not consider the materiality of changes in input values provides support as to whether Telstra’s proposed charge of \$30 reflects efficient and forward-looking costs - it simply demonstrates that particular inputs are sensitive to change. Further, the ACCC considers that the relevant issue from its own scenario run of the TEA model is that the resulting estimated range of \$18-\$21 is significantly less than Telstra’s proposed charge of \$30.

### **7.3.3 Overall assessment of Telstra's implementation of TSLRIC+**

The ACCC considers that Telstra's implementation of TSLRIC+ suffers from inherent inconsistency in its application of the hypothetical operator in the TEA model; such an assumption is a key underlying hard-coded feature in a cost model. In particular, this inconsistency assumes the new entrant repeats the legacy network design decisions of the incumbent, thereby increasing the cost attributed to the hypothetical network.

The ACCC prefers the application of the access provider as the hypothetical operator as this is consistent with encouraging efficient build/buy signals, where bypass is

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<sup>107</sup> Optus, *Response to the ACCC’s Draft Decision*, December 2008, p. 30.

<sup>108</sup> Optus, *Response to the ACCC’s Draft Decision*, December 2008, p. 30.

<sup>109</sup> Telstra, *Telstra’s Ordinary Access Undertaking for the Unconditioned Local Loop Service: Materiality Testing*, Draft version, 23 March 2009, p. 1.

possible, which satisfies some of the legislative criteria. However, the ACCC recognises that networks can be designed as a ‘scorched node’ or ‘scorched earth’. Accordingly, what is of importance is that model assumptions are consistent with the scorching approach applied.

Notwithstanding its concerns over Telstra's implementation of TSLRIC+ in its application of the hypothetical operator, the ACCC undertook further analysis and testing of Telstra's implementation of TSLRIC+. Its assessment of the Telstra's underlying network design assumptions and parameter values and results of the ACCC's own scenario with another set of parameter values indicate that the Telstra's implementation of TSLRIC+ overestimates the efficient cost of providing the ULLS in the long run.

Given this assessment, the ACCC concludes that it does not consider that Telstra's implementation of TSLRIC+ in the TEA model is able to support a conclusion that the Proposed Monthly Charge is based on cost estimates that reflect the efficient and forward-looking costs of providing the ULLS.

## **7.4 Comparison of international local loop prices with the Proposed Monthly Charge**

### **7.4.1 Introduction**

The ACCC's 2008 Draft Decision set out the results from international benchmarking analysis, which compared ULLS prices in 14 European Union (EU) countries with the Proposed Monthly Charge. The analysis adjusted the EU countries' prices to take into account the exchange rate and purchasing power parity (PPP), as well as noting the effects of population densities on ULLS cost per service.

The ACCC considered in its 2008 Draft Decision that it would be difficult to conclude that the Proposed Monthly Charge of \$30 can be justified when compared to lower ULLS charges in the comparator set.

The ACCC received a number of submissions on the international benchmarking analysis in the 2008 Draft Decision. Submissions addressed two broad inter-related issues:

- the relevance of international benchmarking analysis; and
- the factors relevant in developing robust international benchmarking analysis.

These issues are discussed in turn below, including detailing submissions and the ACCC's response to these submissions.

The ACCC notes the comments submitted about the limited nature of the international benchmarking analysis undertaken in the ACCC's 2008 Draft Decision. The ACCC acknowledges comments put forward from Telstra and their consultants, Ingenious Consulting (Ingenious), and notes that an important reason for a consultation process is for preliminary analysis to be subject to external review. In this context, the ACCC has had regard to these comments and engaged Ovum to further develop the international benchmarking analysis. In response to the Ovum analysis, Ingenious

submitted a second report essentially repeating its views as set out in its first report in respect to the adjustments required to ensure a valid comparison between different countries. The results of the Ovum analysis and the ACCC's responses to issues raised by Ingenious are discussed below.

#### **7.4.2 Relevance of international benchmarking in assessing price terms of the 2008 Undertaking**

Telstra submits that the ACCC's international benchmarking analysis in the 2008 Draft Decision provides no evidence as to whether Telstra's proposed price satisfies the legislative criteria. Telstra submits that the ACCC's approach in the 2008 Draft Decision is likely to lead to outcomes that are inconsistent with the statutory criteria.<sup>110</sup> Telstra also submits that in previous ULLS Undertakings the ACCC concluded that international benchmarking cannot be used in preference to the application of a detailed analysis of the statutory criteria.<sup>111</sup>

Telstra also submits that the ACCC has moved away from the precedent set by the Australian Competition Tribunal and the ACCC over the last decade.<sup>112</sup> It considers that the ACCC and Australian Competition Tribunal precedent shows that there are many factors that need to be considered for an international benchmarking analysis, and that considering only a subset of these factors—adjusting for PPP and population density—is insufficient and could result in an incorrect comparison.<sup>113</sup> Telstra and Ingenious further submit that the ACCC rejected a similar study presented in support of Telstra's 2005 ULLS Undertaking on the grounds that taking account of only PPP and line density was not sufficient.<sup>114</sup>

Telstra contends that the ACCC's criticism of Optus' 2004 MTAS Undertaking international benchmarking evidence as being limited to a subset of factors across three comparator countries, highlights the importance of adjusting for all relevant factors that may lead to cost differences between countries.<sup>115</sup> Telstra notes the ACCC's previously stated view that failing to account for the relevant factors may result in international benchmarking being more misleading than if no adjustments were made at all.<sup>116</sup>

In response, the ACCC notes that the results from international benchmarking analysis is not intended to replace its obligation to consider the legislative criteria in assessing the price terms of the 2008 Undertaking. The ACCC's assessment of the 2008 Undertaking with regard to each of the legislative criterion is detailed in chapter 8. The ACCC also observes that international benchmarking information constitutes additional information which can assist in its assessment of whether the price terms

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<sup>110</sup> Telstra, *Response to the ACCC's draft decision*, December 2008, p. 24.

<sup>111</sup> Telstra, *Response to the ACCC's draft decision*, December 2008, p. 22.

<sup>112</sup> Telstra, *Response to the ACCC's draft decision*, 2008, p. 24.

<sup>113</sup> Telstra, *Response to the ACCC's draft decision*, December 2008, p. 20.

<sup>114</sup> Telstra, *Response to the ACCC's draft decision*, December 2008, p. 23.

<sup>115</sup> Telstra, *Response to the ACCC's draft decision*, December 2008, p. 21.

<sup>116</sup> Telstra, *Response to the ACCC's draft decision*, December 2008, p. 21.

do in fact reflect the efficient cost of providing the ULLS and satisfy the legislative criteria.

Having regard to comments made in submissions that the international benchmarking analysis in the 2008 Draft Decision should be more comprehensive, and the Australian Competition Tribunal's view that a range of adjustments need to be made for international benchmarking analysis to provide useful information, the ACCC engaged Ovum to conduct analysis that takes the necessary adjustments into account, the results of which are detailed below.

Also, as stated in its 2008 Draft Decision, in past comparisons of ULLS prices, the ACCC has generally placed less weight on the use of international benchmarks, relative to other information before it, because of the difficulty of finding an appropriate comparator for the low population density area of Band 4. However, as the 2008 Undertaking is restricted to Band 2, the ACCC considers that benchmarking the Proposed Monthly Charge against other countries is a more useful input to this decision. For better like-for-like comparisons in its benchmarking analysis, Ovum has compared the countries based on a 'national average'.

### **7.4.3 Consideration of factors relevant in international benchmarking analysis**

This section sets out:

- Ovum's benchmarking methodology;
- the ACCC's consideration of specific factors to be taken into account in an international benchmarking exercise; and
- other methodological issues relevant in an international benchmarking exercise.

#### ***Ovum's international benchmarking methodology***

In Ovum's *Telstra ULLS Undertaking - ULLS International Benchmarking: An Advisory Note to the ACCC* ('Benchmarking Advisory Note'),<sup>117</sup> Ovum use two data points to represent the Australian ULLS pricing situation:

- 'current band weighted ULLS charge' estimated as \$15.75. This is an average of the ACCC's indicative prices weighted by the number of ULLS services in each of bands 1, 2 and 3; and
- 'proposed (band weighted) charge' estimated as \$28.93. This estimate is derived by substituting Telstra's Proposed Monthly Charge into the above weighted calculation.<sup>118</sup>

Ovum considers the six factors raised by Ingenious: regulatory framework, land use, copper prices, population density, loop lengths; and pricing structure.

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<sup>117</sup> Ovum, *ULLS benchmarking review*, 26 February 2009.

<sup>118</sup> Ovum, *ULLS benchmarking review*, 26 February 2009, p. 5.

When considering land use, Ovum notes that while it was not able to conduct a comparison between countries based on land use differences due to lack of available information, it noted that land use and population density are correlated and therefore some variability due to land use is likely to be captured in an analysis of population density.

In conclusion, Ovum acknowledges that Ingenious identify factors relevant to an international benchmarking exercise, and takes into account Ingenious' submission in its Benchmarking Advisory Note, as well as provides further comparisons based on actual available data.<sup>119</sup>

The ACCC notes Telstra's comments that it has been inconsistent in its application of conversion methods when deriving international benchmarking prices. Ovum have applied updated ULLS rates, including revising calculations in response to Telstra's submission.<sup>120</sup>

Further details on Ovum's methodology can be found in its Benchmarking Advisory Note.

### **1. Regulatory framework**

Ingenious submits that different costing methods used in recent years in different countries have had a material impact on the resulting prices in each country.<sup>121</sup> The ACCC agrees that the pricing methodology for regulated services is a specific country factor that could affect ULLS prices.

The ACCC notes that Ovum's benchmarking results which compares countries with different access pricing approaches to ULLS prices suggests that the proposed (band weighted) charge in Australia of \$28.93 is higher than all the comparator countries irrespective of which costing methodology has been used.<sup>122</sup> Table 1 sets out Ovum's ULLS comparison for countries with different costing approaches.

**Table 1: ULLS Comparison for Countries with LRIC-based Costing**

<b>Country</b>	<b>Monthly ULLS cost (PPP)</b>	<b>Cost standard</b>
Telstra (proposed)	28.93	LRIC
Australia (current)	15.75	LRIC
Germany	16.89	LRIC
Austria	15.20	LRIC
France	14.75	LRIC
Denmark	13.22	LRIC

<sup>119</sup> Ovum, *ULLS benchmarking review*, 26 February 2009, p. 12.

<sup>120</sup> Telstra, *Queries on ULLS Undertaking Draft Decision*, letter of 17 February 2009.

<sup>121</sup> Ingenious, *Report for Telstra*, December 2008, pp. 14-15.

<sup>122</sup> Ovum notes that Austria, Denmark, France and Germany use LRIC-based prices, while Sweden, Italy, Finland, Spain the UK and the Netherlands have adopted prices based on Fully Allocated Cost (FAC), Fully Distributed Cost (FDC) or Embedded Direct Cost (EDC). Ovum, *ULLS benchmarking review*, 26 February 2009, pp. 6-7.

Sweden	12.90	FDC
Italy	12.45	FDC
Finland	16.95	FAC
Spain	16.94	FAC
United Kingdom	15.23	FAC
Netherlands	12.87	EDC

Source: Ovum, *ULLS International Benchmarking Advisory Note*, 26 February 2009, pp. 6-7.

Notes: Fully Allocated Cost (FAC), Fully Distributed Cost (FDC) or Embedded Direct Cost (EDC).

Ovum contends that LRIC takes account of only a proportion of overhead expenses, while other methodologies cover all overheads; therefore, LRIC-based prices are generally expected to be lower than those calculated under other costing approaches.<sup>123</sup>

Ovum notes that comparisons to these countries are also relevant because regulation has been in place for more than 5 years and each is a developed country with market structures broadly similar to Australia with competitive pressure from DSL and cable providers.<sup>124</sup>

## 2. *Population density*

The ACCC observes that population density can affect ULLS charges as scarcely populated service areas generally attract longer loop lengths and lower duct density and thus higher costs per loop.

The ACCC notes Ovum's evidence that the proposed (band weighted) charge is an outlier when compared to ULLS charges in the comparator countries that also have a low national population density.<sup>125</sup>

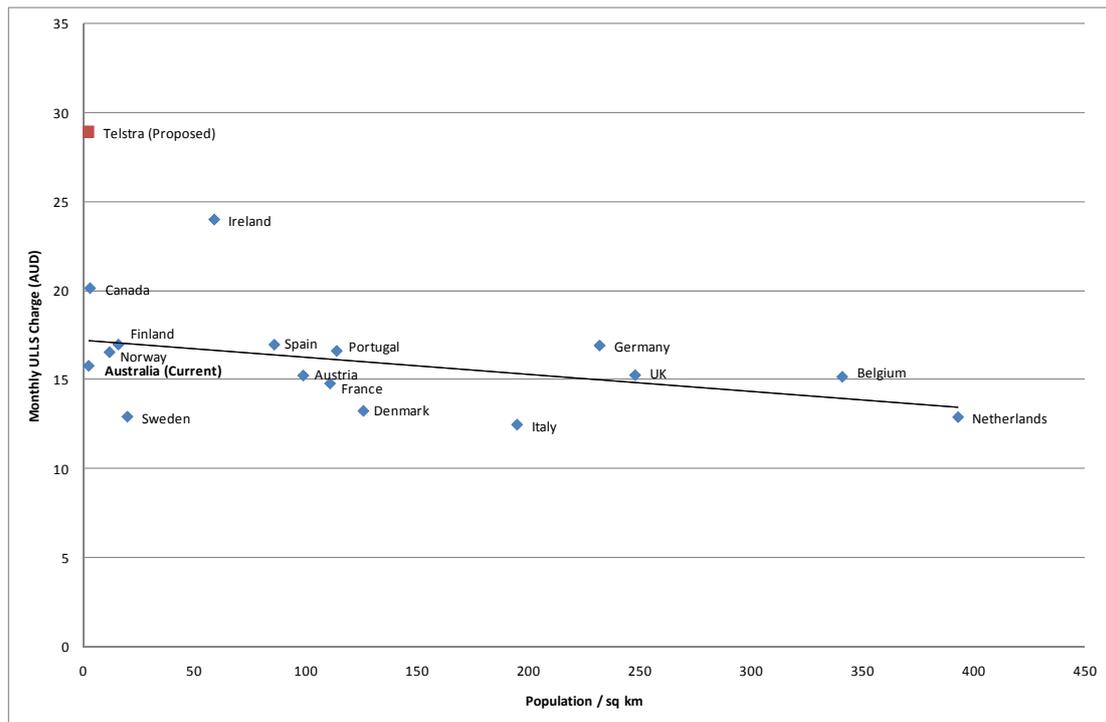
### **Figure 1: Monthly ULLS Charge compared with Population Density (June 2008)**

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<sup>123</sup> Ovum, *ULLS benchmarking review*, 26 February 2009, pp. 6-7.

<sup>124</sup> Ovum, *ULLS benchmarking review*, 26 February 2009, p. 6.

<sup>125</sup> Ovum, *ULLS benchmarking review*, 2009, p. 7.



Source: Ovum, *ULLS International Benchmarking Advisory Note*, 26 February 2009, p. 8.

These results suggest that, as the Proposed Monthly Charge is for Band 2, which has a substantially higher population density than the country as a whole, this would render the Australian case even less consistent with overseas benchmark data.

The ACCC also notes Optus' comments that an efficient ULLS rate for Band 2 in Australia should be lower than the sample countries nationally averaged ULLS rates.<sup>126</sup> Optus concludes that the benchmark rates provide even stronger evidence that Telstra's proposed charge is unusually high.<sup>127</sup>

Adam Internet et al also considers it unusual for Telstra's proposed ULLS charge to be considerably higher than the ULLS charges in the countries listed in ACCC's 2008 Draft Decision, given the significant population density differences between Band 2 in Australia and these countries. Accordingly, Adam Internet et al submit that less trenching and cabling would be required per service in Band 2, and that this should result in a lower cost per service in Band 2 compared to the sample countries.<sup>128</sup>

The ACCC notes Ingenious' comment that the type of housing being serviced also impacts upon cost, as it is generally more expensive to provide services to individual households compared to multi-dwelling buildings.<sup>129</sup> Ingenious contends that Australia has a very high proportion of detached housing and thus has a low level of

<sup>126</sup> Optus, *Response to the ACCC's Draft Decision*, December 2008, p. 38.

<sup>127</sup> Optus, *Response to the ACCC's Draft Decision*, December 2008, p. 39.

<sup>128</sup> Adam et al, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 3.

<sup>129</sup> Ingenious, *Report for Telstra*, December 2008, p. 29.

copper pairs per duct (and therefore lower duct density), resulting in a higher price per loop.<sup>130</sup> The ACCC considers that the prevalence of detached housing in Australia is not likely to be material as the notion of ‘housing mix’ is likely to be sufficiently captured by the ‘population per square kilometre’ metric of population density.

The ACCC also notes Ingenious' comments relating to further considerations when measuring a country's population density; in particular:

- that the ACCC's use of ‘population per square kilometre’ may be misleading, as the driver for the cost of ULLS is population density in served areas. Ingenious also submits that remote areas in several countries are served by aerial cable which is significantly cheaper than the ducted copper used in Band 2 areas of Australia;<sup>131</sup> and
- using the ‘population per kilometre of roadway other than highways’ measure gives a “starkly different picture” than simple national population density. The former measure will give an approximate guide to population density, as non-highway roads (and telecoms ducts) run mainly through populated areas.<sup>132</sup>

Ingenious, when making the above statements notes that there is no Band 2 data available for Australia.<sup>133</sup> Accordingly, the ACCC cannot assess the materiality of the suggested measurement changes and therefore places less weight on Ingenious' submission in relation to the effect of this factor on the ULLS price.

### **3. *Copper prices***

Ingenious submits that copper prices are a significant aspect of ULLS costs. Ingenious contends that copper prices have varied substantially over time and that these variations are material to the outcome of a benchmarking methodology.<sup>134</sup>

The ACCC appreciates that copper prices have varied between 2003 and 2007, but notes that in 2008 copper prices decreased significantly.<sup>135</sup> However, the ACCC agrees with Ovum that as copper is an internationally traded commodity<sup>136</sup> and it is a common factor between all countries, its price is not material to an international benchmarking analysis.

### **4. *Loop lengths***

The average local loop length in a country can affect the ULLS cost and thus the monthly ULLS charge.

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<sup>130</sup> Ingenious, *Report for Telstra*, December 2008, p. 27.

<sup>131</sup> Ingenious, *Report for Telstra*, December 2008, p. 26.

<sup>132</sup> Ingenious, *Report for Telstra*, December 2008, p. 26.

<sup>133</sup> Ingenious, *Report for Telstra*, December 2008, p. 32.

<sup>134</sup> Ingenious, *Report for Telstra*, December 2008, pp. 29-30.

<sup>135</sup> Ingenious, *Report for Telstra*, December 2008, p. 30.

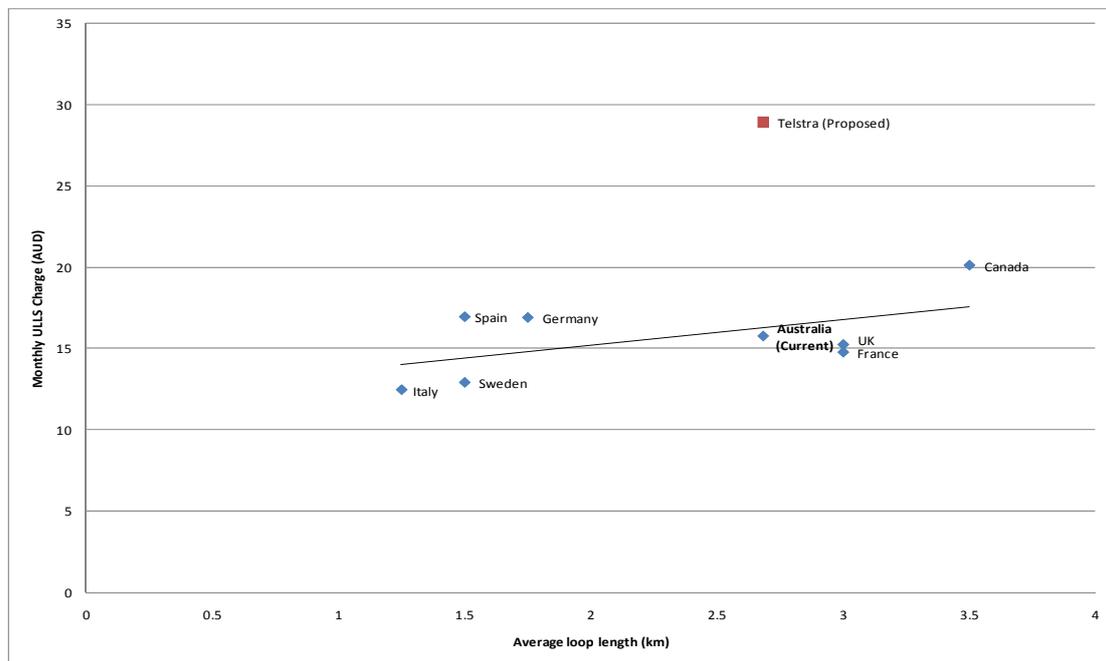
<sup>136</sup> Ovum, *ULLS benchmarking review*, 26 February 2009, pp. 8-9.

The ACCC notes Ingenious'<sup>137</sup> and Ovum's<sup>138</sup> views that the country's average local loop length affects ULLS costs.

Ingenious submits that the monthly ULLS cost will be in part a function of local loop length, and that Australia has an average loop length as long as any of the European countries it examined. Accordingly, Ingenious submits that per-loop costs will be higher in Australia compared to the European average.<sup>139</sup>

The ACCC in particular notes Ovum's views in relation to Canada having similar population density to Australia and longer average local loop length, but a ULLS monthly charge of approximately \$20.<sup>140</sup> The results of Ovum's analysis are provided in figure 2.

**Figure 2: Monthly ULLS Charge compared with Average Loop Length (June 2008)**



Source: Ovum, *ULLS International Benchmarking Advisory Note*, 26 February 2009, p. 9

Ovum concludes that Australia's current band weighted ULLS charge is consistent with its comparators once loop length has been taken into account, and that the proposed (band weighted) charge is well outside these bounds.<sup>141</sup> The ACCC considers that this evidence suggests that even when average local loop length is taken into account, there is a significant discrepancy between the Proposed Monthly Charge and the charge in comparator countries.

<sup>137</sup> Ingenious, *Report for Telstra*, December 2008, p. 30.

<sup>138</sup> Ovum, *ULLS benchmarking review*, 26 February 2009, p. 3.

<sup>139</sup> Ingenious, *Report for Telstra*, December 2008, pp. 30-31.

<sup>140</sup> Ovum, *ULLS benchmarking review*, 26 February 2009, p. 9.

<sup>141</sup> Ovum, *ULLS benchmarking review*, 26 February 2009, Figure 2.5, p. 9.

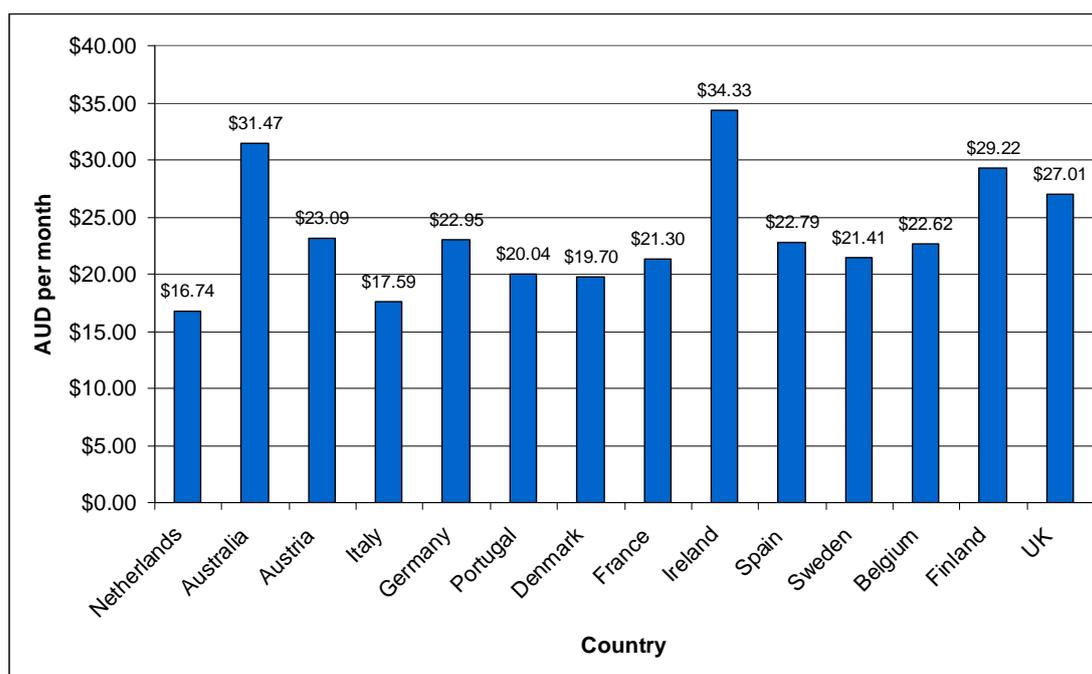
## 6. Pricing structure

While PPP captures some differences between countries, the pricing structure, the structure of the telecommunications industry and the level of competition prevailing in a country may affect ULLS benchmarking.

Ingenious submit that upfront connection charges are also relevant to benchmarking ULLS charges and suggests that a 'whole of life' (WOL) approach—where both an initial connection charge and ‘... (say) three years of rental charges’—should be taken to benchmarking a mix of ULLS charges.<sup>142</sup> It submits that the Australian connection charge is low relative to those of the European comparators; therefore, using the WOL approach would serve to significantly reduce the disparity between Telstra’s proposed charge and the charges in the sample countries.<sup>143</sup>

The ACCC notes, however, that Ingenious has not provided the results of a WOL analysis. To test Ingenious' claim, the ACCC carried out its own analysis using the method proposed by Ingenious, and found the WOL method increased the sample countries’ ULLS charges by a small degree. The analysis is illustrated in figure 3.

**Figure 3: Comparison of ‘whole of life’ ULL charges between Australia and the comparator set**



Source: Base data from Commission of the European Committees, Progress Report on the Single European Electronic Communications Market 2007, p. 106.

Notes: Whole of life = once-off connection charge + (monthly charge x 36)  
The WOL charge is based on Ingenious' comment that the WOL also included "...say three years of rental charges."

<sup>142</sup> Ingenious, *Report for Telstra*, December 2008, p. 32.

<sup>143</sup> Ingenious, *Report for Telstra*, December 2008, pp. 32-33.

The source data did not include ULL connection or monthly charge data for Norway, and thus the ACCC was unable to include this country in its analysis. The exchange rate used to convert all figures to EUR may have changed since the European report was published. The EUR to AUD exchange rate on 27 January 2009 was used in the ACCC's analysis. Australia's 'whole of life' charge is calculated using Telstra's proposed ULL charge of \$30 and a ULL connection charge of \$52.80 (Connection charge obtained from ACCC, *Unconditioned Local Loop Service Access Dispute between Telstra Corporation Ltd and Chime Communications Pty Ltd*, November 2005, Schedule 2.)

This analysis indicates that Telstra's Proposed Monthly Charge remains the highest of all the countries benchmarked, with the exception of Ireland. The ACCC therefore notes that using the WOL method proposed by Ingenious produces similar results as when monthly ULLS charges are directly compared.

The ACCC notes Ovum's views in relation to upfront charges having different purposes, and thus being subject to different variability, compared to monthly charges. The ACCC also notes Ovum's views concerning Telstra's inclusion of running costs rather than one-off charges in its TEA model.<sup>144</sup>

The ACCC notes Ovum uses two methods to compare general pricing structure and its effect on the ULLS charge:

- comparing the ULLS charge with the lowest monthly retail price charged by the incumbent and competitors, as the ULLS is used by a competitor of the incumbent to provide internet access (ADSL) and telephony; and
- comparing the monthly ULLS charge with general retail price level for internet access. This method relies on the calculation of a ULLS margin factor (generally less than 1) for the comparison. Ovum contends that if the margin factor is low, then there is scope for competitors to provide their own retail services, and if it is high then there is little room for competition.<sup>145</sup>

Under the first method, the Proposed Monthly Charge would push the 'Australia (current)' data point upwards and to the right in Figure 4. The Proposed Monthly Charge is greater than any of the ULLS charges shown.<sup>146</sup>

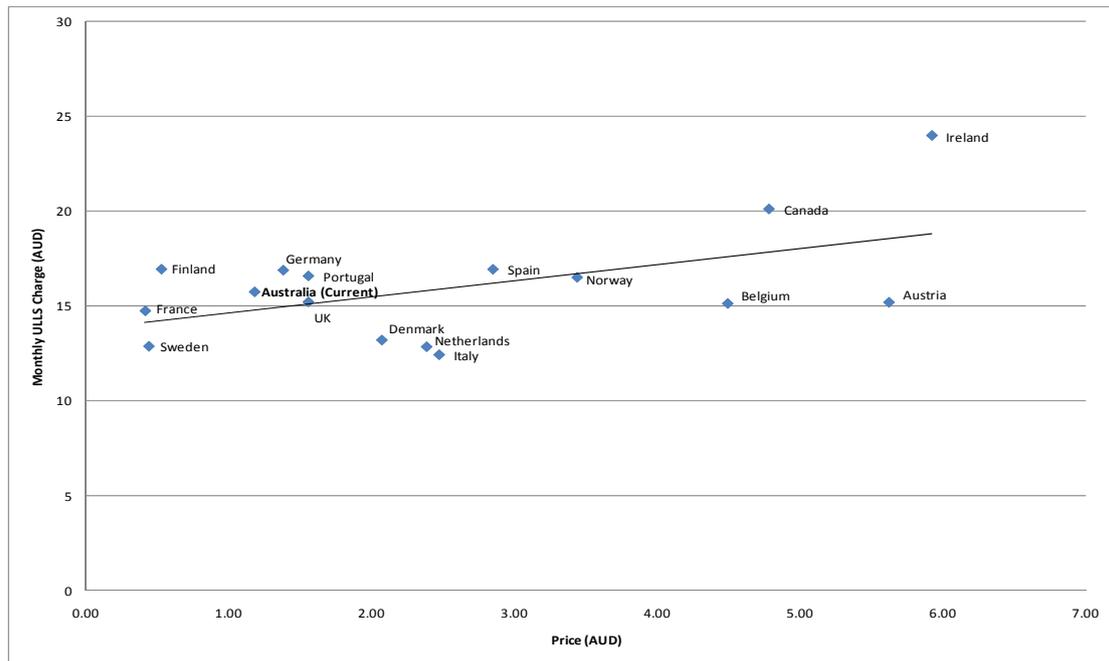
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<sup>144</sup> Ovum, *ULLS benchmarking review*, 26 February 2009, p. 10.

<sup>145</sup> Ovum, *ULLS benchmarking review*, 26 February 2009, pp. 11-12.

<sup>146</sup> Ovum, *ULLS benchmarking review*, 26 February 2009, Figure 2.6, pp. 10-11.

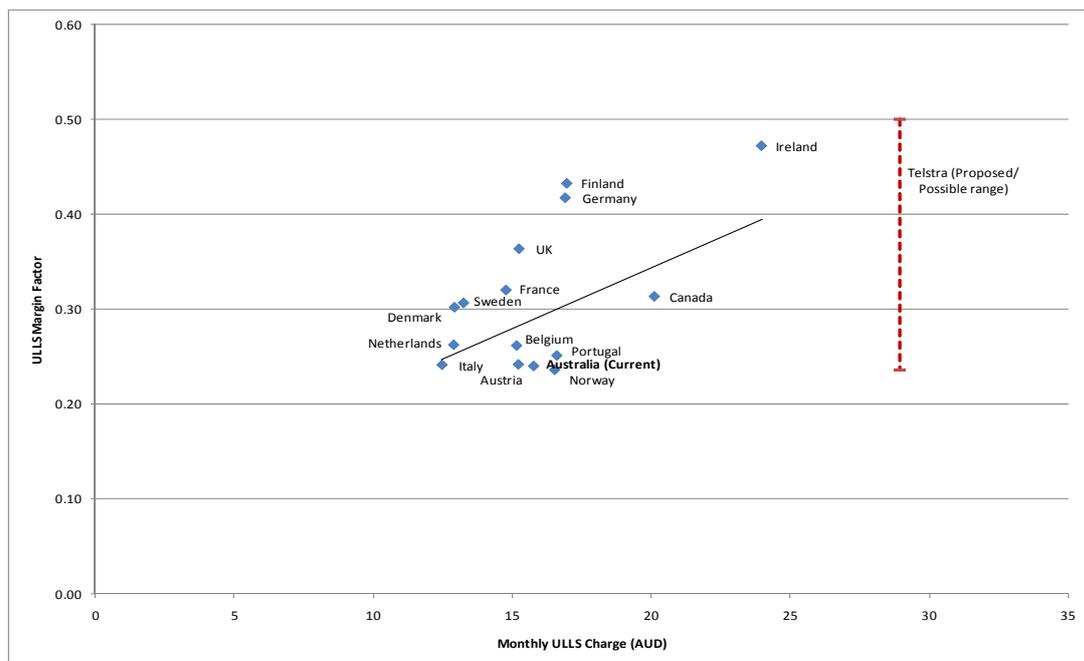
**Figure 4: Monthly ULLS Charge compared with Lowest Monthly Price per Mb/s (June 2007)**



Source: Ovum, *ULLS International Benchmarking Advisory Note*, 26 February 2009, p. 11

Under the second method, as illustrated in Figure 5, the Proposed Monthly Charge would put upward pressure on the retail prices offered by alternative operators in the Australian market.

**Figure 5: ULLS Margin Factor compared with Monthly ULLS Charge (October 2007)**



Source: Ovum, *ULLS International Benchmarking Advisory Note*, 26 February 2009, p. 12.

The ACCC considers that Ovum's results suggest that, in a comparison of margin factors, both the current Band 2 ULLS monthly charge and Ovum's current band weighted charge are consistent with international experience. An increase in ULLS charges to Telstra's Proposed Monthly Charge would raise the margin factor substantially (assuming retail prices remained unchanged), suggesting that Telstra's Proposed Monthly Charge would represent a significant divergence from this overseas benchmark data.

### ***Other methodological issues for consideration in international benchmarking***

#### *Comparator set*

The ACCC notes Ingenious' comment that the comparator set used is critical, and that the ACCC should make clear why a particular subset of countries is used as a comparator, something that it has not done previously.<sup>147</sup>

Optus submits that the countries included in the analysis are comparable to Australia because they are similar with regard to the state of market, socio-economic factors and regulatory environment. Optus provide further discussion on each of these issues against each comparator county.<sup>148</sup>

The ACCC notes that the comparator set it used in the 2008 Draft Decision was based on data availability. The ACCC notes that Ovum, for its benchmarking exercise in this Final Decision, primarily based its selection of comparator countries on those countries used by the ACCC in its Draft Decision, for consistency reasons. In addition to those counties selected in the benchmarking exercise in the Draft Decision, Ovum have also included Canada due to similarities with Australia in terms of local loop length and population density. The ACCC considers this sufficient reasoning for using the comparator set especially as comparable country information is not easily available.

#### *Timing and exchange rate issues*

The ACCC notes Ingenious' comments about variability in the PPP and exchange rates and issues with converting currency. For instance, Ingenious submits that some European rates are promulgated in the local currency requiring a two-step conversion to Australian dollars. Ingenious notes that the rates used in the conversion have not been specified.<sup>149</sup> Ingenious also state that PPP rates are inherently less volatile than standard exchange rates, but may still move materially over time.<sup>150</sup>

The ACCC notes that the rates used in the conversion were provided to Telstra on 20 March 2009, and are available on the ACCC website. These rates were also used by Ovum. The ACCC agrees that it is important to take variability in the PPP and exchange rate into account in a conversion exercise and that any conversion exercise

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<sup>147</sup> Ingenious, *Report for Telstra*, December 2008, p. 6.

<sup>148</sup> Optus, *Response to the ACCC's Draft Decision, Appendix B*, December 2008, pp. 2-14.

<sup>149</sup> Ingenious, *Report for Telstra*, December 2008, p. 10.

<sup>150</sup> Ingenious, *Report for Telstra*, December 2008, pp. 10-13.

is not likely to be precise. The ACCC notes that this is precisely the reason for the ACCC viewing the results of international benchmarking as only one factor in determining whether the Proposed Monthly Charge reflects the efficient costs of providing the ULLS.

#### **7.4.4 Conclusion**

The ACCC notes Telstra's and Ingenious' submissions regarding the need to take account of similarities and differences between countries in a benchmarking exercise. The ACCC notes that consideration of such factors is relevant to an international benchmarking exercise that produces useful information. The ACCC also considers that of importance is whether a number of these factors can be quantifiable in a robust manner so that useful comparisons can be made. In this regard, the ACCC observes that Ingenious, on a number of occasions, made assertions about the relevance of particular factors without providing any evidence to indicate the materiality of these factors in a benchmarking exercise.<sup>151</sup>

The ACCC notes that Telstra's submission of 8 April 2009 states that there are several errors in Ovum's international benchmarking - that Ovum has understated the current weighted average monthly ULLS charges over all bands; overstating the proposed charges applied in the benchmarking and did not take account of each country's once-off ULLS connection charges. It considers that, once these errors are corrected for, Ovum's benchmarking results reveal that the proposed ULLS price is comparable to charges overseas.<sup>152</sup> Telstra also submits that Ovum has factored in only a subset of the relevant cost drivers.<sup>153</sup>

The ACCC does not agree that Ovum has underestimated the current weighted average monthly ULLS charge. In fact, the ACCC considers that Ovum's estimate is conservative as the weight it uses is based on the number of ULLS lines, when the number of SIOs would have been a better approximation. Applying the number of SIOs would have increased the current and proposed weighted average ULLS charge. The ACCC also notes that once-off connection charges were considered in the context of the 'whole-of-life' analysis which was proposed by Ingenious. The ACCC also considers that where Ovum was not able to take account of certain factors, it provided valid reasoning, for the absence of such factors in the benchmarking exercise. The ACCC reiterates that it considers the results of Ovum's benchmarking exercise as providing a preliminary indication of whether the Proposed Monthly Charge requires further scrutiny.

In summary, the ACCC considers that after taking into account submissions and Ovum's international comparisons, the ACCC considers results from comparing the ULLS price in Australia with international countries as a useful source of information in assessing the 2008 Undertaking. The ACCC considers that results from the

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<sup>151</sup> For example: Negotiation element of regulation - Ingenious, *Report for Telstra*, December 2008, p.14; and Pricing structure: Ingenious, *Report for Telstra*, December 2008, pp.32-33.

<sup>152</sup> Telstra, Telstra's ordinary Access Undertaking for the Unconditioned Local Loop Service-Response to Ovum Advisory Notes, 8 April 2009, p.8, paragraph 37.

<sup>153</sup> Telstra, Telstra's ordinary Access Undertaking for the Unconditioned Local Loop Service-Response to Ovum Advisory Notes, 8 April 2009, p.8, paragraph 38.

international benchmarking exercise - where the \$30 charge is significantly higher compared to the price of similar unbundled local loop services in other countries - provides support for its conclusion that the Proposed Monthly Charge of \$30 does not reflect the efficient costs of supplying the ULLS.

## **7.5 Trends in ULLS prices and uptake**

This section provides background on the trends in Telstra's proposed ULLS monthly charges and the ULLS indicative prices overtime; and how the Proposed Monthly Charge is positioned within this trend. The growth in ULLS uptake is also discussed.

In response to the 2008 Draft Decision, Optus submits that trends in the indicative ULLS price may be regarded as a key factor influencing access seeker expectations of the ULLS price.<sup>154</sup> As part of its submission, Optus submitted data and information on trends in ULLS pricing. Optus also submits that Telstra's proposed substantial and rapid increase in the ULLS charge would deter investment in the ULLS-based infrastructure. Optus considers a stable ULLS price is conducive to such investments.<sup>155</sup>

Following the Draft Decision, the ACCC has further analysed the trend in Telstra's proposed undertaking prices for the ULLS, the ULLS indicative prices and ULLS uptake.<sup>156</sup>

Table 2 sets out Band 2 ULLS indicative prices, Telstra's proposed Band 2 ULLS undertaking prices over time, and the growth in Band 2 and all band ULLS uptake overtime. Figure 6 graphically depicts this information. The ACCC considers that as the majority of ULLS uptake is in Band 2 ESAs, where data is not available in relation to uptake in this band, ULLS uptake data for all bands serves as a reasonable approximation.

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<sup>154</sup> Optus, *Response to the ACCC's Draft Decision*, December 2008, p. 49.

<sup>155</sup> Optus, *Response to the ACCC's Draft Decision*, December 2008, p. 43.

<sup>156</sup> ACCC, *Pricing of Unconditioned Local Loop Services*, March 2002; ACCC, *Unconditioned Local Loop Services Final Pricing Principles*, November 2007; ACCC, *Unconditioned Local Loop Service Pricing Principles and Indicative Prices*, June 2008.

**Table 2 Band 2 ULLS prices, and ULLS SIO uptake**

	Band 2				All Bands		
	Telstra proposed prices	ULLS indicative prices	Final arbitrated prices	Annual ULLS SIO growth	Band 2 SIO growth as a % of all bands SIO Growth	Annual ULLS SIO Growth <sup>1</sup>	Annual TLS Retail DSL Growth <sup>2</sup>
Dec-01	\$63	\$35					
Dec-02	\$63	\$35					
Dec-03 <sup>3</sup>	\$22 <sup>4</sup>	\$22 <sup>5</sup>					
Dec-04 <sup>6</sup>	\$22	\$22 <sup>7</sup>					
Dec-05 <sup>8</sup>	\$30 <sup>9</sup>	\$12.30	\$12.30			209.70%	107.61%
Dec-06	\$30 <sup>10</sup>	\$13.70	\$13.70			98.78%	46.90%
Dec-07	\$30 <sup>11</sup>	\$14.30	\$14.30			134.48%	13.93%
Dec-08 <sup>12</sup>	\$30	\$16		61.54%	95.83%	59.76%	0.03%
average annual growth				61.54%		125.68%	42.12%

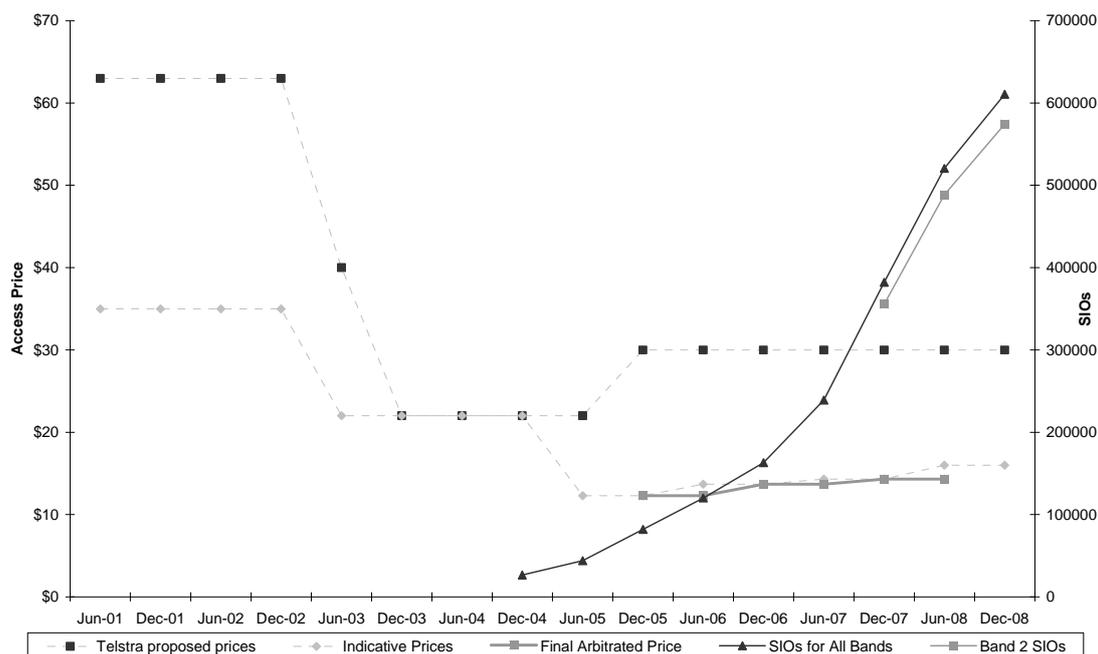
Sources:

ACCC *analysis of Telstra's Customer Access Network Record Keeping and Reporting Rules (2008)*  
ACCC, *Final Pricing Principals for the Unconditioned Local Loop Service Amendment Determination 2008 (No.1)*  
ACCC, *Pricing of unconditioned local loop services final report-2002*  
ACCC, *Price model terms and conditions Final Determination-October 2003*  
UBS, *Australian Telecommunications Tracker*  
Telstra, *Annual Report, 2006 to 2008*

Notes:

- <sup>1</sup> Telstra CANRKR -December 2008
- <sup>2</sup> Telstra CANRKR – December 2008
- <sup>3</sup> November 2003, Telstra withdrew its January 2003 Undertaking proposing a Band 2 ULLS price of \$40. Telstra submitted a new Undertaking with a proposed Band 2 price of \$22.
- <sup>4</sup> The \$22 price can be considered Telstra's proposed average Band 2 ULLS price as the November 2003 Undertaking specified an adjustment mechanism for Telstra's proposed price. For ULLS demands above a certain threshold, increasing amounts of discount would be applied to the \$22 price as demands increase. For ULLS demands below a certain threshold, increasing amounts of premium would be applied to the \$22 price as demands decrease.
- <sup>5</sup> The \$22 price is inclusive of ULLS specific charges of \$10
- <sup>6</sup> December 2004, Telstra withdrew its November 2003 Undertaking and replaced it with a new Undertaking with a Band 2 access price of \$22-the withdrawn Undertaking is not included in the calculation of the Telstra proposed price's trend line
- <sup>7</sup> The \$22 price is inclusive of ULLS specific charges of \$10
- <sup>8</sup> From Dec-05 onwards, the ULLS indicative price excludes ULLS-specific charges. Earlier indicative prices include ULLS specific charges
- <sup>9</sup> Average proposed ULLS access price for all bands
- <sup>10</sup> Average proposed ULLS access price for all bands
- <sup>11</sup> Average proposed ULLS access price for all bands
- <sup>12</sup> March 2008, Telstra withdrew its December 2007 Undertaking and replaced it with a new Undertaking with a Band 2 access price of \$30- the withdrawn Undertaking is not included in the calculation of the Telstra proposed price's trend line

**Figure 6 ULLS price trends and ULLS SIO uptake**



**Sources:**

*ACCC analysis of Telstra’s Customer Access Network Record Keeping and Reporting Rules (2008)*

A number of observations can be made from Table 2 and Figure 6:

- Between 2001 and 2008, the ULLS indicative price displays an overall downward trend. however the following observations need to be considered:
  - during 2002-03, the ACCC’s indicative ULLS price falls from \$35 to \$22. The \$22 price includes a ULLS-specific charge of \$10. During this period, there was a switch to the PIE II model that Telstra submitted as part of its ULLS Undertaking in 2003-04. The ACCC further notes that the model which the \$35 charge was based on – the NERA model – was deemed inadequate by the ACCC<sup>157</sup> and the Australian Competition Tribunal.<sup>158</sup>
  - during 2004-2005, the indicative price fell from \$22.00-\$12.30 due to a re-evaluation of how ULLS specific costs were allocated. The ACCC was particularly conservative before this time in relation to specific costs allocation and it allowed for \$10 of ULLS specific costs in the \$22 indicative price.<sup>159</sup> However in the December 2005 Final Decision, a new method, whereby ULLS-specific costs were allocated to a

<sup>157</sup> Australian Competition Tribunal, *Re Telstra Corporations Ltd* (No3)[2007] ACompT 3, 17 May 2007, paragraph 376

<sup>158</sup> *Ibid*, paragraph 377.

<sup>159</sup> ACCC, *Final Determination for model price terms and conditions of the PSTN, ULLS and LCS services*, October 2003, p. 84.

broader customer base, was adopted because it was consistent with the regulatory criteria.<sup>160</sup> The ACCC also notes that annual ULLS and LSS specific costs constituted less than 0.05 per cent of Telstra's annual revenue.<sup>161</sup> Accordingly, the ULLS-specific charge was removed from the ACCC's indicative Band 2 ULLS price. The ACCC notes that this decision has been vindicated by the Australian Competition Tribunal on two occasions;<sup>162</sup>

- since 2005-06 the indicative price exhibits an upward trend. The \$3.70 increase to the indicative price from 2005 to 2008 is due to inflation and rising input costs.
- The ACCC notes the fall overtime in the ULLS indicative price (despite small increases from June 2006 onwards) correlates with growing ULLS uptake in all bands and slowing growth in Telstra retail DSL lines;
- As the ACCC's indicative price has steadied, ULLS uptake for all bands has seen positive growth since June 2005 with an average annual growth of 125.68 per cent. At the same time, Telstra's retail DSL lines saw slowing growth from 2005 to 2008 (annual growth of 107.61 per cent, 46.90 per cent, 13.93 per cent and 0.03 per cent for each period between 2005 and 2008)
- While ULLS uptake in all bands has increased by, on average, 125.68 per cent Telstra retail DSL increased by 42.12 per cent annually from December 2005;
- Telstra's proposed Band 2 monthly charge of \$22 during 2004 to 2005 is significantly lower than its proposed price of \$30 in its 2008 Undertaking; and
- Telstra submits the proposed Band 2 ULLS monthly charge can be increased to \$46.54 after the term of the 2008 Undertaking has expired. This is higher than previous proposed undertaking prices of \$40 in 2003 and \$30 during 2005 to 2007.

The ACCC notes and agrees with Optus' view that a stable ULLS price is conducive to investment in the ULLS. The ULLS price is an important factor in encouraging new investment in, and further augmentation to the ULLS-based network, as access seekers incur this cost when delivering broadband/DSL and voice services to end-users, using their own infrastructure. In particular, any further increases as suggested by Telstra to an eventual ULLS price level of \$46.54 is likely to have a significant detrimental effect on the uptake of ULLS.

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<sup>160</sup> ACCC, *Assessment of Telstra's ULLS and LSS month charge undertakings-Final Decision*, December 2005, p. 28.

<sup>161</sup> ACCC, *Assessment of Telstra's ULLS and LSS month charge undertakings-Final Decision*, December 2005, p. 29.

<sup>162</sup> Australian Competition Tribunal, *Re Telstra Corporations Ltd* (No3) [2007] ACompT 3, 17 May 2007, paragraph 396-404; Australian Competition Tribunal, *Re Telstra Corporation Limited* (ACN 051 775 556) [2006] ACompT 4, 2 June 2006, paragraph 150.

## 7.6 Results from the Analysys cost model

The ACCC commissioned Analysys Mason Ltd to produce a cost model of the Australian fixed network (“Analysys cost model”). The Analysys cost model uses a bottom-up network building approach, preserving only the RAU locations from the current network, to estimate prices for a range of services, including ULLS, across all bands.

The Analysys model was released for consultation in December 2008 for 14 weeks. The consultation process has closed and the model is being finalised.

The ACCC received a number of submissions in relation to the results on the Analysys cost model as part of the 2008 Undertaking assessment process.

Adam et al submit that the Analysys model released by the ACCC is likely to produce unbiased results as it is truly independent.<sup>163</sup> They acknowledge that the Analysys model is in the early stages of public scrutiny, but note that the Analysys cost model estimates a price less than half that proposed by Telstra in the 2008 Undertaking, which makes the unreasonableness of Telstra’s proposed \$30 price clear.<sup>164</sup>

Similarly, Optus argues that the Analysys cost model’s Band 2 ULLS estimate of \$14.74 for 2008 casts doubt over the credibility of the estimates produced by the TEA model.<sup>165</sup> Optus submits that the Analysys cost model provides a relevant benchmark for the TEA model.<sup>166</sup>

Adam et al submit that the Analysys cost model provides firm support for the proposition that the TEA model costs assumptions would lead to an over-estimation of the costs of providing the ULLS. They observe that, though the Analysys cost model is still in its early stages of public discussion and scrutiny, the disparity between the 2008 ULLS Band 2 cost of \$14.74 estimated by version 1 of the Analysys cost model, and Telstra’s \$30 proposal is so vast that the unreasonableness of Telstra’s undertaking is abundantly clear. Further, the Proposed Monthly Charge is more than twice the Band 2 charge estimated by the Analysys cost model for Australian fixed network services.<sup>167</sup>

Telstra also submit in its *Measure of TEA Model Efficiency: ULLS Band 2 - version 2* provides a comparison of some of the quantities of network equipment between TEA model and the Analysys cost model.<sup>168</sup>

In response to these comments, the ACCC notes that the Analysys cost model is not intended to be a benchmark for the TEA model. The ACCC considers that the

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<sup>163</sup> Adam et al, *Response to the ACCC’s Draft Decision*, 23 December 2008, p. 6.

<sup>164</sup> Adam et al, *Response to the ACCC’s Draft Decision*, 23 December 2008, pp. 6 – 7.

<sup>165</sup> Optus, *Response to the ACCC’s Draft Decision*, 23 December 2008, pp. 41 – 42.

<sup>166</sup> Optus, *Response to the ACCC’s Draft Decision*, 23 December 2008, p. 41.

<sup>167</sup> Adam et al, *Response to the ACCC’s Draft Decision*, 23 December 2008, pp. 6-7.

<sup>168</sup> Telstra, *Measure of TEA Model Efficiency: ULLS Band 2 - version 2*, 9 March 2009, p. 6.

Analysys cost model provides estimates for regulated fixed network services under particular modelling assumptions. The ACCC considers that the Analysys cost model estimates are efficient and forward-looking.

The ACCC regards the Analysys cost model as demonstrating one way that efficient and forward looking estimates based on TSLRIC+ can be derived. These monthly charge estimates for the ULLS in Bands 1 and 2 are provided in the table below. As noted previously, the ACCC considers that there are different ways of implementing TSLRIC+ but not all of these will necessarily satisfy the legislative criteria. Further, other pricing approaches used to estimate the cost of providing the ULLS, may satisfy the legislative criteria.

**Table 3      Analysys cost model monthly charge estimates**

	<b>Version 1.2 of the Analysys cost model: ULLS monthly charge estimates <sup>a</sup></b>					
	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	<i>2011</i>	<i>2012</i>
<b><i>Band 1</i></b>	2.60	2.60	2.61	2.62	2.63	2.63
<b><i>Band 2</i></b>	14.53	14.61	14.67	14.73	14.80	14.87

Source: ACCC, *Analysys cost model for Australian fixed network services*, December 2008, p. 48.

Notes: a. ULLS monthly charge estimates do not include the ULLS specific charge. Applies a pre-tax WACC: 8.88 per cent, post-tax WACC: 7.88 per cent

The ACCC considers that the results from the Analysys cost model can be used to provide a preliminary check on other model estimates. Any large disparities between the Analysys cost model estimates and other model estimates may suggest further investigation into the other models underlying assumptions and parameter values is required. With this in the mind, the ACCC notes the significant difference between the Analysys cost model version 1.2 estimate of \$17-\$18 (includes \$2.45 for the ULLS specific charge)<sup>169</sup> and the Proposed Monthly Charge of \$30.

The ACCC notes whilst the Analysys cost model consultation process has closed, the model may undergo modifications before being finalised. Furthermore, as was indicated in the ACCC's discussion paper on the model, the default values with which the Analysys model is populated are default values selected by Analysys, and do not necessarily reflect the ACCC's preferred values.<sup>170</sup> As a result, the ACCC considers that, whilst the Analysys model is a relevant source of information, less weight can be placed on estimates from the Analysys model until its finalisation, than on other sources of information for the purposes of assessing whether the price term in the 2008 Undertaking reflects the efficient cost of supplying the ULLS.

<sup>169</sup> Note that the inclusion of \$2.45 does not indicate that the ACCC accepts that \$2.45 is a reasonable price for the ULLS specific charge, and its inclusion here is for illustrative purposes only.

<sup>170</sup> ACCC, *Analysys Cost Model Discussion Paper*, December 2008, p. 8.

## 8 Does the 2008 Undertaking satisfy the legislative criteria?

Paragraph 152BV(2)(d) of the TPA provides that the ACCC must not accept an undertaking unless the ACCC is satisfied that the terms and conditions specified in the undertaking are reasonable.

When assessing the 2008 Undertaking, the ACCC must have regard to both the object of the Part XIC telecommunications access regime as set out in section 152AB of the TPA and, more specifically, in determining whether the particular terms and conditions of the 2008 Undertaking are reasonable, it must have regard to the range of matters set out in subsection 152AH(1) of the TPA.

Subsection 152AB(1) of the TPA stipulates the object of the Part XIC telecommunications access regime is to promote the LTIE. In determining whether a particular thing promotes the LTIE, the ACCC must have regard to the extent to which it is likely to result in the achievement of the following objectives:

- promoting competition in markets for telecommunications services;
- achieving any-to-any connectivity in relation to carriage services that involve communication between end-users; and
- encouraging the economically efficient use of, and the economically efficient investment in, the infrastructure by which telecommunications services are supplied, or are likely to become capable of being supplied.<sup>171</sup>

In addition, subsection 152AH(1) of the TPA requires the ACCC to assess whether the particular terms and conditions of the 2008 Undertaking are reasonable having regard to the following criteria:

- whether the terms and conditions promote the LTIE of carriage services or of services supplied by means of carriage services;
- the legitimate business interests of Telstra, and its investment in facilities used to supply the declared service;
- the interests of persons who have rights to use the declared service;
- the direct costs of providing access to the declared service;
- the operational and technical requirements necessary for the safe and reliable operation of a carriage service, a telecommunications network or facility; and
- the economically efficient operation of a carriage service, a telecommunications network or a facility.

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<sup>171</sup> *Trade Practices Act 1974* (Cth), subsection 152AB(2).

In addition, the ACCC may consider any other relevant matter.<sup>172</sup>

## **8.1 Promoting competition in markets for telecommunications services**

In determining the extent to which the 2008 Undertaking will promote competition in markets for telecommunications services, the TPA obliges the ACCC to have regard to the extent to which the 2008 Undertaking will remove obstacles to end-users of telecommunications services.<sup>173</sup> However, the ACCC is not limited to this and may consider other matters in determining whether the 2008 Undertaking will achieve the promotion of competition in markets for telecommunications services.<sup>174</sup>

In its Draft Decision, the ACCC considered that Telstra's implementation of TSLRIC+ was not able to support a conclusion that the Proposed Monthly Charge reflected the efficient and forward-looking costs of providing the ULLS. The ACCC also noted that the 2008 Undertaking does not provide certainty to access seekers, potentially affecting their ability to compete in telecommunications markets. In particular, the ACCC noted that the 2008 Undertaking does not include all the relevant costs in the monthly charge. Accordingly, access seekers will still need to negotiate with Telstra on other aspects of the monthly charge, which creates uncertainty in the market, thereby potentially affecting the ability of access seekers to compete and reducing the incentives for entry.<sup>175</sup>

### **8.1.1 Submissions**

Telstra submits that the price of the ULLS can be a factor that determines whether some end users face obstacles to gaining access to listed services. In particular, Telstra submits that the ACCC is interpreting this criterion as requiring below TSLRIC+ or below cost pricing of the ULLS. In particular, Telstra submits that:

...there can be no justification for relying on the promotion of competition criterion to force prices (or obstacles to end-users more generally) below the level that market conditions would otherwise provide for were the supply of services competitive.<sup>176</sup>

Further, Telstra states:

...Therefore, if ULLS prices are currently below the TSLRIC+ of an efficient new entrant, which is currently the case, then increasing prices closer to cost will promote competition.<sup>177</sup>

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<sup>172</sup> Section 152AH does not use the expression “any other relevant matter”. Rather, subsection 152AH(2) states that the matters listed in subsection 152AH(1) do not limit the matters to which the ACCC may have regard. Thus, the ACCC may consider any other relevant matter.

<sup>173</sup> *Trade Practices Act 1974* (Cth), subsection 152AB(4).

<sup>174</sup> *Trade Practices Act 1974* (Cth), subsection 152AB(5).

<sup>175</sup> ACCC, *2008 ACCC Draft Decision*, November 2008, pp. 48-49.

<sup>176</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 31.

<sup>177</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 32.

Telstra considers that pricing below the level of a new entrant's cost will, in the long run, prevent any entry in the supply of ULLS because a strict prerequisite for entry is the expectation of financial capital maintenance.<sup>178</sup> Telstra also submits that pricing below an efficient entrant's cost will reduce the level of entry and competition by substitutable networks that are a primary source of competition for the incumbent's fixed line CAN based services in other parts of the world (e.g. cable networks in the United States).<sup>179</sup> Telstra submits that preventing investment in substitutable networks creates obstacles to end-users gaining access to a range of choices that they would otherwise have, resulting from the availability of alternative networks and services delivered on those alternative networks. Telstra provides a description of the range of alternative access-based infrastructure networks in Band 2.<sup>180</sup>

In contrast, Optus submits that reasonable pricing of the ULLS in recent years has improved competition. In particular, Optus submits that there has been significant roll-out of DSLAM-based networks to date. It considers that the proposed increase in the ULLS charge risks reversing these gains.<sup>181</sup>

Optus also considers that the proposed increase in the ULLS charge to \$30 would not result in lower prices for consumers and would not facilitate the displacement of inefficient suppliers by efficient suppliers. Rather, access seekers would be forced to pay the \$30 access charge to Telstra and this charge would largely be passed on to end-users. Optus considers that Telstra's retail unit, which does not face the \$30 access charge, would be able to displace access seekers from the market by charging lower prices than Optus is able to charge.<sup>182</sup>

Optus observes that Telstra has made significant margins on its fixed line service. It indicates that this is in contrast with the tighter resale margins available to access seekers which have been progressively squeezed by increases in resale wholesale prices with no corresponding change in retail prices.<sup>183</sup>

Telstra argues that access seekers currently in the market will continue to earn substantial margins at a Band 2 ULLS price of \$30 and will not, therefore, exit the market. It provides financial analysis of Optus and Adam Internet et al's data showing that at a \$30 ULLS price in Band 2, such access seekers will earn EBIT margins of 40.62 per cent and 46.75 per cent, respectively, from services supplied using the ULLS. According to Telstra's analysis, further entry will be profitable.<sup>184</sup>

In response to Telstra's financial analysis, Optus submits that Telstra's projections are based on outdated financial reports and that the capital expenditure costs, ARPU and

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<sup>178</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 31.

<sup>179</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 31.

<sup>180</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 31.

<sup>181</sup> Optus, *Response to the ACCC's Draft Decision*, 8 December 2008, p. 51.

<sup>182</sup> Optus, *Response to the ACCC's Draft Decision*, 8 December 2008, p. 57.

<sup>183</sup> Optus, *Response to the ACCC's Draft Decision*, 8 December 2008, p. 53.

<sup>184</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 32.

monthly costs included in Telstra's submission are from a June 2006 presentation. Optus submits that the presentation outlined gross margin improvements unrelated to the resale of ULLS. Optus considers that Telstra has provided an overestimated EBITDA that does not account for all of Optus' costs associated with utilising the ULLS.<sup>185</sup>

Adam Internet et al also respond to Telstra's financial analysis, submitting that Telstra's projection of its EBIT includes data that is unrelated to the provision of ULLS, such as LSS based services.<sup>186</sup> Adam Internet et al further submits that Telstra has assumed Adam Internet et al's entire customer base uses bundled telephony and broadband products, and have simply aggregated the ARPU for both products across all services to form a revenue figure. Adam Internet et al consider that by correcting these two errors alone, it's weighted gross margin on ULL based services is about half of Telstra's weighted EBITDA estimates.<sup>187</sup>

In response to Optus and Adam Internet et al's submissions on profitability analysis, Telstra submits that Optus and Adam Internet et al have not supported their arguments with evidence or provided an alternative way to calculate margins. Further, to the extent that information has been provided, Telstra has not had the opportunity to analyse this information given the confidentiality claims placed over it.<sup>188</sup>

Telstra considers that the TEA model, as constructed and populated with Telstra's inputs, produces costs equivalent to those an efficient new entrant would face.<sup>189</sup> It considers that the TEA model does calculate the efficient forward-looking costs of supplying the ULLS, and therefore considers that the ACCC is incorrect in concluding that Telstra's Undertaking does not promote competition.<sup>190</sup>

Telstra also appears to indicate that the 2008 Undertaking encompasses all elements of the monthly charge. In particular, Telstra states that:

Telstra's Undertaking encompasses all elements of the ULLS monthly charge. The costs associated with the monthly charge in Telstra's Undertaking are ULLS network costs and ULLS specific costs. Most attention to Telstra's Undertaking has been given to Telstra's estimate of ULLS network costs, since this, on its own, supports a \$30 ULLS price. Given this, and for the purpose of limiting the scope of debate around Telstra's Undertaking, Telstra is willing to accept the ACCC's \$2.45 cost estimate for ULLS specific costs set out in its 2008 ULLS pricing principles.<sup>191</sup>

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<sup>185</sup> Optus, *Optus Supplementary Submission to the Telstra ULLS Undertaking (2008-2010): A response to the ACCC's request for further information on Optus' ULLS margins*, February 2009, p. 2.

<sup>186</sup> iiNet, *Further submission from iiNet*, 2 February 2009.

<sup>187</sup> iiNet, *Further submission from iiNet*, 2 February 2009.

<sup>188</sup> Telstra, *Response to Optus and iiNet Submissions on Profitability Analysis*, 11 March 2009, p. 1.

<sup>189</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 32.

<sup>190</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 33.

<sup>191</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 33.

Telstra acknowledges that the 2008 Undertaking relates only to network costs, and submits that this does not prevent the ACCC accepting the 2008 Undertaking.<sup>192</sup>

Network Strategies in a report commissioned by Optus, submits that a correct TSLRIC calculation requires all costs specific to the ULLS to be included.<sup>193</sup> In addition, Optus submits that in order to achieve certainty, access seekers need to know the full monthly charge. Optus therefore believes that all parts of the ULLS charge should be submitted as part of the 2008 Undertaking and that the ACCC should not consider part of the whole charge.<sup>194</sup>

### **8.1.2 ACCC view**

In determining the effect of the Proposed Monthly Charge, the ACCC has had regard to what markets the ULLS is used in as an input.

#### ***Relevant market(s)***

The ACCC notes that the ULLS is an input in the provision of a range of services, including fixed-line voice services (such as the provision of line rental, local call and long distance call services) and high-speed xDSL broadband services. As such in assessing whether particular terms and conditions will promote competition in the supply of the ULLS, the ACCC has identified the following relevant markets:

- the wholesale market for the provision of broadband/DSL and voice services.

Competitors rent the ULLS from Telstra and combine it with their own or others' infrastructure and/or build alternative access infrastructure-based (stand-alone networks) to compete with Telstra's CAN.

- the retail market for the provision of broadband/DSL and voice services.

Regulated wholesale services—the LCS and WLR—can be bought from Telstra and resold to retail customers. Competitors to Telstra may also supply retail services via their own wholesale operation - through their own ULLS-based or alternative access infrastructure-based networks.

The rest of this section details the reasoning as to why the ACCC considers that the Proposed Monthly Charge will not promote competition in the broadband/DSL and voice services markets. In particular, the section makes the following main points:

- Telstra is likely to over recover the costs of providing the ULLS with a \$30 charge. Therefore, at a \$30 charge, efficient providers of broadband/DSL and voice services would not face equivalent wholesaling costs and are not able to compete on their respective merits downstream;

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<sup>192</sup> Telstra, *Response to the ACCC's Draft Decision*, 12 August 2008, p. 10.

<sup>193</sup> Network Strategies, *Report for Optus*, 5 September 2008, p. 66.

<sup>194</sup> Optus, *Response to the ACCC's Draft Decision*, August 2008, p. 33.



2007/08: [begin c-i-c] [redacted] [end c-i-c]

[begin c-i-c] [redacted] [end c-i-c]

Notes:

- a. does not adjust for productivity improvements or other changes reasonably expected.
- b. assumes that monthly access charges are the only source of revenues from which to recover these costs, when other sources of revenue will likely be available.
- c. Telstra has reported that the number of access lines across all bands is [begin c-i-c] [redacted] [end c-i-c].

Even with the additions of ULLS specific costs and organisational level costs, the 2006/07 and 2007/08 average monthly charge necessary to recover the direct costs of the customer access network across all areas is significantly lower than the Proposed Monthly Charge. This indicates that the Proposed Monthly Charge of \$30 will allow Telstra to over recover the direct costs of providing the ULLS, and that it could recover these costs under a lower monthly charge.

The ACCC therefore considers that efficient access seekers using the ULLS will have difficulties competing with Telstra as the cost of a necessary input facing industry operators is not equivalent to what is faced by the incumbent.

***Will an access price that permits an access seeker to recover their costs, regardless of whether the access price is set at an efficient level, promote competition in related markets?***

The ACCC notes the inconsistency in Telstra's argument – on the one hand, Telstra appear to be arguing that access prices should be cost based, but at the same time, it argues that the \$30 charge will still keep access seeker's competing in the market as they are earning positive margins, suggesting that the \$30 is not cost-based.

Telstra appears to argue that prices should be set up to a level that will keep access seekers in the market, so a \$30 ULLS charge will still allow access seekers to achieve a profitable outcome.

The ACCC notes that it is not sufficient to simply have access prices set at a level that allows access seekers to maintain their existence in the relevant market. For competition to be promoted, the ACCC considers that the access price should be set at a level that ensures:

1. all downstream firms face the same price for interconnection ('equal access cost'); and
2. the interconnection price for all downstream firms is set to reflect the true cost of the access service ('setting the access price at an efficient level'). The ACCC

interprets the 'true cost' as the efficient cost, given that setting prices at such level sends the signals to efficiently build or buy.<sup>197</sup>

The first condition of an 'equal access costs' recognises that competitors facing a higher wholesaling cost will face a competitive disadvantage when competing for customers in downstream markets. For the competitor facing higher access costs, this is likely to reduce its incentives to compete for customers since more of the competing firm's profits will be taken up by the purchase of access. In this regard, the ACCC notes Optus' concerns of potential price squeezing behaviour – that if the Proposed Undertaking Charge was introduced, Telstra may reduce its retail prices for broadband and voice services and because it faces a lower internal charge, competitors will be unable to compete and may be squeezed out of the market. The ACCC considers that competition is not promoted when the vertically integrated incumbent has the ability to reduce downstream retail prices towards cost as it faces a much lower wholesale price than access seekers who are facing a \$30 charge.

The second condition recognises that an integrated carrier will set its retail prices in part based on the true cost of access services it supplies to itself. The ACCC notes that unless all other carriers explicitly face an access price equal to the efficient cost of access, they will not compete on 'equal terms' with the integrated carrier. Satisfying this condition means that *efficient* service providers face equivalence in wholesaling costs so that they can compete on their respective merits downstream and keep any efficiency gains from competing. This situation has been referred to as a 'strong' competitive neutrality scenario by William Tye.<sup>198</sup> Strong competitive neutrality manifests itself in the inability of firms controlling access to appropriate the efficiency advantages of firms seeking interconnection.

The ACCC considers that competition is best promoted when both conditions are satisfied as the competitive behaviour of downstream firms does not depend on the presence or absence of vertical integration.

William Tye explains the notion of 'competitive neutrality' in the context of regulating interconnection:

The basic notion of "competitive neutrality" is to define the terms of interconnection to purge the emerging competitive regime of the legacy of the historical monopoly regime. An efficient transition regime would then achieve effective competition through efficient entry and provision of services.<sup>199</sup>

He distinguishes between 'weak' and 'strong' competitive neutrality. Telstra's argument appears to support weak competitive neutrality, which seeks to set prices at a level that keeps competitors in the market, regardless of their ability to provide services efficiently or not.

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<sup>197</sup> Stephen P King, Joshua S Gans, *When are regulated access prices competitively neutral? The case of telecommunications in Australia*, Australian Business Law Review, 2005, volume 32, issue 6, pp. 407-41.

<sup>198</sup> William B. Tye, *Conference paper*, July 25-26 2002.

<sup>199</sup> William B. Tye, *Conference paper*, July 25-26 2002, p. i.

The ACCC is of the view that the Proposed Monthly Charge violates both conditions. In particular, as set out above, the first condition of 'equal access cost' is not satisfied because Telstra is able to recover its costs of providing the ULLS at much less than \$30 indicating that the Proposed Monthly Charge would not ensure equivalence in wholesaling costs. Further, the second condition of 'setting the price at the efficient level' is also not satisfied.

As noted in section 7, the ACCC is of the view that the Proposed Monthly Charge is an overestimate of the efficient costs of providing the ULLS in the long run. In that section, the ACCC noted that the Telstra's implementation of TSLRIC+, with its modelling assumption inconsistency in applying the 'hypothetical operator', cannot be relied on to support efficient and forward-looking costs. Further, when Telstra's implementation of TSLRIC+ is populated with other input values, the resulting estimate indicates that the Proposed Monthly Charge is significantly above the range of estimates that would be considered reasonable. The ACCC also notes that international benchmarking of unbundled local loop prices with the Proposed Monthly Charge indicates that the \$30 is significantly above other comparable countries. The preliminary results from the Analysys cost model also suggest that the Proposed Monthly Charge may lie outside the range of estimates that would be considered efficient and forward-looking.

As the Proposed Monthly Charge does not meet both conditions the ACCC considers should be satisfied to best promote competition, the ACCC does not consider that its introduction will promote competition. In particular, the Proposed Monthly Charge results in the asymmetric benefits accruing to the Telstra as the integrated carrier relative to access seekers in the provision of DSL/broadband and voice services.

***Effect on competition when competitors face a charge that does not reflect equal access costs and is not set at an efficient level***

The ACCC considers that there may be serious detrimental consequences to the competitive process if efficient competitors are not facing the equivalent cost of access to a necessary input as they are unable to keep any efficiency gains. As noted above, this is likely to diminish access seekers' incentives to enter (including into new service areas) the broadband/DSL and voice services market via ULLS usage (including into new service areas). Also, those already with existing ULLS-based networks may be deterred to invest in further ULLS uptake. Access seekers' willingness to invest in further improvements in quality and ability to compete on price is also likely to be affected. The reduction in competitive tension from partial facilities-based competition puts at risk the benefits - such as lower prices, better quality and more innovative services - that can accrue to end users.

The ACCC has serious concerns that the Proposed Monthly Charge will have a significant detrimental effect on ULLS-based competition, especially as such partial facilities-based competition has seen significant growth. [begin c-i-c]

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<sup>200</sup> UBS, *Australian Telecommunication Industry Survey-Volume 5*, March 2009

[end c-i-c]

The ACCC also notes that DSL delivered over the ULLS continues to be the dominant provisioning mechanism. In this regard, the ACCC would be concerned about the effect that impediments to ULLS-based competition would have on the competitive outcomes in broadband markets. As at June 2007, on average, approximately 62 per cent of OECD broadband subscribers accessed the internet using DSL technology with 29 per cent, on average, using cable technology. In comparison to the OECD average, approximately 81 per cent of Australia's broadband subscribers accessed the internet through DSL, while cable users only accounted for 15 per cent.<sup>205</sup>

The ACCC also notes that there are significant barriers to entry facing competitors who wish to deploy a ULLS-based network, which means any further impediments to competition (such as in the form of an access price that distorts competitive outcomes) would be of serious concern to the ACCC.

One particular barrier is the existence of capped exchanges. This represents an impediment for new and existing access seekers seeking to acquire the ULLS. In a fully capped or MDF capped exchange, access seekers are precluded from interconnecting to Telstra's facilities for the purpose of acquiring the ULLS. Another barrier is the delays resulting from the queuing process employed by Telstra in exchanges where access seekers need to undertake works prior to installing their equipment. This prevents access seekers from obtaining timely access to Telstra exchange buildings, affecting their ability to compete effectively which may reduce their incentives to continue to deploy ULLS-based infrastructure.

The ACCC considers that by deterring ULLS-based competition, the Proposed Monthly Charge could lead competitors to rely on the resale of Telstra's products, which results in less favourable competitive outcomes for end-users. Resellers do not provide the degree of competitive constraint on Telstra's vertically integrated business as competitors with their own ULLS-based networks are less reliant on accessing

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<sup>201</sup> Figure derived from: UBS, *Australian Telecommunication Industry Survey-Volume 5*, March 2009; ACCC, *Telstra Customer Access Network Record Keeping and Reporting Rules - Section 151BU Trade Practices Act 1974*, September 2007.

<sup>202</sup> ACCC, *Telstra Customer Access Network Record Keeping and Reporting Rules - Section 151BU Trade Practices Act 1974*, September 2007.

<sup>203</sup> ACCC, *Telstra Customer Access Network Record Keeping and Reporting Rules - Section 151BU Trade Practices Act 1974*, September 2007.

<sup>204</sup> ACCC, *Telstra Customer Access Network Record Keeping and Reporting Rules - Section 151BU Trade Practices Act 1974*, September 2007.

<sup>205</sup> OECD, 'OECD broadband statistics to June 2007', available at [www.oecd.org/document/60/0,3343,en\\_2649\\_37441\\_39574076\\_1\\_1\\_1\\_37441,00.html](http://www.oecd.org/document/60/0,3343,en_2649_37441_39574076_1_1_1_37441,00.html).

Telstra's network inputs, and therefore have more scope to offer competitive service offerings.

The ACCC notes Telstra's comment that the introduction of the Proposed Monthly Charge would have the effect of access seekers choosing to fully bypass the CAN with an increase in investment in those alternative technology networks that provide services substitutable to the CAN. The ACCC observes that alternative telecommunications access networks using fixed wireless, optical fibre and mobile services have emerged in Band 2. For instance in Band 2 ESAs, the proportion of ESAs with the presence of HFC competitors was approximately [begin c-i-c] [redacted] [end c-i-c] per cent in December 2008.<sup>206</sup> More generally, for all bands, the ACCC observes that wireless broadband users (includes fixed and mobile wireless) has seen a significant increase in growth; from June 2007 to June 2008, user uptake increased by [begin c-i-c] [redacted]<sup>207</sup> [end c-i-c] per cent. This compares to HFC take up of [begin c-i-c] [redacted]<sup>208</sup> [end c-i-c] per cent in the same time period (and [begin c-i-c] [redacted]<sup>209</sup> [end c-i-c] per cent growth in ULLS SIOs). The ACCC notes that the wireless figures also include the provision of services to regional areas, the majority of which are in Queensland.<sup>210</sup>

The ACCC considers that there is some uncertainty as to the extent that bypass or further augmentation of an existing network would actually occur as a result of the introduction of the Proposed Monthly Charge. The ACCC notes that the effect on competition between services delivered on the CAN and alternative access-based networks from the Proposed Monthly Charge depends on the degree of substitutability between broadband/DSL and voice services delivered on the CAN compared to that on alternative access infrastructure-based networks. For instance, voice services delivered over the CAN and mobile networks may be substitutable, but high speed broadband services delivered over these platforms may not be close substitutes. For example, as Nokia Siemens Networks has noted, xDSL and fibre-based broadband has the potential to offer the whole suite of services currently available in the market, including High Definition IPTV and interactive Web2.0 applications, whereas mobile networks are more suited to providing more limited web and other mobile applications on the move.<sup>211</sup>

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<sup>206</sup> ACCC, *Telstra Customer Access Network Record Keeping and Reporting Rules - Section 151BU Trade Practices Act 1974*, September 2007.

<sup>207</sup> Figure derived from aggregation of: ABS, *Internet Activity Survey*, June 2008; ABS, *Internet Activity Survey*, March 2007; ABS, *Internet Activity Survey*, December 2007

<sup>208</sup> Figure derived from aggregation of data provided by Telstra and Optus under the Div 12 record keeping rules: Telstra, 2007-08 Report on telecommunications charges under Part XIB, Division 12 of the Trade Practices Act 1974 (Cth) – Schedule F Internet Services, 8 October 2008; Telstra, Division 12 report updated – Schedule F Internet Services, 4 February 2009; Optus, Division 12 return Optus, Final Optus Internet data tables and tariff charges – Internet Services information request, 18 December 2008; Optus, Division 12 data request – ACCC Supplementary Data Cable and Wireless, 4 February 2009.

<sup>209</sup> ACCC, *Telstra Customer Access Network Record Keeping and Reporting Rules - Section 151BU Trade Practices Act 1974*, September 2007.

<sup>210</sup> ACMA-ACCC, *Communications Infrastructure and Services Availability in Australia*, 2008, p.10.

<sup>211</sup> Nokia Siemens Networks, *Broadband with no boundaries*, March 2008.

Overall, the ACCC is of the view that the introduction of the Proposed Monthly Charge may have the effect of creating an incentive for some access seekers to build new networks or further augmenting their existing network. However, a key issue to consider is that even if some bypass or further augmentation does occur as a result of the introduction of the Proposed Monthly Charge, the ACCC questions whether such bypass represents efficient investment and would result in the delivery of better service potential. The effect on efficient investment as a result of the introduction of the Proposed Monthly Charge is discussed later in this section.

***Whose costs are relevant, and how should these costs be measured to promote competition in related markets?***

Telstra argues the costs that are relevant are those of a new entrant:

The price proposed in Telstra's Undertaking is supported by the result of the TEA model which calculates the TSLRIC+ of an efficient new entrant supplying ULLS.<sup>212</sup>

The ACCC notes the inconsistent use of the hypothetical operator in Telstra's implementation of TSLRIC+, in particular Telstra assumes the hypothetical operator is the access provider but at other times, assumes it is a new entrant. For instance, while Telstra indicates that its application of the TEA model estimates the TSLRIC+ of an efficient new entrant, Telstra's implementation of TSLRIC+ assumes a new entrant would build Telstra's existing (optimised) full copper network in the present day. This inconsistency in the hypothetical operator standard implies that a new entrant would replicate the existing copper network, which increases the cost attributed to the hypothetical network. Yet, Telstra acknowledges there is a difference when the access provider or new entrant assumption is used as the hypothetical operator:

...a new entrant's costs can, and usually do, differ from those of an incumbent for a number of reasons. For example, an incumbent would have adopted a network design and technology based on a reasonable set of expectations at the time. A new entrant, however, might adopt a different network design and/or technology today given a different set of circumstances. Similarly, an incumbent would have adopted the most efficient construction practices and placement procedures in the past, while a new entrant might have to adopt a different set of practices and procedures today, given it faces different environmental factors.<sup>213</sup>

The ACCC considers that effective competition will be promoted when the access provider operating efficiently in the long run is assumed to be the hypothetical efficient operator in a TSLRIC+ model. In this way, the hypothetical network is based on the current network design where an entrant will decide to build (and compete effectively) if it is able to do so at a lower price than the access provider.

Further, the ACCC notes Telstra's implementation of TSLRIC+ where it assumes that a new entrant building a stand alone by-pass network that replicates Telstra's current network, results in the costs of the hypothetical network being artificially inflated as it assumes that the new entrant will repeat the inefficient deployment decisions of the incumbent. For instance, costs such as breaking and re-instating concrete costs may

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<sup>212</sup> Telstra, *Response to the ACCC's draft decision*, 23 December 2008, p. 24.

<sup>213</sup> Telstra, *Response to the ACCC's draft decision*, 23 December 2008, p. 18.

not be incurred in a forward-looking network design. Inclusion of such costs would not best promote competition - equally efficient competitors would not be able to compete on their merits in their respective downstream operations.

### ***Telstra's argument regarding access seeker's profit margins***

The ACCC notes that the level of access seeker's profit margin is not a legislative criterion. However, the ACCC considers it is relevant to make a number of comments about the analysis behind an access seeker's current profit margin and likely profit margin under the \$30 Proposed Monthly Charge, given the discrepancies in the analysis and subsequent conclusions stemming from this analysis.

The ACCC notes the following views submitted by access seekers:

- Optus' considers that Telstra have omitted a number of ULLS-associated costs from their projections which is likely to result in an overstatement of its current and future profitability;<sup>214</sup>
- Adam et al. submits that Telstra have included non-ULL services in their calculations of revenue, resulting in an overstatement of earnings;<sup>215</sup> and
- Adam et al. submits that the revenue base used by Telstra in its calculations includes an overstated customer base. Telstra's calculations of revenue for each of Adam Internet et al's products do not use the relevant customer bases for each product and also included LSS based services. By correcting these two errors iiNet's weighted gross margin on ULL based services is about half of that stated by Telstra.<sup>216</sup>

The ACCC notes that in response to access seekers submissions, Telstra submits that Optus and Adam et al.'s views are not supported by reliable evidence and the criticisms of Telstra are based on 'spurious assertions' about the way telephone services are purchased.<sup>217</sup>

Having considered submissions received on this issue, the ACCC is of the view that all parties including Telstra could not provide compelling arguments in their submissions on the effect of the \$30 charge on access seeker's profit margins.

### ***Inclusion of the specific charge in the Proposed Monthly Charge***

The ACCC notes that Telstra has tried to redefine the Proposed Monthly Charge to include a specific charge of \$2.45 in its submission in response to the 2008 Draft Decision. However, the ACCC notes that as this clarification was stated in Telstra's submission and not reflected in the formal terms and conditions of the 2008

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<sup>214</sup> Optus, *Optus Supplementary Submission to the Telstra ULLS Undertaking (2008-2010): A response to the ACCC's request for further information on Optus' ULLS margins*, February 2009, p. 2.

<sup>215</sup> iiNet, *Further submission from iiNet*, 2 February 2009.

<sup>216</sup> iiNet, *Further submission from iiNet*, 2 February 2009.

<sup>217</sup> Telstra, *Response to Optus and iiNet submissions on Profitability Analysis*, 11 March 2009, p. 1.

Undertaking, there would be potential uncertainty for access seekers as to whether a ULLS specific charge is included in the Proposed Monthly Charge.

The ACCC notes that it has focused on the Proposed Monthly Charge as being the network cost component, as per the formal Undertaking documents. It is important to note that the network cost component represents a significant part of the charge for the ULLS. Even if the Proposed Monthly Charge as detailed in the Undertaking were to be taken to include a specific cost component of \$2.45 it would not materially affect the ACCC's overall assessment that the Proposed Monthly Charge is not reasonable.

### ***Overall conclusion on promotion of competition***

The ACCC considers that setting prices reflective of efficient costs in the long run, inclusive of a normal return on investment, best promotes competition.

The ACCC does not consider that the Proposed Monthly Charge reflects the access provider's efficient costs of providing the ULLS in the long run. The consequences for efficient service providers not facing equivalent costs in respect of a necessary input, that is the price of the ULLS, is that equally efficient competitors are not able to compete on their merits in their respective downstream operations. This is likely to detrimentally affect ULLS-based competition in the supply of DSL/broadband and voice services, an area of partial facilities-based competition that has seen significant growth in the last four years.

With a ULLS charge set at a level that inflates the efficient cost of providing the service, potential competitors may be deterred in competing via deployment of a ULLS-based network. Incentives to invest in further ULLS uptake by existing competitors will diminish and may reduce the willingness of existing competitors to compete for consumers by reducing prices or increasing quality. This lessening in partial facilities-based competition will reduce the competitive tension in the market for DSL/broadband and voice services, reducing the benefits that can accrue to end-users through greater competition, such as better service offerings.

Overall, the ACCC is of the view that the introduction of the Proposed Monthly Charge may have the effect of some access seekers choosing to build new networks or further augmenting their existing network. However, as discussed above, the ACCC considers that even if some bypass or further augmentation does occur or occurs as a result of the introduction of the Proposed Monthly Charge, the ACCC questions whether such bypass represents efficient investment and would result in the delivery of better service potential. The effect on efficient investment as a result of the introduction of the Proposed Monthly Charge is discussed later in this section.

The ACCC also notes that competitors are likely to move towards a resale model when faced with an access price that does not reflect the efficient costs of providing the service. The ACCC considers that infrastructure-based competition is more favourable than resale competition than, whether that be via the ULLS-based network or stand alone alternative access infrastructure-based networks, given that infrastructure-based competition means there is less reliance on the Telstra network, such that competition is sustainable and, therefore, likely to result in better service outcomes for consumers.

Overall, the ACCC considers that the Proposed Monthly Charge in the 2008 Undertaking would not promote competition in the market for broadband/DSL and voice services.

The ACCC does not consider that the non-price terms of the 2008 Undertaking will impact the objective of promoting competition.

## **8.2 Achieving any-to-any connectivity**

Subsection 152AB(8) of the TPA specifies that the objective of any-to-any connectivity is achieved if, and only if, each end-user who is supplied with a carriage service that involves communication between end-users is able to communicate, by means of that service, with each other end-user who is supplied with the same service or a similar service, whether or not the end-users are connected to the same telecommunications network.

In its 2008 Draft Decision, the ACCC took the view that the terms of access in the 2008 Undertaking do not directly affect the objective of achieving any-to-any connectivity.

Adam Internet et al. submit that it does not agree with the ACCC's view. They note that given that a large number of premises cannot be serviced via the ULLS because of technology blockers, such as RIMs and pair gains, they consider that in order to promote the LTIE, the 2008 Undertaking should improve any-to-any connectivity. They submit that Telstra does not undertake to remove technology blockers or transport services to copper lines in order to allow greater uptake of the ULLS. As such, Adam Internet et al consider that this objective has not been achieved.<sup>218</sup>

In response, the ACCC notes that in assessing whether the 2008 Undertaking satisfies this objective, there is a difference between 'achieving' and 'promoting' any-to-any connectivity. In particular, the ACCC is interested in considering whether the 2008 Undertaking would create obstacles for the achievement of any-to-any connectivity, where this means difficulties for the end-user to be able to communicate regardless of the network to which they are connected. The ACCC does not consider that the 2008 Undertaking is required to advance this objective through further terms and conditions of the 2008 Undertaking.

Therefore, the ACCC's view is that the 2008 Undertaking does not directly affect the objective of achieving any-to-any connectivity.

## **8.3 Encouraging the economically efficient use of, and economically efficient investment in infrastructure**

In the ACCC's view, having regard to 'the objective of encouraging the economically efficient use of, and economically efficient investment in ... infrastructure'<sup>219</sup> requires

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<sup>218</sup> Adam Internet et al, *Response to the ACCC's draft decision*, 2008, p. 6.

<sup>219</sup> Paragraph 152AB(2)(e) TPA.

an understanding of the concept of economic efficiency. This concept consists of three components:

- Productive efficiency - This is achieved where individual firms use resources such that goods and services are produced using the least cost combination of inputs.
- Allocative efficiency - This is achieved where the prices of resources reflect their underlying costs so that resources are then allocated to their highest valued uses (i.e. those that provide the greatest benefit relative to costs).
- Dynamic efficiency - This reflects the need for industries to make timely changes to technology and products in response to changes in consumer tastes and in productive opportunities.

Subsection 152AB(6) of the TPA lists the matters the ACCC must have regard to in determining the extent to which the terms and conditions of the 2008 Undertaking are likely to result in the achievement of the objective of encouraging efficient use of, and investment in, infrastructure. Those matters are:

- Whether it is, or likely to become, technically feasible for the services to be supplied and charged for, having regard to:
  - the technology that is in use, available or likely to become available;
  - whether the costs that would be involved in supplying, and charging for, the services are reasonable or likely to become reasonable; and
  - the effects, or likely effects, that supplying, and charging for, the services would have on the operation or performance of telecommunications networks.
- The legitimate commercial interests of the supplier or suppliers of the services, including their ability to exploit economies of scale and scope.
- The incentives for investment, including the risks involved in investment,<sup>220</sup> in:
  - the infrastructure by which the services are supplied; and
  - any other infrastructure by which the services are, or are likely to become, capable of being supplied.

However the ACCC is not limited to these matters in its assessment of the extent to which the 2008 Undertaking is likely to achieve the above objective (subsection 152AB(7)).

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<sup>220</sup> Subsection 152AB(7A) was inserted into the TPA in September 2005. This subsection requires that the ACCC, in determining incentives for investment, must have regard to the risks involved in making the investment.

The ACCC considers that an access price that reflects efficient, forward-looking costs best meets the objective of encouraging the economically efficient use of and investment in infrastructure. This is because such prices:

- are consistent with the access provider's legitimate commercial interests;
- enable access providers to exploit economies of scale and scope; and
- provide correct incentives for the access provider and access seekers to make efficient investments in infrastructure used to supply the ULLS and downstream services.

In the 2008 Draft Decision, the ACCC took the view that the terms and conditions in the 2008 Undertaking would not satisfy the objective of encouraging the efficient use of, and investment in, infrastructure.

### 8.3.1 Submissions

Telstra's submission assumes that the current ULLS price is set below cost. Telstra submits that:

If prices are set below the TSLRIC+ of an efficient new entrant, efficient facilities-based investment will be stifled. This is the current outcome that the Australian industry is experiencing, given the current level of ULLS prices, which are extremely low and below cost.<sup>221</sup>

Telstra submits that investment in the CAN requires Telstra to incur costs that are, by their very nature similar to those a new entrant would incur. That is, Telstra must dig trenches, place conduit and haul cable through the conduit ducts and reinstate the affected area to a similar state as originally encountered. Therefore, Telstra considers that the cost to Telstra and other existing facilities-based competitors of adding to and upgrading existing networks is very similar to the cost that would be faced by a new entrant undertaking the same work.<sup>222</sup>

Telstra considers that the ongoing incentives for investment in infrastructure will not be maintained by prices that are less than the forward-looking costs that would be faced by a new entrant building a network, as measured by a properly constructed TSLRIC+ model.

Telstra submits that the substantial facilities-based entry that has occurred did so prior to the ACCC setting very low ULLS prices. As a consequence of those determinations, facilities-based entry has stalled with firms preferring to utilise Telstra's network rather than their own. In this regard, it argues that continuing to set the ULLS price at low levels will have a detrimental effect on facilities-based competition for ULLS substitutes.

Telstra also submits that setting the ULLS price to \$30 - closer to the cost of the efficient new entrant building a CAN - would promote the long term interests of end

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<sup>221</sup> Telstra, *Response to the ACCC's draft decision*, 23 December 2008, p. 36.

<sup>222</sup> Telstra, *Response to the ACCC's draft decision*, 23 December 2008, p. 35.

users and encourage Optus to invest in, and use its own infrastructure and thereby promote long term competition.<sup>223</sup> Therefore, Telstra considers that the ACCC should have regard to whether its decision would encourage efficient investment in, and use of Optus' infrastructure.<sup>224</sup> Telstra also submits that its Proposed Monthly Charge provides the expectation of financial capital maintenance for Telstra's and other facilities based competitors' new investments in CAN infrastructure. Telstra considers that while the ULLS represented a small proportion of its total lines, Telstra faced only a small disincentive to invest in the CAN because of low ULLS prices (\$12.30-\$16 per month). However, now that a substantial number of Telstra's lines are used to provide the ULLS, the disincentive has increased significantly. Hence, ULLS pricing that is below TSLRIC+ will, particularly in the near future, put pressure on Telstra to reduce its CAN investment below efficient levels.<sup>225</sup>

Telstra also considers that, as access seekers will have the ability to continue to earn substantial margins on their investments, such access seekers will undertake efficient investments if they expect their prices to recover the cost of their investment.

In terms of the TEA model, Telstra submits that the ACCC proposes that full optimisation would involve trenching inputs being based on Telstra's actual incurred costs while other inputs should be based on forward-looking efficient costs. Telstra states that if prices are based on the historic or embedded costs of trenching (and assuming these are below current costs), then access seekers will never build their own infrastructure even when it is more efficient for them to do so.<sup>226</sup>

In a submission on behalf of Telstra, Ergas argues that with respect to assets that must eventually be replaced, notwithstanding that assets such as ducts and trenches may never be replicated by access seekers, the logic of TSLRIC+ pricing implies that access services that use those assets should be priced so as to recover their replacement costs. According to Ergas, this will provide the minimal signal necessary to lead investors to replace redundant assets.<sup>227</sup>

Optus submits that the proposed substantial and rapid increase in the ULLS charge would significantly discourage investment in DSLAMs and associated infrastructure by access seekers. It considers that such investment is highly responsive to changes in the ULLS monthly charge and is very likely to be deterred by increases in that charge, particularly if the pace of the increase is rapid rather than gradual.<sup>228</sup>

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<sup>223</sup> Telstra, *Supplementary Submission-Competing Infrastructure in Band 2 Areas: the implications of SingTelOptus' HFC network for ULLS pricing*, 20 March 2009, p. 36, paragraph 97.

<sup>224</sup> Telstra, *Supplementary Submission-Competing Infrastructure in Band 2 Areas: the implications of SingTelOptus' HFC network for ULLS pricing*, 20 March 2009, p. 36, paragraph 99.

<sup>225</sup> Telstra, *Response to the ACCC's draft decision*, 23 December 2008, p. 29.

<sup>226</sup> Telstra, *Response to the ACCC's draft decision*, 23 December 2008, p. 37.

<sup>227</sup> Ergas Henry, In The Matter Of Undertaking Dated 3 March 2008 Lodged By Telstra Corporation Limited With The Australian Competition And Consumer Commission In Respect Of Unconditioned Local Loop Service, April 2009, p. 9.

<sup>228</sup> Optus, *Response to the ACCC's draft decision*, 8 December 2008, p. 43.

Optus believes that investment in access seeker DSLAMs is strongly influenced by the indicative price set by the ACCC. It submits that the ACCC's indicative price has often been a key predictor of the arbitrated ULLS price and thus may be regarded as the key determinant of access seeker expectations of the ULLS price. In turn, access seeker expectations of the ULLS price are a key determinant of DSLAM investment by access seekers. Optus considers that allowing for a lag of a year or two for investment lead-time, investment by access seekers in DSLAMs has been stimulated significantly by the ACCC's reductions in ULLS indicative prices in Band 2 first to \$22 and then later to \$14.30.<sup>229</sup>

Optus considers that access seekers have made substantial investments in DSLAMs and associated infrastructure on the basis of a reasonable expectation that ULLS prices will remain close to the ACCC's indicative price, which is \$14.30 for the period 1 July 2007 to 30 June 2008 and \$16.00 for the period 1 July 2008 to 30 June 2009. It follows that Telstra's proposed substantial and rapid increase in the ULLS charge from \$14.30 (the regulated price at March 2008) to \$30.00 (the Proposed Monthly Charge) would significantly discourage investment in DSLAMs and associated infrastructure by access seekers.<sup>230</sup>

### **8.3.2 ACCC view**

In assessing whether the 2008 Undertaking encourages the economically efficient use of, and investment in infrastructure, the ACCC has had regard to the economically efficient use of and investment in infrastructure used to supply the ULLS. This is the infrastructure necessary to provide the CAN, for example, ordering and provisioning systems and access networks, as well as infrastructure used to supply carriage and/or content services over the ULLS (for example, DSLAMs).

As noted in section 7, the ACCC is of the view that the Proposed Monthly Charge is an overestimation of the efficient costs of providing the ULLS in the long run. The ACCC considers that Telstra's implementation of TSLRIC+, with its inherent modelling assumption inconsistencies, cannot be relied on to support efficient and forward-looking costs. Further, when the TEA model is populated with other input values, the resulting estimate indicates that the Proposed Monthly Charge may be significantly above the range of estimates that could be considered to reflect the efficient costs of supplying the ULLS. The ACCC also notes that international benchmarking of unbundled local loop prices with the Proposed Monthly Charge indicates that the \$30 is significantly above other comparable countries.

The ACCC notes that because Telstra's Proposed Monthly Charge is an overestimation of the efficient cost of providing the ULLS, its introduction would distort the incentives for efficient investment in ULLS-based infrastructure.

An inflated ULLS charge distorts allocative efficiency and could encourage inefficient bypass of the 'last mile' of Telstra's copper network onto other, potentially higher cost networks. A ULLS charge that overestimates the cost of providing the

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<sup>229</sup> Optus, *Response to the ACCC's draft decision*, 8 December 2008, p. 49.

<sup>230</sup> Optus, *Response to the ACCC's draft decision*, 8 December 2008, p. 49.

service would also be inefficient in a productive efficiency sense, since competitors using the ULLS would not be able to provide broadband and voice services at the lowest possible cost. The ability to achieve dynamic efficiency will also be affected as competitors in the market for broadband and voice services may not have sufficient funds to invest in innovative products. The ACCC considers that these efficiency outcomes are likely to be at risk with the introduction of a ULLS price that overestimates the cost of providing the service. In this regard, the ACCC disagrees with Telstra's comment that as long as access seekers are recovering their investment, they will continue to invest in infrastructure. Setting the ULLS price at a level that is not equivalent to the wholesaling cost that the access provider itself is facing and which is not set at the efficient level, reduces the incentives and ability for more efficient competitors to keep the efficiency gains, including investing further in ULLS-based infrastructure. In this regard, the ACCC notes Optus' submission that the ULLS price is a key factor in an access seeker's decision to investment in DSLAMs, and that the reduction in the ULLS indicative prices over time has contributed to increased DSLAM investment.

The ACCC notes that Telstra argues that alternative facilities-based competition has suffered, and will continue to suffer, as a consequence of a below cost ULLS charge. The ACCC also notes Telstra's point that alternative access-based investment will increase with the introduction of the Proposed Monthly Charge. The ACCC agrees that investment in alternative access-based infrastructure may occur but, as noted previously, the ACCC considers that it is uncertain as to the extent that such bypass would occur as this would depend on the degree of substitutability between services delivered on the CAN compared to alternate technologies.

Further, while the ACCC considers that the bypassing of Telstra's network is likely to provide stronger competitive tension in the market. The ACCC notes that it does not consider simple duplication of networks is in the LTIE. The ACCC only seeks to promote facilities-based competition where it is likely to encourage the *efficient* use of, and investment in, infrastructure.

The ACCC considers that *efficient* investment occurs when competitors build a new network that results in better service potential, as measured in productive, allocative and/or dynamic efficiency outcomes. For instance, productive efficiency may be promoted if a new network has lower wholesaling costs than the current provisioning cost of the ULLS. To encourage efficient investment in alternative access networks and ULLS-based networks, the appropriate access price should reflect the efficient cost of providing the ULLS in the long run. The ACCC does not consider that Telstra's implementation of TSLRIC+ which assumes investment today in another copper network that replicates Telstra's existing network design represents efficient investment or that the unit cost of a better access network would be at \$30. Setting an access price that does not reflect the efficient costs of providing the ULLS is likely to distort the decision to buy or efficiently build alternative networks.

The ACCC does not agree with Telstra's comment that a ULLS charge lower than \$30 would reduce its incentives to continue investing in the CAN. The ACCC considers that the Proposed Monthly Charge more than compensates Telstra for the cost of providing the service as the \$30 is an overestimate of the cost of providing the ULLS. The ACCC also notes that the \$30 Proposed Monthly Charge would reduce Telstra's

incentives to invest in an efficient manner as the \$30 charge does not reflect the costs that it has faced and will face in the future. Further, the ACCC notes that Telstra's investment in the CAN is necessary for the provision of a range of fixed-line services to end-users, not just the ULLS. In this regard, it would be expected that Telstra would continue to invest in the CAN to ensure recovery of costs and a normal risk-adjusted return for all services that use the CAN. The ACCC observes that Telstra's RAF 2007-08 historic cost report demonstrates that Telstra services that use the CAN are very profitable with overall net profit for all services at 2007-08 of [begin c-i-c] [redacted] [end c-i-c]. The ACCC is also not persuaded by Telstra's argument that a price lower than the \$30 Proposed Monthly Charge will reduce its incentives to continue investing in the CAN as a substantial number of Telstra's lines are used to provide ULLS. The ACCC considers that the increased uptake of ULLS is not material to Telstra's incentives to continue invest in the CAN if it is able to recover its costs through a ULLS charge that allows it to recover its efficient costs of providing the ULLS.

In considering the appropriate trenching costs in estimating the efficient cost of providing the ULLS in the long run, the ACCC notes that under the assumption of the access provider as the hypothetical efficient operator, the 'starting point' in determining the appropriate network design is the current network design—not a clean slate scenario.

The ACCC notes Telstra's comments that by setting prices on the historic cost of trenching, access seekers will never build their own infrastructure even when it might be efficient to do so. To clarify, the ACCC notes that, it considers that the access provider may incur trench costing when building the hypothetical network; such costs would be incurred in greenfield areas where the cost of trenching would not be prohibitive - the issue is whether a hypothetical network in the present day would incur costs associated with the breaking and reinstating of concrete. The ACCC does not consider that building a new and better network in the present day would include breaking and reinstating costs. Instead, alternative technologies likely to be used are those that avoid as much as possible the need to break and reinstate concrete. Such technologies have been recognised by Telstra and Ergas and include wireless and aerial cabling.<sup>231</sup> Therefore, the inclusion of breaking and reinstating costs overestimates the current efficient cost of providing the ULLS and is therefore likely to reduce access seeker investment in new and existing ULLS-based networks. By diminishing investment in partial facilities-based competition—an area that is likely to result in more sustainable competition compared to simply the resale of Telstra's products—there is less competitive tension to compete for end-user custom through greater service offerings may result which is not in the LTIE.

The above argument also applies to the views expressed by Ergas. It is likely that when and if ducts need to be replaced, the hypothetical efficient operator, will as far as possible seek to utilise alternative technologies which do not involve breaking and reinstatement of concrete as well as alternative network configurations which

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<sup>231</sup> Ergas Henry, *In The Matter Of Undertaking Dated 3 March 2008 Lodged By Telstra Corporation Limited With The Australian Competition And Consumer Commission In Respect Of Unconditioned Local Loop Service*, April 2009, pg. 9.

minimise the amount of trenching required. As a result, the replacement cost of duct assets should reflect these considerations.

Therefore, the ACCC does not consider that the 2008 Undertaking encourages the economically efficient use of, and economically efficient investment in, infrastructure.

The ACCC does not consider that the non-price terms of the 2008 Undertaking will impact the objective of encouraging the economically efficient use of, and investment in, infrastructure.

## **8.4 Assessment of non-price terms in the 2008 Undertaking**

Telstra's 2008 Undertaking includes a limited number of non-price terms and conditions as set out in section 3 of this report.

In its 2008 Draft Decision, the ACCC concluded that the non-price terms in the 2008 Undertaking were reasonable.

### **8.4.1 Submissions**

In response to the Discussion Paper, Telstra submitted that its 2008 Undertaking is not required to ensure access seekers have the ability to reasonably access the ULLS by specifying a full suite of non-price terms of access.<sup>232</sup>

Telstra noted that the ACCC has commented on the same non-price terms of access in its assessment of Telstra's 2004 December Undertaking to the effect that it did not identify concerns that would lead to a view that the non-price terms in that undertaking were other than reasonable.<sup>233</sup>

Optus submitted that, to be consistent with the reasonableness criteria, Telstra's 2008 Undertaking should contain non-price terms that ensures that the access provided to access seekers is equivalent to that which Telstra provides to itself.<sup>234</sup>

In this regard, Optus submitted that Telstra does not provide equivalent access to Telstra exchange buildings (TEBA) to access seekers as it does to itself. It claimed that, while access seekers are prevented from accessing racks in 'capped exchanges', where capacity is constrained, these 'caps' do not apply to Telstra. Optus submits that the External Interconnection Cable service that is provided by Telstra in such capacity constrained situations is not equivalent to the access that Telstra provides to itself.<sup>235</sup>

Optus argued that the omission from the 2008 Undertaking of terms that require Telstra to provide access on a non-discriminatory and equivalent basis, such as with respect to TEBA, fault handling, copper quality and other non-price matters, makes

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<sup>232</sup> Telstra, *Response to the ACCC's draft decision*, 12 August 2008, p. 41.

<sup>233</sup> Telstra, *Response to the ACCC's draft decision*, 12 August 2008, p. 41.

<sup>234</sup> Optus, *Response to the ACCC's draft decision*, August 2008, p 67.

<sup>235</sup> Optus, *Response to the ACCC's draft decision*, August 2008, pp. 67-68.

the 2008 Undertaking less than reasonable in terms of the reasonableness criteria set out in section 152AH.<sup>236</sup>

Adam Internet et al submitted that a reasonable undertaking should include terms which require Telstra to meet its SAOs with respect to the interconnection of facilities that enable access seekers to acquire the ULLS. These access seekers raised concerns that access seekers do not receive equivalent treatment as Telstra provides to itself, in terms of being able to access Telstra's MDFs to install DSLAMs.<sup>237</sup>

In its response to access seeker submissions, Telstra repeated the view that the non-price terms and conditions in an undertaking do not need to be exhaustive nor are they required to ensure that access is provided to access seekers on an equivalent basis as that which the access provider provides to itself.<sup>238</sup>

Telstra also argued that none of the terms and conditions specified in the Undertaking can be said to be unreasonable due to the absence of terms and conditions regarding equivalence between access seekers and Telstra. According to Telstra, the terms and conditions in the Undertaking are not discriminatory and access seeker arguments concerning the non-equivalence of exchange building access and other non-price matters are not relevant to an assessment of whether the terms and conditions in the 2008 Undertaking are reasonable.<sup>239</sup>

#### **8.4.2 ACCC view**

The ACCC notes Telstra's comments in respect to previous views expressed by the ACCC on Telstra's non-price terms of access. The ACCC acknowledges that some of the terms are the same in both the 2004 December Undertaking and the 2008 Undertaking. Where it is possible to maintain consistency, the ACCC seeks to do so, however all terms submitted as part of an undertaking are assessed each time an undertaking is submitted.

The ACCC notes the concerns raised by Optus and Adam Internet et al that the 2008 Undertaking should include certain non-price terms to ensure that the service provided to access seekers is equivalent to that which Telstra provides to itself.

The ACCC considers that an undertaking should not be considered less than reasonable simply because a matter is not covered in an undertaking and where that matter can, potentially, be addressed by recourse to arbitration or commercial negotiation.

The ACCC considers that to the extent that the Undertaking includes limited non-price terms and conditions, as set out in Section 3.3, these do not appear to be unreasonable. However, the ACCC also notes that the Undertaking does not contain a complete set of non-price terms and conditions or deal with all aspects of the

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<sup>236</sup> Optus, *Response to the ACCC's draft decision*, August 2008, pp. 67-68.

<sup>237</sup> Adam Internet et al, *Response to ACCC ULLS Discussion Paper*, p. 5.

<sup>238</sup> Telstra, *Response to access seeker submissions*, 18 November 2008, p. 77.

<sup>239</sup> Telstra, *Response to access seeker submissions*, 18 November 2008, p. 78.

acquisition of the services covered in the Undertaking. The ACCC considers that non-price terms in the 2008 Undertaking would not create a barrier to access seekers gaining equivalent service. The ACCC also notes that the Undertaking is not required to be exhaustive, and other terms and conditions of supply could be determined by commercial negotiation, or failing agreement, through arbitration by the ACCC. On this basis the ACCC concludes that the non-price terms of the 2008 Undertaking would not detract from the LTIE.

The ACCC notes that the non-price model terms and conditions of access to the core services, including the ULLS will provide better guidance to industry as to terms and conditions the ACCC will have regard to in arbitrating access disputes concerning core services, such as the ULLS.<sup>240</sup>

## **8.5 Conclusion on LTIE**

Overall, the ACCC concludes that the Proposed Monthly Charge price term is not in the LTIE based on the conclusions that it would not promote competition under paragraph 152AB(2)(c) and would not result in the economically efficient use of and investment in infrastructure under paragraph 152AB(2)(e).

The ACCC notes that Telstra has clarified in its submission in response to the 2008 Draft Decision that the Proposed Monthly Charge includes the specific charge of \$2.45 in its submission in response to the 2008 Draft Decision. However, the ACCC notes that as this clarification was stated in Telstra's submission and not reflected in the terms and conditions of the 2008 Undertaking, there is potential uncertainty for access seekers as to whether the ULLS specific charge was intended to be included in the Proposed Monthly Charge.

The ACCC also has concerns about the timing of the Undertaking application from Telstra. The Undertaking was submitted in March 2008 with a term commencing from the point of acceptance by the ACCC until 31 December 2010. Telstra is aware that due to the statutory process that the ACCC is required to undertake, if the Undertaking is accepted, it will be valid for less than two years. In future, the ACCC would express a strong preference for Telstra to submit undertaking applications well prior to their proposed commencement date.

The ACCC considers that non-price terms in the 2008 Undertaking would not create a barrier to access seekers gaining equivalent service. In addition any issues in dispute can, potentially, be addressed by recourse to arbitration. On this basis the ACCC concludes that the non-price terms of the 2008 Undertaking would not detract from the LTIE.

## **8.6 Legitimate business interests of Telstra, and its investment in facilities used to supply the declared services**

The ACCC is of the view that the concept of legitimate business interests should be interpreted in a manner consistent with the phrase 'legitimate commercial interests'

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<sup>240</sup> ACCC, *Final Determination - Model Non-price terms and conditions*, November 2008.

used elsewhere in Part XIC of the TPA. Accordingly, it would cover the carrier's or carriage service provider's interest in earning a normal commercial return on its investment.

However, as is explained in the ACCC's guide *Access Pricing Principles – Telecommunications*, it is unlikely the access provider's legitimate business interest would extend to achieving a higher than normal commercial return through the use of market power.<sup>241</sup> For example, access prices should not, in most cases, be artificially inflated by the lack of competition in the supply of infrastructure services or barriers to entry (physical or administrative). However, carriers should also not be precluded from earning higher than normal commercial returns where these returns are generated from, for example, innovative investments or unique cost-cutting measures rather than through the exercise of market power or barriers to entry.

Following on from this, the access provider's legitimate business interests do not extend to receiving compensation for loss of any 'monopoly profits' that occurs as a result of increased competition. In this regard, the Explanatory Memorandum for the *Trade Practices Amendment (Telecommunications) Bill 1996* states:<sup>242</sup>

...the references here to the 'legitimate' business interests of the carrier or carriage service provider...are intended to preclude arguments that the provider should be reimbursed by the third party seeking access for consequential costs which the provider may incur as a result of increased competition in an upstream or downstream market.<sup>243</sup>

When considering the legitimate business interests of the carrier or carriage service provider in question, the ACCC also considers what is necessary to maintain those interests. This can provide a basis for assessing whether particular terms and conditions in the 2008 Undertaking are reasonable to maintain those interests.

In its 2008 Draft Decision, the ACCC took the view that overall the 2008 Undertaking would result in Telstra recovering more than is necessary for its legitimate business interests and investment in facilities used to supply the declared service.

### **8.6.1 Submissions**

Telstra submits that prices that reflect the costs of a new entrant and competitive market outcomes would not deliver to Telstra or any firm a higher than normal commercial return, as might be secured through the use of market power or barriers to entry. Telstra considers that in the exercise of modelling an efficient new entrant's costs with the TEA model, barriers to entry are assumed not to exist.<sup>244</sup>

Telstra considers that historic or embedded costs are irrelevant to the consideration of legitimate commercial interests. It states that it is legitimate for Telstra to earn a return that would otherwise occur in a competitive market for the supply of ULLS.

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<sup>241</sup> ACCC, *Access Pricing Principles – Telecommunications*, July 1997, p. 9

<sup>242</sup> *Trade Practices Amendment (Telecommunications) Bill 1996 Explanatory Memorandum*, p. 46.

<sup>243</sup> *Trade Practices Amendment (Telecommunications) Bill 1996 Explanatory Memorandum*, p. 46.

<sup>244</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 38.

Such a return would not be determined by Telstra's historic or embedded costs but rather the costs of an efficient new entrant.<sup>245</sup>

Telstra considers that the ACCC is focused upon the prevention of recovery of higher than a normal commercial return, while ignoring its responsibility to enable Telstra to earn a normal commercial return. Telstra considers that this approach is exemplified through the ACCC's exclusive focus on the prospect that forward looking providers may incur costs that Telstra has not historically incurred, while ignoring all costs which Telstra has efficiently incurred in the past, which can be avoided by new entrants going forward.<sup>246</sup>

Telstra submits that the ACCC has preferred a particular estimation of costs (historic versus current) depending on which cost estimate is lower. It also considers that the ACCC's approach in its Draft Decision where it changed its approach to costing creates regulatory risk that is unnecessary and prejudicial to Telstra's legitimate interests.<sup>247</sup>

Adam Internet et al indicate that Telstra's proposed cost of capital is overestimated and would result in Telstra recovering more than its legitimate business interests. Further, they reiterate that Telstra should not be able to recover costs that exceed its actual historically incurred costs.<sup>248</sup>

## **8.6.2 ACCC view**

Consideration of an access provider's legitimate business interests means assessing the effect that the Proposed Monthly Charge has on the access provider's ability to recover costs from its investments and achieve a normal risk-adjusted rate of return.

The ACCC notes that access pricing must have regard to Telstra's legitimate commercial interests. This is interpreted as allowing Telstra to cover its efficient costs from the totality of its retail and wholesale pricing, having regard to its ability to exploit economies of scale and scope. Therefore, in the context of assessing this criterion, the ACCC does not agree with Telstra's statement that historic costs are irrelevant to the consideration of its legitimate business interests. Under paragraph 152AH(1)(b) of the TPA, the ACCC must consider whether the legitimate business interests of the access provider are being met, not those of a new entrant. In this regard, the ACCC considers that Telstra's assertion that the costs of the efficient new entrant should be estimated to determine whether this criterion is satisfied is incorrect.

The ACCC clarifies that, whilst it has sought historic and current cost information from Telstra, it has not selectively applied these cost bases depending on which cost estimate is lower. Rather, for the purposes of estimating the efficient costs of providing the ULLS in the long run, the ACCC has indicated a preference for current

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<sup>245</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 39.

<sup>246</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 39.

<sup>247</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 40.

<sup>248</sup> Adam Internet et al, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 5.

cost information. It will also have regard to actualities of network deployment given the hypothetical network assumption can lead to unrealistic deployment outcomes. However, when the ACCC is required to assess an undertaking according to specific legislative criteria such as considering the legitimate business interests of the access provider and the 'direct costs of providing access to the declared service',<sup>249</sup> it uses the appropriate form of information, which is historic cost information of the access provider.

Therefore, in assessing the Proposed Monthly Charge against the access provider's legitimate business interests, what must be considered is whether, given the current scale and scope of the CAN, Telstra is able to recover the costs of operating its existing network and earn a return on its overall investment in the network with a \$30 charge. The ACCC considers that the Proposed Monthly Charge would result in Telstra recovering more than its legitimate business interests and therefore is not reasonable.

The ACCC notes that the RAF historical data details the actual capital costs Telstra has incurred in building the CAN. Therefore, the ACCC has used this data to consider whether Telstra's legitimate business interests may be recovered with a \$30 ULLS Charge. The ACCC notes that its estimate of Telstra's direct costs of providing the ULLS using RAF historical data - as set out previously in table 4 and under section 8.1.2 - shows that Telstra's Proposed Monthly Charge of \$30 will allow it to over recover the direct costs of providing the ULLS and that it would be able to recover these costs under a lower monthly charge. The ACCC notes that this result was achieved even when it applied a pre-tax WACC value of 9.64 per cent (rather than the pre-tax WACC value in the RAF of 16.49 per cent). Therefore, the ACCC considers that the Proposed Monthly Charge would result in Telstra recovering more than its legitimate business interests and therefore is not reasonable.

The ACCC considers that the inclusion of surface barriers (eg. concrete footpaths and roads) in the TEA model as a component of the cost of supplying the ULLS, would result in a price term which would overly compensate Telstra for its investments in facilities used to supply the declared service. The ACCC notes that it considers legitimately incurred surface barrier costs are those involved in actual network build or further augmenting the network. In contrast, the costs of breaking and reinstating surface barriers for maintenance purposes, such as replacing existing cables because of faults and changes in technology, are not costs that the ACCC believes are legitimate costs incurred by Telstra. These costs are already accounted for in operating and maintenance costs and therefore have already been recovered. The ACCC notes that Telstra's submission in response to its information request of 16 December 2008 sets out the costs of breaking and reinstating different surface types over the last nine years.<sup>250</sup> However, it is impossible to distinguish whether these costs were incurred as part of the network build or as an operating and maintenance cost.

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<sup>249</sup> Section 152AH(1) *Trade Practices Act 1974*.

<sup>250</sup> Telstra, *Telstra's Band 2 ULLS Undertaking - Responses to s152BT information requests and further submissions*, Letter of 13 March 2009.

Further, the ACCC notes that witness statements provided by Telstra as supporting evidence indicates that historic costs involved in the breaking and restating of surface barriers did occur due to replacing copper cables whether for technological or faulty cable reasons. This suggests that the costs of breaking and re-instating surface barriers is likely to be overestimated, which would overcompensate Telstra for costs that it did not incur.

The ACCC also notes that as the RAF historic data sets out the costs Telstra has incurred in building and maintaining the CAN, costs Telstra incurred when breaking and reinstating surfaces are also included. As noted above, the ACCC has already assessed that Telstra would over recover the direct costs of providing the ULLS with a Proposed Monthly Charge of \$30, and could do so with a lower monthly charge.

The ACCC also notes that the access price should be set at a level that will allow recovery of the cost of the CAN going forward. The ACCC considers that it highly unlikely that the most significant CAN cost - the trenching costs of the CAN - in the present day will be significantly different from historic values. Therefore, as the ACCC has assessed Telstra's CAN historic costs can be recovered by a significant margin under a \$30 ULLS charge, its cost going forward are also likely to be recovered as well under such a charge.

The ACCC notes that when another set of inputs are used in the TEA model which the ACCC considers reflect the efficient costs of supplying the ULLS, including removing costs for the breaking and re-instatement of concrete and making adjustments to Telstra's default WACC value, the resulting estimate indicates that a price term based on Telstra's TEA model estimate is likely to overcompensate Telstra for the costs it has incurred in providing the ULLS. The ACCC also observes that international benchmarking of unbundled local loop prices with the Proposed Monthly Charge shows that the \$30 is significantly higher than other comparable countries. Even accounting for country specific factors, the network deployment costs of Telstra's CAN cannot be so significantly higher than other countries that the Proposed Monthly Charge would or could be justified.

In conclusion, the ACCC considers that the 2008 Undertaking would allow Telstra to recover more than its legitimate business interests and its investment in facilities used to supply the declared service and therefore is not reasonable.

## **8.7 The interests of persons who have rights to use the declared service concerned**

Paragraph 152AH(1)(c) of the TPA requires the ACCC to consider the interests of persons who have rights to use the declared service concerned. In this instance, this requires considering the interests of persons who have rights to use the ULLS.

### **8.7.1 Submissions**

In response to the ACCC's Draft Decision, Telstra submits that this criterion is fulfilled when:

...end users and persons who have a right to use ULLS benefit from the same outcomes (ULLS price) that they would obtain were the market in which ULLS was supplied was competitive and ULLS was not declared. This is the competitive market outcome.<sup>251</sup>

Further, Telstra submits that:

the interests of those who have a right to use ULLS do not extend to receiving access at prices below those which they could expect in a competitive market<sup>252</sup>

Accordingly, Telstra submits that ‘the TSLRIC+ of an efficient new entrant approximates the outcome that would occur in a competitive market and, therefore, promotes the interest[s] of persons who have rights to use the ULLS’.<sup>253</sup>

Telstra further submits that this criterion cannot be used to substantiate prices that have ‘been set below the forward looking cost of supply through regulatory intervention.’<sup>254</sup>

Adam Internet et al submits that it agrees with the ACCC’s view in the 2008 Draft Decision that the interests of access seekers are served by a price which enables them to compete in downstream markets. Adam Internet et al further submits that given the Proposed Monthly Charge is significantly higher than the existing ULLS price, it may ‘distort the competitive process and harm the access seekers’ interests... [and] would also not promote the LTIE.’<sup>255</sup>

### 8.7.2 ACCC view

The ACCC considers that the interests of persons who have a right to use the ULLS, i.e. access seekers, are served by an access price that enables them to compete on their merits (that is, on the basis of their own efficiency) in downstream markets. Therefore, the ACCC acknowledges Telstra’s submission that this criterion is met by a price term that mimics a competitive market environment. The ACCC notes that in a competitive market environment, competitive tensions exist between competitors. To ensure competitive neutrality and allow access seekers to compete, it is necessary that there is equivalency in wholesale provisioning costs. This ensures all efficient competitors are placed in a position where they are able to retain efficient gains when competing on their respective merits.

Access seekers who have rights to use a declared service will, in general, use that service as an input to supply carriage services, or a service supplied by means of carriage services, to end-users. In the ACCC’s view, these persons have an interest in being able to compete for the custom of end-users on the basis of their relative technical and commercial merits. Their ability to compete in the supply of a service in a dependent market should be based on the cost or quality of their service relative to their competitors. Accordingly, the ACCC considers terms and conditions that favour

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<sup>251</sup> Telstra, *Response to the ACCC’s Draft Decision*, 23 December 2008, p. 40.

<sup>252</sup> Telstra, *Response to the ACCC’s Draft Decision*, 23 December 2008, p. 40.

<sup>253</sup> Telstra, *Response to the ACCC’s Draft Decision*, 23 December 2008, p. 40.

<sup>254</sup> Telstra, *Response to the ACCC’s Draft Decision*, 23 December 2008, p. 41.

<sup>255</sup> Adam et al, *Response to the ACCC’s Draft Decision*, 23 December 2008, p. 5.

one or more service providers over others and thereby distort the competitive process may prevent this from occurring and consequently harm those interests.

As discussed above, the ACCC considers that the Proposed Monthly Charge is an overestimation of the efficient costs of providing the ULLS. Such a charge will not be in the interests of access seekers as it will not send efficient build/buy signals. The ACCC considers the interests of access seekers are best served by a charge that provides efficient signals, allowing them to decide when to compete via reselling, installing their own DSLAM technology, or investing in alternative infrastructure or further augmenting existing network infrastructure. The ACCC considers that the Proposed Monthly Charge would, if accepted, distort these signals.

In addition, given the trends in ULLS prices, the ACCC considers that it is not in the interests of access seekers that ULLS prices substantially increase to a level that overestimates the efficient costs of providing the ULLS. Such a conclusion may be supported by the preliminary results of the Analysys Cost Model, which indicates that the TEA model estimates may be higher than the efficient cost of providing the ULLS.

The ACCC also considers that Telstra's implementation of TSLRIC+ results in cost estimates that would overcompensate Telstra. These findings favour Telstra over others which would distort the competitive process and consequently harm access seekers' interests.

## **8.8 The operational and technical requirements necessary for the safe and reliable operation of a carriage service, a telecommunications network or a facility**

In determining the extent to which an undertaking is reasonable, paragraph 152AH(1)(e) of the TPA requires the ACCC to consider the operational and technical requirements necessary for the safe and reliable operation of a carriage service, a telecommunications network or a facility.

The ACCC's Draft Decision stated that this criterion requires considering the effect of the proposed undertaking on the ability to ensure a carriage service, telecommunications network or facility is operated in a safe and reliable manner.

The ACCC understands this criterion to mean that an access price should not lead to arrangements between access providers and access seekers that will encourage the unsafe or unreliable operation of a carriage service, telecommunications network or facility.<sup>256</sup>

In the long-run, access prices that are persistently below the efficient costs of supplying a service can, indirectly, compromise the safe and reliable supply of the service. The ACCC considers that the Proposed Monthly Charge is not below the efficient costs of supplying the ULLS and is, in fact, above the efficient costs of supplying the ULLS in the long run.

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<sup>256</sup> ACCC, *Access Pricing Principles – Telecommunications*, July 1997, p. 10.

Therefore, the ACCC does not consider that 2008 Undertaking would have a material effect on the operational and technical requirements necessary for the safe and reliable operation of telecommunications services.

## 8.9 Direct costs of providing access to the declared services

In determining the extent to which an undertaking is reasonable, paragraph 152AH(1)(d) of the TPA requires regard to be had to the direct costs of providing access to the declared service. Direct costs are those costs necessarily incurred in or caused by the provision of access. As stated in the relevant explanatory memorandum:

...the references here ... the 'direct' costs of providing access are intended to preclude arguments that the provider should be reimbursed by the third party seeking access for consequential costs which the provider may incur as a result of increased competition in an upstream or downstream market.<sup>257</sup>

This requires that an access price not be inflated to recover any profits that the access provider (or any other party) may lose in a dependent market as a result of the provision of access.

The direct costs criterion also implies that, at a minimum, an access price should cover the direct incremental costs incurred in providing access. It also implies that the access price should not exceed the stand-alone costs of providing access.<sup>258</sup>

In its Draft Decision, the ACCC noted that it had not been provided with evidence of Telstra's direct costs of providing access to the ULLS in Band 2.<sup>259</sup> Therefore, to assess the 2008 Undertaking against this criterion, in the Draft Decision, the ACCC examined evidence from international benchmarks and Telecommunications Industry Regulatory Accounting Framework (RAF) historical data.<sup>260</sup> The ACCC's preliminary view was that the international benchmarking analysis suggested that overseas operators are able to provide similar unconditioned local loop services at much lower prices, that is, they were able to provide these services at a much lower direct cost that is estimated by the TEA model.

The ACCC's RAF analysis from its Draft Decision indicated that the Proposed Monthly Charge of \$30 would allow Telstra to over-recover the historic costs of providing the ULLS. The ACCC therefore considers that Telstra could recover these costs under a lower monthly charge.<sup>261</sup>

### 8.9.1 Submissions

Telstra submits that the Proposed Monthly Charge is consistent with the ACCC's interpretation of the Explanatory Memorandum as the Proposed Monthly Charge is

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<sup>257</sup> *Trade Practices Amendment (Telecommunications) Bill 1996 Explanatory Memorandum*, p. 46.

<sup>258</sup> Stand-alone costs are the costs an access provider will incur providing a service assuming the access provider produced no other services.

<sup>259</sup> ACCC, *2008 ACCC Draft Decision*, November 2008, p. 54.

<sup>260</sup> ACCC, *2008 ACCC Draft Decision*, November 2008, p. 54.

<sup>261</sup> ACCC, *2008 ACCC Draft Decision*, November 2008, p. 55.

below the stand-alone costs of providing access because only a proportion of indirect costs are allocated to the ULLS.<sup>262</sup>

Telstra submits that the analysis in the Draft Decision is inconsistent with its own interpretation of this criterion as it relies on two sets of material—international benchmarking and RAF data—which:

...incorrectly asserts that the price proposed in Telstra's Undertaking exceeds the level necessary to ensure that Telstra would be able to recover the direct costs of providing ULLS.<sup>263</sup>

Telstra submits that the ACCC's international benchmarking analysis is flawed as:

- its use is inconsistent with the ACCC's previously expressed views on the use of benchmarking;
- international benchmarks do not compare the direct costs, rather they compare the prices which each operator charges;
- regulatory regimes between countries and their objectives differ, thereby making comparisons difficult;
- it is incorrect to assume that overseas regulators have had regard to direct costs in the same way that the ACCC does and there is no evidence that overseas regulators determine the direct costs of ULLS provisioning in their own countries; and
- there is no evidence to suggest that the costs used are consistent with the ACCC's own interpretation of the direct costs criterion.

Telstra raise the following concerns with the ACCC's analysis of the RAF when assessing the 2008 Undertaking against the direct costs criterion:

- the RAF values assets at their written down value rather than their economic value; and
- the RAF values a different mix of types of assets and network design than would be used by an efficient new entrant.<sup>264</sup>

Telstra submits that the RAF is a measure of the written down historic/embedded cost of supplying the CAN. Telstra also submits that RAF data does not provide any standalone or incremental costs of providing the CAN.<sup>265</sup>

Telstra notes that in the past they have sought to use historic ULLS costs to assess the reasonableness of an Undertaking price. Telstra submits that the Australian

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<sup>262</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 41.

<sup>263</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 42.

<sup>264</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 42.

<sup>265</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 43.

Competition Tribunal has rejected the use of historical costs as a basis of assessing the reasonableness of ULLS costs.<sup>266</sup> Telstra also submits that the use of historic costs derived from the RAF is inconsistent with the 2002 ULLS pricing principles. Telstra considers the ACCC's use of Telstra's historic cost is inconsistent with its own interpretation of the direct cost criterion.<sup>267</sup>

Telstra indicates in its submission dated 17 February 2009, that:<sup>268</sup>

- the ACCC has calculated the return on capital associated with only those CAN assets reported in the RAF. For example, some CAN assets were purchased prior to the period for which the information contained in the RAF relates. Thus, the RAF does not reflect the full capital costs of Telstra's CAN;
- the ACCC has used Ovum's pre-tax WACC of 9.22 per cent, which is substantially below even the ACCC's pre-tax WACC of 11.35 per cent for the 2008/09 year;
- the ACCC's analysis excludes any contribution to indirect costs. Since these later costs are reasonably included in a cost-based price, a comparison between the ACCC's incomplete calculation of historic costs and the \$30 price term in the 2008 Undertaking would not be like-for-like;
- there are no ULLS specific costs included in the ACCC's calculation. These should be added to the ACCC's calculation of historic costs to compare against the \$30 monthly charge in Telstra's 2008 Undertaking;
- the ACCC's analysis excludes radio bearer equipment asset costs, but divided the total non-radio costs by all SIOs, including radio SIOs when calculating the unit cost. This will understate the unit cost of non-radio CAN SIOs; and
- for the calculation of the historic O&M and depreciation costs the ACCC's analysis is linked to the current cost accounts. While this has no impact on the analysis as put forward by the ACCC, it is likely to if the ACCC had properly included indirect costs. For consistency, the ACCC's analysis should link to the historic cost accounts.

### 8.9.2 ACCC view

The ACCC derivation of Telstra's direct costs of providing the ULLS is provided in table 4.

The ACCC notes that Telstra seems to have misunderstood the reasoning behind the analysis it has undertaken in assessing the direct costs criterion, and the interpretation of this criterion more generally.

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<sup>266</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 43.

<sup>267</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 43.

<sup>268</sup> Telstra, letter to ACCC, 17 February 2009.

When assessing the 2008 Undertaking under this criterion, the ACCC must consider whether the access provider recovers the direct costs of providing the ULLS. Telstra's comment that the RAF analysis is irrelevant is correct. Telstra have misunderstood the reason for the ACCC's RAF analysis. The ACCC notes that the RAF analysis was designed to estimate Telstra's historic costs of providing the ULLS to estimate the direct incremental costs incurred in providing access. This direct cost is then compared to the Proposed Monthly Charge to see whether the \$30 charge would allow Telstra to recover the historic cost of Telstra's CAN.

The ACCC notes that Telstra's implementation of TSLRIC+ does not provide an appropriate measure to estimate Telstra's direct costs of providing ULLS access because, as stated by Telstra,<sup>269</sup> the TEA model seeks to measure the costs that may be faced by a new entrant seeking to replicate Telstra's access network. In this regard, Telstra's implementation of TSLRIC+ does not provide a measure of Telstra's direct costs of providing access to the ULLS.

In the Draft Decision, the ACCC noted that Telstra did not supply information on the direct costs of providing the ULLS; therefore, the ACCC relied on RAF data. Despite this, Telstra did not supply direct cost information in response to the Draft Decision. Further, the ACCC notes that Telstra has indicated in Telstra's Response to the ACCC's Draft Decision that the Proposed Monthly Charge is below the stand-alone cost of providing access and that its direct costs are between the direct incremental cost and the standalone cost of providing the ULLS,<sup>270</sup> but, again, has not provided any evidence to substantiate that claim.

With no submitted information from Telstra about the direct incremental costs of providing the ULLS, the ACCC has continued to rely on other information in the Final Decision. The ACCC notes Telstra's concerns with the use of international benchmarking and comments made the Australian Competition Tribunal<sup>271</sup> in relation to the adjustments required before international comparisons can be made. As set out in section 7, the ACCC has undertaken additional analysis using international benchmarks. The results continue to demonstrate that services in comparable countries can be offered at a price lower than that proposed by Telstra, suggesting that their direct costs may also be lower.

Therefore, in this Final Decision, the ACCC continues to consider it useful to examine Telstra's returns under the RAF in order to reach a view on the possible quantum of Telstra's direct costs of providing access to the ULLS. However, it notes that the conclusions that can be drawn from this examination are necessarily limited, as:

- the RAF data concern Telstra's entire existing network (bands 1-4), while the 2008 Undertaking concerns supply of the ULLS in Band 2 only; further, the

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<sup>269</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 32.

<sup>270</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 41.

<sup>271</sup> Australian Competition Tribunal, Application by Optus Mobile Pty Limited & Optus Networks Pty Limited, [2006] ACompT 8.

RAF data cannot be easily broken into bands in order to make a like-for-like comparison; and

- the source data represents historic practices, and does not reflect productivity improvements or other changes; for example, in input prices, reasonably expected for the period of the undertakings.

That said, the ACCC concludes that this examination lends support to the view that Telstra's likely direct costs of providing access to the ULLS in Band 2 for the proposed period of the 2008 Undertaking will be significantly less than what it will recover if Telstra charges the Proposed Monthly Charge for its supply of the ULLS.

In response to Telstra's submission of 17 February 2009, the ACCC notes that it has recalculated its estimates of Telstra's direct costs using RAF data, including using a pre-tax WACC value of 9.64 per cent (having regard to all submissions received), adding indirect costs and a specific charge to the direct cost estimates. Even with these changes - which increase the estimate of direct costs - the ACCC still finds that Telstra over recovers the cost of providing the ULLS with a Proposed Monthly Charge of \$30. The ACCC notes Telstra's comment that the RAF does not take account of the full capital costs of the CAN. The ACCC considers that RAF historical data provides valid material for the calculation of direct costs even for assets with long lives as the RAF would include its written down value. The ACCC also notes that Telstra has not provided alternate data or provided its own direct costs estimates of providing the ULLS.

Therefore, the ACCC considers that, based on the RAF analysis above and results from the international benchmarking, the ACCC's final conclusion is that the Proposed Monthly Charge of \$30 would allow Telstra to over-recover the direct costs of providing the ULLS, and that it could recover its direct costs under a lower monthly charge.

## **8.10 The economically efficient operation of a carriage service, a telecommunications network or a facility**

In determining whether an undertaking is reasonable, paragraph 152AH(1)(f) of the TPA requires the ACCC to consider the economically efficient operation of a carriage service, telecommunications network or a facility. The 2008 Draft Decision indicated that this criterion embodies the concept of economic efficiency and considered whether Telstra's Undertaking promotes this concept.

### **8.10.1 Submissions**

In response to the 2008 Draft Decision, Telstra submits that the '[p]rices based on the TSLRIC+ of an efficient new entrant reflect the efficient forward-looking costs of the service and, therefore, meet this criterion.'<sup>272</sup>

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<sup>272</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 43.

### 8.10.2 ACCC view

In the ACCC's view, the phrase 'economically efficient operation' embodies the concept of economic efficiency set out in the analysis of the LTIE. These include productive efficiency, allocative efficiency and dynamic efficiency. The ACCC has already had regard to these matters when considering the LTIE.

The ACCC considers that an access price should encourage access providers to select the least-cost method of providing the service and provide those services most highly valued by access seekers. Accordingly, the ACCC considers that this concept is not necessarily limited to the operation of carriage services, networks and facilities by the carrier or carriage service provider supplying the declared service, but could also include those operated by others (for example, service providers using the declared service).

To consider this matter in assessing an undertaking, the ACCC may consider whether particular terms and conditions enable a carriage service, telecommunications network or facility to be operated in an efficient manner. This may involve, for example, examining whether they allow for the carrier or carriage service provider supplying the declared service to recover the efficient costs of operating and maintaining the infrastructure used to supply the declared service under consideration.

In general, there is likely to be considerable overlap between the matters that the ACCC takes into account in considering the LTIE and its consideration of this criterion.<sup>273</sup>

In summary, the ACCC considers that the Proposed Monthly Charge is based on an overestimation of the efficient costs of providing the ULLS in the long run. Accordingly, the ACCC considers that the Proposed Monthly Charge will result in inefficient build/buy signals, which may discourage access seekers from making efficient investment decisions regarding building new or further augmenting ULLS-based networks. Therefore the ACCC considers that the Proposed Monthly Charge would not encourage the economically efficient operation of a carriage service, a telecommunications facility or a network facility.

## 8.11 Conclusion

On balance, after assessment against the legislative criteria the ACCC considers the 2008 Undertaking:

- is unlikely to promote the LTIE, as it will not promote competition and will not encourage the economically efficient use of, and investment in infrastructure;

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<sup>273</sup> In considering whether particular terms and conditions will promote the long-term interests of end-users, the ACCC must have regard to their likely impact on the economically efficient use of, and economically efficient investment in, the infrastructure by which carriage services and services provided by means of carriage services are supplied. Clearly there is overlap between the phrase 'economically efficient use of ...' in the LTIE criteria and the phrase 'economically efficient operation of ...' in this criterion.

- will result in Telstra recovering more than is necessary to promote Telstra's legitimate business interests;
- will harm the interest of access seekers and persons who have rights to use the service;
- contains price terms which will exceed the direct costs of providing access;
- does not have a material effect on the operational and technical requirements necessary for the safe and reliable operation of telecommunications services; and
- is not likely to facilitate the economically efficient operation of the ULLS.

Accordingly, the ACCC is not satisfied that the terms and conditions specified in the 2008 Undertaking are reasonable under sections 152AH and 152BV of the TPA and has decided to reject the undertaking under subsection 152BU(2) of the TPA.



## **Appendix A The ACCC's approach to assessment**

### **A.1 Criteria for assessment: reasonableness of terms and conditions**

Paragraph 152BV(2)(d) of the TPA provides that the ACCC must not accept the 2008 Undertaking unless the ACCC is satisfied that the terms and conditions specified in the 2008 Undertaking are reasonable.

In forming a view about whether particular terms and conditions of the 2008 Undertaking are reasonable, the ACCC must have regard to the following matters set out in section 152AH of the TPA:

- whether the terms and conditions promote the LTIE of carriage services or of services supplied by means of carriage services;
- the legitimate business interests of Telstra, and its investment in facilities used to supply the declared services;
- the interests of all persons who have rights to use the declared services;
- the direct costs of providing access to the declared services;
- the operational and technical requirements necessary for the safe and reliable operation of a carriage service, a telecommunications network or facility; and
- the economically efficient operation of a carriage service, a telecommunications network or a facility.

In addition, the ACCC may consider any other relevant matter.<sup>274</sup>

In conducting an assessment under these criteria, the ACCC will apply these criteria in accordance with the interpretations set out in Chapter 4 above.

In Appendix B, the matters to which regard must be had are considered, either directly or indirectly. Where a matter is considered not to be relevant, the ACCC has included express statements to that effect.

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<sup>274</sup> Section 152AH does not use the expression 'any other relevant matter'. Rather, subsection 152AH(2) states that the matters listed in subsection 152AH(1) do not limit the matters to which the ACCC may have regard. Thus, the ACCC may consider any other relevant matter.

## **Appendix B Reasonableness of Telstra's implementation of TSLRIC+**

This Appendix contains the ACCC's assessment of whether Telstra's implementation of TSLRIC+—Telstra's preferred default parameters and underlying network design—are reasonable in accordance with the range of matters set out in subsection 152AH(1) of the TPA and detailed in section 8 of this paper.

The ACCC identified the following key issues in its 2008 Draft Decision:

- ability to properly assess the TEA model;
- network design and engineering rules;
- cost valuation;
- trenching costs;
- trench sharing;
- operations and maintenance and indirect cost factors;
- cost of capital;
- depreciation.

The ACCC's assessment on each of these issues is discussed, in turn, below.

### **B.1 Ability to properly assess the TEA model**

If the TEA model is to be accepted as a basis for pricing the ULLS, the ACCC considers it necessary that it be subject to scrutiny by the ACCC and interested parties. In considering the ability of interested parties to assess the TEA model, there are two key issues to consider:

- whether the model is transparent and user friendly, allowing the model and assumptions to be tested; and
- whether users have had sufficient access to the model to adequately review it.

#### **Submissions**

##### *Telstra*

Telstra submits that the documentation provided with the TEA model is comprehensive, very detailed and more than adequate to evaluate the TEA model.<sup>275</sup>

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<sup>275</sup> Telstra, *Response to the ACCC's Discussion Paper*, 12 August 2008, pp. 5-6.

Telstra submits that the Microsoft Excel spreadsheets used in the TEA model enable users a higher degree of flexibility in testing alternative input values. Telstra also submits that the results of the TEA model are consistent with its experience, economic intuition and financial principles and the related documentation identifies all parameters required to assess the cost of ULLS.

Telstra notes that version 1.0 of the TEA model, submitted on 3 March 2008, contains software errors that were fixed in version 1.1 of the model, which was submitted on 6 August 2008.<sup>276</sup> Following Ovum's report commissioned by the ACCC, Telstra submitted a revised version of the TEA model—version 1.2—on 10 September 2008. Telstra submitted a further revision of the TEA model—version 1.3—on 22 January 2009.

Telstra submits that it has sought to address concerns about a lack of transparency in the pre-processing work in the TEA model by submitting documentation explaining the process by which the TEA model database was derived.<sup>277</sup> Telstra also submits that modelling a single network architecture does not limit the ability to test efficiency, as the best way to measure the efficiency of the TEA model is to compare it to Telstra's actual network.<sup>278</sup>

Telstra submits that its confidentiality arrangements are clearly documented, and comply with expectations set out by the ACCC.<sup>279</sup> Telstra also submits that it has not declined any request from Optus for an individual to gain access to the TEA model.<sup>280</sup> In total, Telstra states that 18 individuals, excluding Ovum, have gained access to the full version of the TEA model, and that, other than making broad allegations without substantiation, no access seeker has stated how the confidentiality arrangements have hindered their ability to review the TEA model.<sup>281</sup>

#### *Other parties*

Optus submits that Telstra's confidentiality arrangements have been onerous and confusing and as a result, Optus has not had reasonable access to the TEA model and related information.<sup>282</sup> Optus submits that an offer from Telstra to allow access to a limited version of the TEA model to a single employee was inadequate, as it did not allow for access to a full version of the model, and thus would not have allowed full communication between Optus and its external consultants.<sup>283</sup> It notes that Telstra has not made the TEA model and related information available to Optus in a manner which allows full and timely analysis, and comments that the degree of scrutiny of the model by access seekers and other parties has been limited by the terms of Telstra's

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<sup>276</sup> Telstra, *Response to the ACCC's Discussion Paper*, 12 August 2008, p. 7.

<sup>277</sup> Telstra, *Telstra's Band 2 ULLS Undertaking letter* – 18 November 2008, p. 2.

<sup>278</sup> Telstra, *Response to access seeker submissions*, 18 November 2008, p. 23.

<sup>279</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, pp. 45 – 46.

<sup>280</sup> Telstra, *Response to access seeker submissions*, 18 November 2008, p. 28.

<sup>281</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 52.

<sup>282</sup> Optus, *Response to the ACCC's Discussion Paper*, August 2008, p. 23.

<sup>283</sup> Optus, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 17.

confidentiality arrangements. Adam Internet et al supports the ACCC's preliminary view that Telstra's confidentiality arrangements have adversely affected interested parties' ability to properly assess the TEA model.<sup>284</sup>

Optus also submits that some of the most important aspects of the TEA model are not transparent or able to be modified by the user.<sup>285</sup> Optus observes that the TEA model appears to use a pre-processed network database file. As a result, users may vary only a limited range of components of the model, and cannot vary network architecture.<sup>286</sup> Furthermore, Optus submits that it is not possible to test the level of efficiency in the design, as the actual locations of network structure points are not provided.<sup>287</sup> Further, Optus notes that the ACCC has identified a number of basic errors in the TEA model, and that Telstra has had to update the model several times to address these.<sup>288</sup>

In light of these views, Optus submits that the ACCC must place less weight on the model in setting ULLS prices to the extent that the ACCC should not have regard to the TEA model.<sup>289</sup> Optus further submits that the ACCC should place limited reliance on any confidential evidence supplied by Telstra, as access seekers have not had a reasonable opportunity to assess such evidence.<sup>290</sup>

In a report prepared for Optus, Network Strategies states that the TEA model is not as transparent as it would usually expect in a regulatory model.<sup>291</sup> Marsden Jacob Associates (MJA) found the TEA model to be more transparent than its predecessors in certain areas (such as the use of MS Excel and MS Access), but less transparent in other areas (such as the reliance on detailed 'real' Telstra data and the lack of information on this data).<sup>292</sup> All external advisors—MJA (commissioned by the CCC), Network Strategies (commissioned by Optus) and Ovum (commissioned by ACCC) - considered the TEA model user manual and model documentation to be of reasonable quality.<sup>293</sup> However, Ovum noted a number of inconsistencies between the model documentation and the model implementation.<sup>294</sup> It also notes that there is no documentation for the Access database and suggest that this should be made available.

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<sup>284</sup> Adam Internet et al, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 1.

<sup>285</sup> Optus, *Response to the ACCC's Draft Decision*, 23 December 2008, pp 30 – 31.

<sup>286</sup> Optus, *Response to the ACCC's Discussion Paper*, August 2008, pp. 25 - 26.

<sup>287</sup> Optus, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 16.

<sup>288</sup> Optus, *Response to the ACCC's Discussion Paper*, August 2008, pp. 23 - 24.

<sup>289</sup> Optus, *Response to the ACCC's Discussion Paper*, August 2008, p. 24.

<sup>290</sup> Optus, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 17.

<sup>291</sup> Network Strategies, *Report for Optus*, 5 September 2008, pp. 13 – 14.

<sup>292</sup> Marsden Jacob Associates, *Review of the TEA model*, 12 August 2008, p. 4.

<sup>293</sup> Marsden Jacob Associates, *Review of the TEA model*, 12 August 2008, p. 4; Network Strategies, *Report for Optus* 2008, pp. ii-iii, 13-16; Ovum, *Operability Review*, 6 August 2008, p. 4.

<sup>294</sup> Ovum, *TEA model (v1.0) operability review*, 6 August 2008, p. 4.

In regard to the flexibility of the model, Network Strategies notes that it is not possible to vary the network architecture.<sup>295</sup> It also took the view that some of the inputs and assumptions in the TEA model are not visible and cannot be checked because of the way pre-modelling data has been incorporated into the TEA model network database. Network Strategies clarified this view in response to the ACCC's Draft Decision, stating that its concerns related to the inability to see or vary network topology, cable routes and customer locations.<sup>296</sup> In relation to the engineering and costing modules, Network Strategies acknowledges that the data in these modules is both visible and modifiable.<sup>297</sup>

Network Strategies also states that the TEA model contains the results of calculations that are performed outside the TEA model. Given that several steps in the modelling process are not included, these calculations are unable to be checked.<sup>298</sup> For example, Network Strategies note that the determination of DA areas has not been explained, and that this calculation, through the calculation of line density, has a large effect on cost. Network Strategies states that this process is not transparent.<sup>299</sup> Network Strategies also asserts that, whilst Telstra has submitted material explaining the route optimisation process, the actual calculations and data are still not available, and thus not verifiable.<sup>300</sup>

Ovum took the view that the response to changes in key inputs in the model is consistent with its experience and financial principles.<sup>301</sup> Network Strategies also took the same view.<sup>302</sup> Early versions of the TEA model contained errors such as missing links where some inputs into the model had been hard coded and changes to these inputs had no impact on the monthly ULLS cost.<sup>303</sup> Telstra sought to rectify these missing links in version 1.2 of the TEA model.<sup>304</sup> Ovum also observes that the TEA model user interface does not have a comprehensive means of error checking inputs, which can lead to misleading results.<sup>305</sup>

The ACCC notes that Ovum has completed two separate reviews of the TEA model, and that the latest review takes into account all updates to the model including those in version 1.3.

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<sup>295</sup> Network Strategies, *Report for Optus*, 5 September 2008, pp. ii-iii, 13-16.

<sup>296</sup> Network Strategies, *Draft decision issues paper*, 2 December 2008, p. 2.

<sup>297</sup> Network Strategies, *Draft decision issues paper*, 2 December 2008, p. 2.

<sup>298</sup> Network Strategies, *Additional comments on the TEA model*, 19 December 2008, p. 6.

<sup>299</sup> Network Strategies, *Additional comments on the TEA model*, 19 December 2008, pp. 8 – 10.

<sup>300</sup> Network Strategies, *Additional comments on the TEA model*, 19 December 2008, p.18.

<sup>301</sup> Ovum, *TEA model (v1.0) operability review*, 6 August 2008, p. 4.

<sup>302</sup> Network Strategies, *Report for Optus*, 5 September 2008, pp. ii-iii, 13-16.

<sup>303</sup> Ovum, *Economic Review, A report to the ACCC*, 6 August 2008, pp. 21-22, 51-52; Ovum, *TEA model (v1.0) operability review*, 6 August 2008, pp. 29-30.

<sup>304</sup> Telstra, *Modifications to the TEA model (v 1.2)*, 10 September 2008, p. 3.

<sup>305</sup> Ovum, *TEA model (v1.0) operability review*, 6 August 2008, pp. 8-9.

Ovum also considers that the lack of pre-processing of the cable data in the input dataset is a serious concern as it results in more cable and conduit being placed than is necessary. This design approach is not optimal and a formal redesign of the data would be beneficial.<sup>306</sup>

Network Strategies notes that the TEA model does not provide any information about the actual locations of cable routes and therefore there is no way of verifying that the routes used in the model are indeed efficient.<sup>307</sup> Ovum also states that it cannot verify Telstra's assertion that DAs do not overlap, as access to geographical cable data is not available.<sup>308</sup>

### **ACCC view**

In assessing the degree that the TEA model allows for proper scrutiny of model assumptions, there are two key issues to consider:

- whether the cost model possesses good model features to allow the model to be tested. In the 2008 Discussion Paper, the ACCC noted that the cost model must have the following features:
  - be sufficiently transparent so that the ACCC and interested parties can reasonably assess the inputs and outputs at a disaggregated level;
  - allow users to test the assumptions in the model and analyse the impact of different changes in inputs (and architecture) on outputs by understanding the linkages within the model; and
  - allow users to assess how element costs and capital are allocated within services.<sup>309</sup>
- whether users have had sufficient access to the model itself in order to adequately review the model.

On the first issue, the ACCC notes comments by Ovum and other parties that raise issues with the TEA model such as the existence of errors, and missing linkages. The ACCC notes that, in its submission of 10 September 2008, Telstra has sought to address these errors including submitting a revised version of the TEA model.<sup>310</sup>

The ACCC considers that most of the TEA model calculations are well-documented, and that additional material submitted by Telstra in response to access seeker concerns has aided in understanding the pre-modelling work in the model. The ACCC also agrees with Ovum's assessment that the TEA model is generally easy to use.

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<sup>306</sup> Ovum, *TEA model (v1.0) engineering review*, 6 August 2008, pp. 4-5.

<sup>307</sup> Network Strategies, *Report for Optus*, 5 September 2008, p. 30.

<sup>308</sup> Ovum, *Engineering Advisory Note*, 21 January 2009, pp. 5 – 6.

<sup>309</sup> ACCC, *2008 ACCC Discussion Paper*, June 2008, p. 25.

<sup>310</sup> Telstra, Letter to the ACCC, *Modifications in v1.2 of the TEA model* dated 10 September 2008.

Overall, the ACCC considers that it is satisfied with the useability of the TEA model. Compared to its predecessor, the PIE II model, the TEA model is accompanied with documentation that sets out most model calculations, and allows most parameters to be changed and tested. A model that possesses these features may assist parties to better scrutinise the TEA model so that they may make well-informed comments. However, the ACCC notes that these positive features would be undermined if the TEA model does not contain accurate material.

The ACCC agrees with the comments by Network Strategies that the development of the TEA model database lacks transparency. The ACCC acknowledges Telstra's submission of material explaining the process undertaken to derive this database, but without access to the actual data, the accuracy of this document cannot be determined. The ACCC notes that, by looking at the results of this pre-modelling work, Ovum identified implementation errors in the development of the database. Whilst Telstra has since addressed those errors, without access to the pre-modelling work, the ACCC cannot have confidence that the process described by Telstra has been implemented without errors.

Furthermore, the ACCC considers that the inability of users to see or vary the network topology as determined in the development of the database reduces the transparency of the model. The ACCC recognises, however, that the additional functionality required to allow users to control the network design may add to the complexity of the model, and hence increase development costs. The ACCC's view is that, whilst an ideal model would have this functionality, this part of the TEA model is acceptable.

The ACCC acknowledges the difficulties and complexities inherent in any cost modelling exercise. It also understands that any cost model will need to be refined and adjusted to ensure that the model is robust. In this regard, the ACCC understands that it may not be pragmatic for Telstra to release a new version of the TEA model contemporaneously every time a refinement or adjustment to the TEA model is required. However, if Telstra's supporting submissions have errors and/or parties are not informed of any changes to such material, interested parties will be limited in their ability to make well-informed comments.

On the second issue, the ACCC has continuously expressed concerns that Telstra's confidentiality arrangements have made it difficult for interested parties to gain reasonable access to the TEA model in terms of:

- having insufficient time to review the current version of the TEA model (version 1.3 for external advisors/consultants with a non-commercial role and version 1.3.1 for access seekers with a commercial role);
- the confusing nature of the confidentiality arrangements; and
- the limited number of parties with access to the full version of the TEA model.

The ACCC considers that Telstra's confidentiality arrangements have affected interested parties' ability to provide full and timely analysis and comment on the 2008 Undertaking and the TEA model. The ACCC notes that as at 13 January 2009, only 18 individuals (excluding Ovum) have gained access to the full version of the TEA model, and that none of these individuals are employees of an access seeker.

Furthermore, 11 of the 18 individuals with access to the full version of the TEA model are the legal representatives of access seekers, and would likely be limited in their ability to assess the technical aspects of the model. The ACCC therefore considers that Telstra's confidentiality arrangements have unduly restricted the level of discourse between access seekers and their external consultants.

The ACCC notes that access to Telstra's PIE II model, which also contained commercially sensitive information, only required a single level of confidentiality agreement, which allowed access to the full version of the model to both internal and external advisors and consultants.

These restrictive arrangements contribute to the ACCC's ongoing concerns that the model has not been subject to comprehensive external review, which has meant that the ACCC has relied significantly on the findings in Ovum's review of the TEA model as this represents the most comprehensive external review of the TEA model and benchmarking, where appropriate.

The ACCC notes that Optus has also imposed a two-tiered confidentiality arrangement from 22 January 2009, similar to Telstra's, for access to Optus' confidential information. Access to confidential Optus information has been limited to 12 Telstra representatives. Such an arrangement may have restricted Telstra's ability to assess and respond to Optus' submissions.

## **B.2 Network design and engineering rules**

The network design and engineering rules used in the TEA model provide the basis for dimensioning the physical network, and thus for determining the ULLS network cost.

The ACCC notes that, since the publication of its Draft Decision, Telstra has issued an updated version (version 1.3) of the TEA model. Version 1.3, however, does not include any changes to the network design and engineering rules used.

The TEA model uses Telstra's existing network as a starting point from which to model an access network. The following structure points from the existing network are retained by the model:

- the exchange location;
- distribution area boundaries;
- pillar locations;
- customer locations; and
- distribution and main cable routes.

In the TEA model the distribution and main cable routes are an optimised subset of the existing main cables and conduit routes that use existing rights of way from the exchange to the pillars and from the pillar to the customer premises.

### **Submissions**

Submissions received can be categorised into two broad groups:

1. network design and optimisation; and
2. application of engineering practices in the TEA model.

#### ***1. Network design and optimisation***

##### *Telstra*

Telstra submits that a hypothetical TSLRIC+ model does not account for the real world constraints and does not reflect the efficient costs of supply or the actual services supplied.<sup>311</sup> Telstra submits that hypothetical models do have their uses, but only as proxy for the real world in the absence of actual data. Telstra considers there are limitations to TSLRIC+ pricing that do not account for such factors that include unchangeable physical or geographic constraints - which a competitor and/or network builder would face. Telstra considers that the long-run perspective of TSLRIC+

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<sup>311</sup> Telstra, *Response to the ACCC's Discussion Paper*, 12 August 2008, p. 10.

requires the factors of production in the network to be variable while certain geographic or physical constraints are fixed.<sup>312</sup>

Telstra submits that the main and distribution conduit routes in the TEA model are efficient, given the real topographical and demographic constraints of connecting customers to the CAN.<sup>313</sup> Telstra also submitted a comparison of network equipment in the TEA model and Telstra's inventory records showing efficiency savings in the TEA model design.<sup>314</sup> Telstra supplied an updated study of the efficiency of the TEA model in March 2009.<sup>315</sup> In a submission to the ACCC dated 1 April 2009, Telstra resubmits the results of the *Measure of TEA Model Efficiency* document dated 8 September 2008 and notes that it has updated this report to include comparisons against the ACCC's Fixed Network Services Cost Model.<sup>316</sup>

In responding to access seeker submissions, Telstra reiterates that the TEA model gives a more realistic cost estimate than hypothetical models, due to the fact that it places cables in existing rights of way, and doesn't place cables across rivers, lakes, and other natural obstructions.<sup>317</sup> Telstra, however, refutes claims that the TEA model retains existing pit and manhole locations, which are only used as waypoints for cable routes. It contends the model then determines efficient pit and manhole locations for the resulting network. Telstra also submits that Ovum supports the TEA model's approach.<sup>318</sup>

Telstra notes that the cost of the pillars in the TEA model make up less than one per cent of the total cost, whilst approximately 84 per cent of the cost is due to cable and conduit. Thus Telstra concludes that accurately identifying cable and conduit runs is more important than optimising the number and location of pillars.<sup>319</sup> Telstra further submits that virtually every street in Band 2 needs to be trenched regardless, and thus the location of pillars has no impact on overall costs.<sup>320</sup>

Telstra further submits that the ACCC should examine the comments in a report by Network Strategies "with due suspicion, since they provide no quantification or evidence of their assertion."<sup>321</sup>

Dr Robert G. Harris and Dr. William Fitzsimmons, in a statement submitted by Telstra, acknowledge that a more hypothetical approach, which allowed a portion of

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<sup>312</sup> Telstra, *Response to the ACCC's Discussion Paper*, 12 August 2008, p 11.

<sup>313</sup> Telstra, *Response to the ACCC's Discussion Paper*, 12 August 2008, p 14.

<sup>314</sup> Telstra, *TEA model efficiency*, 8 September 2008.

<sup>315</sup> Telstra, *Measure of TEA model efficiency: ULLS Band 2 – Version 2*, 9 March 2009.

<sup>316</sup> Telstra, *Telstra's Ordinary Access Undertaking for the Unconditioned Local Loop Service: Response to Access Seeker Submissions on the ACCC's Draft Decision*, 1 April 2009, p. 21.

<sup>317</sup> Telstra, *Response to access seeker submissions*, 18 November 2008, p. 39.

<sup>318</sup> Telstra, *Response to Ovum*, 5 December 2008, p. 3.

<sup>319</sup> Telstra, *Response to access seeker submissions*, 18 November 2008, p. 42.

<sup>320</sup> Telstra, *Response to Ovum*, 5 December 2008, p. 3.

<sup>321</sup> Telstra, *Response to access seeker submissions*, 1 April 2009, p. 26.

the pillars to be relocated, could possibly realise a lower cost. They conclude, however, that their expectation is that there would be little, if any, reduction in price as a result.<sup>322</sup>

Telstra submits that the TEA model is forward looking in the sense that it uses actual locations of pillars and the existing DA in the network design. Telstra states this ensures that the network is able to model both the Full-Loop ULLS and the Sub-Loop ULLS.<sup>323</sup> Telstra explains that:

...if, for example, a party other than Telstra wins the current Government tender for the NBN, they will need to acquire from Telstra Sub-Loop ULLS at all ESAs to which they intend to roll out a fibre to the node (FTTN) network. The prices for Sub-Loop would need to reflect the actual pillar location as the actual pillar location would be the location where the NBN provider will interconnect with Telstra. At the same time, other parties will acquire Full-Loop ULLS from Telstra. If Sub-Loop ULLS pricing is based on actual pillar placement and Full-Loop ULLS pricing is based on hypothetical pillar placement, then the relative cost of each will be distorted.<sup>324</sup>

Telstra notes that Optus has not provided any evidence to support its view that laying cables down both sides of roads would be more efficient and that it would in fact be four times more expensive.<sup>325</sup> Telstra further submits that it is very difficult to deploy aerial cabling in Australia, and that Optus has previously submitted material on its own CAN which indicates that the use of aerial cable is, in practice, impossible.<sup>326</sup>

Telstra acknowledged the error identified by Ovum in the main network engineering module, which resulted in some structure points in the model having more than one next structure point. Telstra submits that it subsequently fixed this issue in version 1.1 of the TEA model. Telstra disagreed, however, with Ovum's claim of a similar error in the distribution engineering module. Telstra argues that the instances where a single structure point has two next structure points in the distribution network occur when cables served by different pillars (ie. from different DAs) share trench for a period, then diverge to their respective pillars. Telstra submits that allowing cables from distinct DAs to share trench adds flexibility, increases efficiency, and that avoiding it would require laying conduit down both sides of roads that form DA boundaries, hence increasing costs.<sup>327</sup>

Telstra submits that in its statutory assessment of its 2008 Undertaking, it is not the ACCC's task to find an alternative model (hypothetical or otherwise) that could be used to derive a different or the same result as the TEA model.<sup>328</sup>

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<sup>322</sup> Dr. Robert G. Harris and Dr. William Fitzimmons, *Assessment of TEA model*, 4 November 2008, p. 24.

<sup>323</sup> Telstra, *Response to the ACCC's Discussion Paper*, 12 August 2008, p. 14.

<sup>324</sup> Telstra, *Response to the ACCC's Discussion Paper*, 12 August 2008, p. 14.

<sup>325</sup> Telstra, *Response to access seeker submissions*, 18 November 2008, p. 40.

<sup>326</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 November 2008, pp. 62 – 63.

<sup>327</sup> Telstra, *Response to Ovum*, 5 December 2008, pp. 3 – 5.

<sup>328</sup> Telstra, *Response to the ACCC's Discussion Paper*, 12 August 2008, p. 11.

In a report prepared for Telstra, NERA Economic Consulting conclude that the use of a scorched node approach—using existing locations of network nodal points—is standard practice in estimating TSLRIC+. <sup>329</sup> NERA states that a pure scorched node approach does not involve changing the location of nodes, and that the TEA model therefore represents a scorched node model. <sup>330</sup>

NERA further states that the route optimisation process followed by the TEA model might not produce the most economically efficient deployment in some circumstances. This is due to the fact that it only minimises the length of the network, and does not take into account the number of cables required on each link. <sup>331</sup> NERA asserts, however, that trench and duct costs account for the majority of costs in the TEA model, so minimising the conduit length minimises the main cost driver, and thus is a reasonable approach. <sup>332</sup> Furthermore, NERA submits that, as conduit is the greatest cost component in the TEA model, the greatest cost savings from optimisation are likely to occur when a second conduit is triggered. <sup>333</sup> NERA concludes that, as only a single conduit is deployed for 99 per cent of distribution conduit length, the effect of minimising only network length is likely to be minimal. <sup>334</sup> NERA also recognises that minimising cost over network length and cable deployment simultaneously would be extremely complex, and that given these complexities, the TEA model approach is reasonable. <sup>335</sup>

Telstra submits that the price set for the ULLS should reflect the service description definition and technical constraints on that service. <sup>336</sup> Thus, as the ULLS service declaration requires Telstra to provide a copper wire service, the price it is allowed to charge should be for a copper wire service. Modelling other services such as fibre and wireless would not meet the definition of the ULLS. Furthermore, Telstra submits that there are no further technological advancements in unconditioned copper wire expected in the foreseeable future. <sup>337</sup>

### *Other parties*

#### Modelling approach

MJA prepared a report on behalf of the CCC. In that report, MJA notes that the methodology used in the TEA model is to develop a model of access network costs based on inputs from Telstra's existing network, while allowing for a degree of optimisation. <sup>338</sup> MJA states this approach is unlikely to suffer from the assumptions

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<sup>329</sup> NERA, *TSLRIC+ assessment*, 16 January 2009, p. 9.

<sup>330</sup> NERA, *TSLRIC+ assessment*, 16 January 2009, p. 20.

<sup>331</sup> NERA, *TSLRIC+ assessment*, 16 January 2009, p. 31.

<sup>332</sup> NERA, *TSLRIC+ assessment*, 16 January 2009, p. 32.

<sup>333</sup> NERA, *TSLRIC+ assessment*, 16 January 2009, p. 32.

<sup>334</sup> NERA, *TSLRIC+ assessment*, 16 January 2009, p. 32.

<sup>335</sup> NERA, *TSLRIC+ assessment*, 16 January 2009, pp. 32 – 33.

<sup>336</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 61.

<sup>337</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 61.

<sup>338</sup> Marsden Jacob Associates, *Review of the TEA model*, 12 August 2008, p. 6.

required for a theoretical network structure which can lead to erroneous results, “but may - depending on the use of the information - incorporate inefficiencies.”<sup>339</sup> Further, MJA asserts it has reservations about the degree of optimisation in the network design due to the retention of pillar locations, as it believes that this may lead to cost inefficiencies.<sup>340</sup>

MJA states that the TEA model should be reconciled with an alternative ‘bottom-up’ TSLRIC network model which incorporates efficiencies not implemented in the TEA model.<sup>341</sup> The objective of reconciliation would be to identify and explain the differences between the modelling approaches and to reveal important information on the optimality of the TEA model.<sup>342</sup> MJA conclude that such an approach would greatly assist the ACCC in making informed decisions about the design and input parameters of the TEA model and ultimately provide a more thorough evaluation of ULLS costs.<sup>343</sup>

Optus submits that “it is reasonable for the ACCC to base its ULLS pricing on a scorched node approach, however the TEA model is not based on a conventional scorched node approach.”<sup>344</sup> It is Optus’ view that the approach used in the TEA model does not allow for sufficient network optimisation. This is because use of the existing locations of pillars, manholes and pits mean “historical inefficiencies will be carried into the final price and unfairly paid for by access seekers.”<sup>345</sup> Optus acknowledges Telstra’s justification for the approach taken in the TEA model, that is, by using existing features of the network it incorporates design features of the next generation network, but concludes that this rationale is largely irrelevant in terms of ULLS pricing.<sup>346</sup>

Optus submits that the TEA model network is “practically identical to that of Telstra’s own network with a minimum of adjustments for efficiency.”<sup>347</sup> Furthermore, Optus contends that the network design is not optimal,<sup>348</sup> and that it is unlikely to meet the efficiency standard, as it is heavily influenced by the historical network.<sup>349</sup> Optus also submits that there is no evidence to support Telstra’s claims of efficiency.<sup>350</sup>

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<sup>339</sup> Marsden Jacob Associates, *Review of the TEA model*, 12 August 2008, p. 6.

<sup>340</sup> Marsden Jacob Associates, *Review of the TEA model*, 12 August 2008, pp. 6 – 7.

<sup>341</sup> Marsden Jacob Associates, *Review of the TEA model*, 12 August 2008, p. 3.

<sup>342</sup> Marsden Jacob Associates, *Review of the TEA model*, 12 August 2008, p. 3.

<sup>343</sup> Marsden Jacob Associates, *Review of the TEA model*, 12 August 2008, p. 3.

<sup>344</sup> Optus, *Response to the ACCC’s Discussion Paper*, August 2008, p 38.

<sup>345</sup> Optus, *Response to the ACCC’s Discussion Paper*, August 2008, p 38.

<sup>346</sup> Optus, *Response to the ACCC’s Discussion Paper*, August 2008, p 39.

<sup>347</sup> Optus, *Response to the ACCC’s Draft Decision*, 23 December 2008, p. 4.

<sup>348</sup> Optus, *Response to the ACCC’s Draft Decision*, 23 December 2008, p. 13.

<sup>349</sup> Optus, *Response to the ACCC’s Draft Decision*, 23 December 2008, p. 32.

<sup>350</sup> Optus, *Response to the ACCC’s Draft Decision*, 23 December 2008, pp. 32 – 33.

Network Strategies in its report for Optus, refute Telstra's assertion that their claim of inefficiency is based on an incorrect belief that all nodes are retained.<sup>351</sup> Network Strategies states that their belief that the design is inefficient is based on the fact that DAs are not redesigned, meaning that DAs and pillar locations based on historical demand are retained.<sup>352</sup> Network Strategies also states that, whilst not all pits and manholes are retained, the locations of all structure points are used as waypoints for cable routing, and that they are unable to determine whether these waypoints are efficient.<sup>353</sup>

Network Strategies also disagree with Telstra's assessment that a comparison showing the TEA model's efficiency savings over the existing network proves that the TEA model is efficient.<sup>354</sup> Network Strategies states that comparing an efficient model to the existing network would be a good measure of existing inefficiency, but that a comparison to the existing network is no justification for accepting a model as efficient.<sup>355</sup>

MJA states there may be significant cost efficiencies in allowing pillar locations to vary and be subject to optimisation.<sup>356</sup> This is on the basis that if the pillar is placed close to the customer, then the total cable distance is minimised.<sup>357</sup> Ovum, in a report commissioned by the ACCC, states that although there may be some overestimation of pillar sizes the effect is likely to be small.<sup>358</sup>

Ovum, in reviewing the economic aspects of the TEA model for the ACCC, states that the TEA model is a hybrid model between standard bottom-up and top-down.<sup>359</sup> Ovum reports that:

The TEA model uses a "scorched node" approach. The main nodal locations are fixed, which in this model include: the telephone exchange locations, the Distribution Area ("DA") boundaries, the Pillar locations at the edge of each DA, and the customer locations. The model then dimensions a traditional access network to meet the customer demand using the locations specified. This method is appropriate but its design should be modified. In Europe and across the world many regulators have adopted a modified scorched-node approach.

A modified scorched-node approach takes the existing topology as a starting point, but then modifies the network by eliminating inefficiencies. The technology between the existing nodes is optimised to meet the demands of a forward-looking efficient operator. There is little evidence of the network being optimised and the design is inefficient in some aspects.<sup>360</sup>

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<sup>351</sup> Network Strategies, *Additional comments on the TEA model*, 19 December 2008, pp. 19 – 20.

<sup>352</sup> Network Strategies, *Additional comments on the TEA model*, 19 December 2008, p. 20.

<sup>353</sup> Network Strategies, *Report for Optus*, 5 September 2008, p. 18.

<sup>354</sup> Network Strategies, *Additional comments on the TEA model*, 19 December 2008, p. 20.

<sup>355</sup> Network Strategies, *Additional comments on the TEA model*, 19 December 2008, p. 20.

<sup>356</sup> Marsden Jacob Associates, *Review of the TEA model*, 12 August 2008, p 6.

<sup>357</sup> Marsden Jacob Associates, *Review of the TEA model*, 12 August 2008, p. 7.

<sup>358</sup> Ovum, *TEA model (v1.0) engineering review*, 6 August 2008, p 12.

<sup>359</sup> Ovum, *TEA model (v1.0) economic review*, 6 August 2008, p. 5.

<sup>360</sup> Ovum, *TEA model (v1.0) economic review*, 6 August 2008, p. 9.

Ovum further reports that a modified approach, in which only some node locations are retained, whilst others (such as pillars) are optimised, “may yield further efficiencies but would be a substantial undertaking and is probably not justified for the purpose of the Access Undertaking.”<sup>361</sup>

### Ducts and cable routes

The Ovum report indicates that, in relation to version 1.1, the TEA model’s documented efficiency improvements of eliminating duplicate cable runs and choosing shortest-path routes have not been implemented in the construction of the database used in the model.<sup>362</sup> This means that cable paths and consequentially duct placements implemented in the model are inefficient.<sup>363</sup> Ovum subsequently states that, in version 1.2 of the TEA model, the model database is implemented correctly.<sup>364</sup> Ovum also agrees with Telstra’s assessment that the same structure point can appear in more than one DA.<sup>365</sup> Ovum believes that a limited redesign of DAs may yield greater efficiency, but concludes that the TEA model approach, with fixed DAs, is satisfactory.<sup>366</sup>

Optus submits that neither cable paths nor cable routes are likely to be efficient as the locations of the structure points, the cable paths between nodes and the routing cables between the structure points is not optimal.<sup>367</sup> Further, Optus submits operators in other jurisdictions use more efficient direct buried and overhead cable distribution.<sup>368</sup> Optus also submits that the TEA model’s network design rules assume that all ducts are ‘doubled’ and Optus does not consider this is necessary and considers that it is not consistent with efficient network design.<sup>369</sup>

Optus further contends that the TEA model’s practice of laying cables down only one side of each road, with road crossings at every second allotment is inefficient.<sup>370</sup>

Network Strategies reports that for an efficient model, re-clustering locations and hence hypothetical cable routes are essential.<sup>371</sup> Furthermore, it asserts that the problems with hypothetical models identified by Telstra, such as running cables across natural obstructions, are easily fixed by using rectilinear, rather than Euclidian, distances.<sup>372</sup> Network Strategies observes that such an approach will be reasonably

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<sup>361</sup> Ovum, *Engineering Advisory Note*, 21 January 2008, p. 6.

<sup>362</sup> Ovum, *TEA model (v1.0) engineering review*, 6 August 2008, pp. 6 – 7.

<sup>363</sup> Ovum, *TEA model (v1.0) engineering review*, 6 August 2008, p 8.

<sup>364</sup> Ovum, *Engineering Advisory Note*, 21 January 2008, p. 6.

<sup>365</sup> Ovum, *Engineering Advisory Note*, 21 January 2008, p. 6.

<sup>366</sup> Ovum, *Engineering Advisory Note*, 21 January 2008, p. 7.

<sup>367</sup> Optus, *Response to the ACCC’s Discussion Paper*, August 2008, p. 37.

<sup>368</sup> Optus, *Response to the ACCC’s Discussion Paper*, August 2008, p. 39.

<sup>369</sup> Ovum, *TEA model (v1.0) engineering review*, 6 August 2008, p 8.

<sup>370</sup> Optus, *Response to the ACCC’s Discussion Paper*, August 2008, p. 39.

<sup>371</sup> Network Strategies, *Additional comments on the TEA model*, 19 December 2008, pp. 17 – 18.

<sup>372</sup> Network Strategies, *Additional comments on the TEA model*, 19 December 2008, p. 17.

accurate in Band 2, given the grid like layout of such areas. It also notes that more advanced models use actual road data, giving accurate and realistic cable distances.<sup>373</sup>

Network Strategies note that Telstra's assertion that running cabling down both sides of streets is four times more expensive, and is based on the assumption that per-metre costs of trenching and cabling would remain unchanged in such a deployment.<sup>374</sup> They submit that the model "has been designed around a number of pre-conceptions," and that, hence, "costs in the model appear to justify the architecture."<sup>375</sup> Network Strategies concludes that Telstra's analysis is unhelpful, as "options for a specific reticulation design cannot be used to cost alternative designs."<sup>376</sup>

Ovum notes that:

The model also assumes that all cables have been laid underground and no alternative usage of other technologies such as aerial cable has been included. Other regulatory LRIC models may include alternative technologies. However, in Australia there is no alternative. Ovum believes local councils will not accept such usage of alternative equipment. With such an assumption in place the model has been modelled fairly to represent no alternative technologies. However, with this assumption in place, capital and operational costs will tend to be higher.<sup>377</sup>

### Copper and other technologies

MJA raises the issue that "while the TEA model attempts to optimise a copper network it makes no consideration of alternative technological solutions or mixes."<sup>378</sup> Further, MJA considers that a network built of copper is likely to be sub-optimal. On this basis MJA does not believe, as a matter of principle, that the TEA model produces reasonable results.<sup>379</sup>

MJA states that an appropriate network model should reflect best-in-use or best commercially available technology and that "simply assuming that a copper network is efficient in Band 2 is not satisfactory."<sup>380</sup> MJA asserts that by limiting the TEA model to the technology of copper it "fails the basic test inherent in the TSLRIC concept."<sup>381</sup>

The CCC submits that a forward-looking approach must mimic the decisions a new entrant would make.<sup>382</sup> The CCC therefore believes that modelling a copper network is unreasonable, as a new entrant building a bypass network would be extremely

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<sup>373</sup> Network Strategies, *Additional comments on the TEA model*, 19 December 2008, p. 17.

<sup>374</sup> Network Strategies, *Additional comments on the TEA model*, 19 December 2008, p. 21.

<sup>375</sup> Network Strategies, *Additional comments on the TEA model*, 19 December 2008, p. 21.

<sup>376</sup> Network Strategies, *Additional comments on the TEA model*, 19 December 2008, p. 21.

<sup>377</sup> Ovum, *TEA model (v1.0) economic review*, 6 August 2008, p. 10.

<sup>378</sup> Marsden Jacob Associates, *Review of the TEA model*, 12 August 2008, p. 1.

<sup>379</sup> Marsden Jacob Associates, *Review of the TEA model*, 12 August 2008, p. 1.

<sup>380</sup> Marsden Jacob Associates, *Review of the TEA model*, 12 August 2008, p. 5.

<sup>381</sup> Marsden Jacob Associates, *Review of the TEA model*, 12 August 2008, p. 5.

<sup>382</sup> Competitive Carriers Coalition, *CCC's submission*, 15 December 2008, p. 8.

unlikely to build a copper network.<sup>383</sup> Further, the CCC suggests that as a copper network would provide a lower quality service than a fibre network at much the same cost, the price a new entrant would be willing to pay for a copper network would be significantly lower than the price it would cost to build that network.<sup>384</sup>

## 2. *Application of engineering practices in the TEA model*

### *Telstra*

Telstra submits the TEA model applies best-in-use and forward-looking engineering practices and determines the efficient quantities of plant and equipment that are necessary for a ULLS network. Telstra submits the engineering rules in the TEA model would be adopted by an entrant building such a network today.<sup>385</sup>

Telstra submits the TEA model includes the necessary and appropriate network assets to model an efficient, forward-looking network that can provide the ULLS; that this represents the most efficient approach currently available and that there is no over-provisioning.<sup>386</sup>

Telstra submits that Optus' claim of all ducts being doubled is incorrect,<sup>387</sup> and that in fact, in 99 per cent of the distribution network, only a single duct is deployed.<sup>388</sup> Telstra further states that, in the main network, the additional duct deployed is required for maintenance purposes.<sup>389</sup>

Telstra submits that the non-tapered network design used by default in the TEA model is the design Telstra uses when deploying new networks. It acknowledges that the non-tapered design does result in a very small increase in initial costs compared to a tapered design, but that this would be more than offset by future savings in adding capacity to the network.<sup>390</sup> Telstra refutes claims that the demand in the network is known and fixed, stating that demand for lines has decreased by **[begin c-i-c]** [REDACTED] **[end c-i-c]** over the past five years.<sup>391</sup> Telstra states that the level and location of demand will always change, and that even if the customer base does not grow, demand will vary from location to location.<sup>392</sup> Telstra also notes that a non-tapered network reduces jointing costs, allows large volumes of a single cable size to be

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<sup>383</sup> Competitive Carriers Coalition, *CCC's submission*, 15 December 2008, p. 6.

<sup>384</sup> Competitive Carriers Coalition, *CCC's submission*, 15 December 2008, p. 7.

<sup>385</sup> Telstra, *Response to the ACCC's Discussion Paper*, 12 August 2008, p. 10.

<sup>386</sup> Telstra, *Response to the ACCC's Discussion Paper*, 12 August 2008, p. 12.

<sup>387</sup> Telstra, *Response to access seeker submissions*, 18 November 2008, p. 48.

<sup>388</sup> Telstra, *Response to access seeker submissions*, 18 November 2008, p. 54.

<sup>389</sup> Telstra, *Response to access seeker submissions*, 18 November 2008, p. 48.

<sup>390</sup> Telstra, *Response to access seeker submissions*, 18 November 2008, p. 46.

<sup>391</sup> Telstra, *Response to access seeker submissions*, 18 November 2008, p. 47.

<sup>392</sup> Telstra, *Response to access seeker submissions*, 18 November 2008, p. 47.

purchased, thus reducing costs, increases efficiency in installation as only one cable size needs to be carried, and that the extra capacity is needed to fix faults.<sup>393</sup>

Telstra notes that, even if a non-tapered network is not acceptable, this is not a reason to reject the TEA model, as the model allows the user to choose between a non-tapered and a tapered design.<sup>394</sup>

In a further submission to the ACCC on 24 March 2009 (dated 9 March), Telstra supplied a regression analysis identifying parameters of DA design which may drive the cost of CAN construction. Telstra submits that the “R-squared for this regression model is 0.9971 [indicating] ... that the model provides a very good approximation of the factors driving CAN investment cost.”<sup>395</sup> In conclusion, Telstra submits that “DA design has a statistically significant but very small theoretical impact on investment cost.”<sup>396</sup>

### *Other parties*

MJA reports that it largely agrees with the network components retained by Telstra in the TEA model network design with the exception of retention of the pillar locations.<sup>397</sup>

In contrast, Optus submits that:

...the network design and engineering rules of the TEA model are not likely to lead to an efficient network design, since the approach is based upon the unsupported assumption that Telstra’s historical node layout is efficient, the degree of optimisation in the model is overstated and some of the engineering rules appear to be less than efficient.<sup>398</sup>

Optus further submits that despite the model documentation stating that these modules are optimised, the modules are considered by Optus to be dimensioning tools containing network descriptions and locations are fixed in a network database and do not contain variable design features capable of optimisation.<sup>399</sup>

Network Strategies reports that in general Telstra has used appropriate assets in the model; however, the use of assets is not optimised.<sup>400</sup> Further, Network Strategies note

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<sup>393</sup> Telstra, *Response to access seeker submissions*, 18 November 2008, pp. 46 – 47.

<sup>394</sup> Telstra, *Response to access seeker submissions*, 18 November 2008, p. 46.

<sup>395</sup> Telstra, *The Impact of Distribution Area Design on Customer Access Network Investment Costs*, 9 March 2009, pp. 16-17.

<sup>396</sup> Telstra, *The Impact of Distribution Area Design on Customer Access Network Investment Costs*, 9 March 2009, p. 19.

<sup>397</sup> Marsden Jacob Associates, *Review of the TEA model*, 12 August 2008, p. 6.

<sup>398</sup> Optus, *Response to the ACCC’s Discussion Paper*, August 2008, p. 34.

<sup>399</sup> Optus, *Response to the ACCC’s Discussion Paper*, August 2008, p. 34.

<sup>400</sup> Network Strategies, *Report for Optus*, 5 September 2008, p. 67.

that certain elements in the network (eg. ducts) appear to be over-provisioned, resulting in an inefficient design.<sup>401</sup>

Ovum submits that the engineering rules described in Telstra's documentation are "extensive and detailed and, on the whole, represent good engineering practice...[u]nfortunately, there are a number of areas in which the implementation falls short of the documented rule and the stated intentions."<sup>402</sup>

Submissions on particular issues associated with aspects of the network assets and design implemented in the TEA model are set out below.

#### Customer locations

MJA considers it appropriate to retain customer locations to reflect the line demand structure.<sup>403</sup>

#### Distribution area boundaries

MJA notes that the use of actual distribution area boundaries may retain some network structure inefficiencies but does not regard it as significantly material to warrant closer examination.<sup>404</sup>

Ovum also notes that for efficient design the distribution areas should not overlap.<sup>405</sup>

#### Lead-in cables

MJA find the fact the model does not use poles for lead-in cables or the distribution part of the network problematic.<sup>406</sup> Although MJA acknowledges that the use of poles may be subject to limitations, "to disregard the use of poles altogether is unlikely to yield a cost efficient result."<sup>407</sup>

#### Access nodes and cable jointing

Optus submits that the network produced by the TEA model places a large number of access nodes and cable joints close together and, as cable jointing is particularly expensive, this design characteristic is a source of inflated costs in the TEA model.<sup>408</sup>

In contrast, Ovum reports that the jointing of cables in the model is efficient and cable lengths are given a generous value which may end up underestimating the jointing costs.<sup>409</sup>

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<sup>401</sup> Network Strategies, *Report for Optus*, 5 September 2008, p. 67.

<sup>402</sup> Ovum, *TEA model (v1.0) engineering review*, 6 August 2008, p. 3.

<sup>403</sup> Marsden Jacob Associates, *Review of the TEA model*, 12 August 2008, p. 7.

<sup>404</sup> Marsden Jacob Associates, *Review of the TEA model*, 12 August 2008, p. 7.

<sup>405</sup> Ovum, *TEA model (v1.0), engineering review*, 6 August 2008, p 9.

<sup>406</sup> Marsden Jacob Associates, *Review of the TEA model*, 12 August 2008, p. 7.

<sup>407</sup> Marsden Jacob Associates, *Review of the TEA model*, 12 August 2008, p 6.

<sup>408</sup> Optus, *Response to the ACCC's Discussion Paper*, August 2008, p. 37.

<sup>409</sup> Ovum, *TEA model (v1.0) engineering review*, 6 August 2008, p 11.

## Tapered architecture

Optus and Network Strategies state that where Telstra uses non-tapered architecture where it is not suitable, Telstra is overbuilding the network and this is a source of inefficiency. Optus submits that non-tapered architecture is suitable for new exchange areas where future demand is unknown and in existing areas where potential for network growth is limited otherwise tapered architecture is suitable.<sup>410</sup> However, Network Strategies reports that the TEA model network is not being designed to cope with unexpected future growth, and hence a non-tapered architecture is appropriate.<sup>411</sup> Ovum's report also notes that the default non-tapered option in the model creates a degree of inefficiency in the design, but is common practice.<sup>412</sup>

Network Strategies acknowledges that economies of scale in cable prices and simplified network design may be justifications for deploying a non-tapered design. Network Strategies states, however, that no price reduction in 100 pair cable from such economies of scale are present in the TEA model, and that there is no reduction in overheads due to the simplified design.<sup>413</sup> Network Strategies thus concludes that "there is no justification for the use of non-tapered architecture in the TEA model."<sup>414</sup>

## **ACCC view**

The ACCC agrees with Telstra that the hypothetical network produced through costs modelling is only a proxy for the real world and that certain geographic and physical constraints may need to be fixed when modelling the CAN. In this regard, the ACCC considers that the current network design of the access provider provides a useful starting point when determining the hypothetical network to avoid unrealistic deployment assumptions.

The ACCC considers that Telstra's implementation of TSLRIC+; in particular its inconsistent application of the 'hypothetical operator', affects the TEA model's network design. The ACCC notes that, in estimating the TSLRIC+ of the ULLS, Telstra has applied a scorched node approach which assumes the access provider as the hypothetical operator. However, Telstra states in several parts of its submission that its application of TSLRIC+ provides cost estimates faced by a new entrant. Telstra seems to be suggesting that, in the current environment, the hypothetical network that would be built would be, in effect, a replication of its copper network. Telstra appears to assume that a hypothetical operator would repeat the legacy network design decisions of the incumbent, which results in attributing a higher cost to the hypothetical network. On this basis, the ACCC considers that estimates from Telstra's implementation of TSLRIC+ in the TEA model are not efficient and forward-looking.

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<sup>410</sup> Optus, *Response to the ACCC's Discussion Paper*, August 2008, p 37; Network Strategies, *Report for Optus*, pp. 46-47.

<sup>411</sup> Network Strategies, *Additional comments on the TEA model*, 19 December 2008, p. 16.

<sup>412</sup> Ovum, *TEA model (v1.0) engineering review*, 6 August 2008, p 25.

<sup>413</sup> Network Strategies, *Additional comments on the TEA model*, 19 December 2008, p. 16.

<sup>414</sup> Network Strategies, *Additional comments on the TEA model*, 19 December 2008, p. 16.

Telstra's assumption that the hypothetical operator in the present day would replicate a copper network is a key hard-coded feature in the TEA model. Cost estimates from such a model will not reflect the optimal network design and best-in-use technology in the present day. Therefore, the ACCC is not satisfied that the TEA model's network design reflects the efficient and forward-looking costs of supplying the ULLS. In this regard, the ACCC agrees with comments by Optus that the network design is not optimal and that it is unlikely to be efficient as it is heavily influenced by historical inefficiencies.

The ACCC notes that where access prices are not based on the costs of an efficient network, the resulting access prices will not reflect the efficient costs of providing the service, such that some of the legislative criteria for accepting an undertaking will not be satisfied. For instance, an access price based on cost estimates that are not efficient and forward-looking will not encourage appropriate signals for competitors to efficiently build their own infrastructure, where bypass is possible, versus buying the regulated service.

The ACCC notes that whilst the Draft Decision took the view that a technology constraint exists—that because the ULLS description is technology specific, the hypothetical network modelled is only a copper network—this Final Decision reflects a change in the ACCC's view. In particular, the ACCC notes that its role is to assess whether the terms of the 2008 Undertaking satisfy the statutory criteria (including whether cost estimates which support the undertaking are efficient and forward-looking), therefore the ACCC should not be constrained because the ULLS declaration service description is technology-specific.

The ACCC considers that cost estimates should be based on a hypothetical, efficient and forward-looking network, so that appropriate signals are set to efficiently build infrastructure, where bypass is possible, or to buy the regulated service. Costing the CAN as the entire copper network just because the service description is technology specific, as Telstra has done, does not create such signals as it assumes that copper is the best technology in use in the present day, and does not consider other technological options that may offer greater service potential. In this regard, the technology specific nature of the ULLS description is irrelevant to the hypothetical network design.

The issue of alternative technologies was first raised by MJA in response to the discussion paper, who stated:

the TEA model does not in MJA's view adhere to the basic principle and purpose of a total service long-run incremental cost (TSLRIC) model. ... [i]t makes no consideration of alternative technological solutions or mixes. It makes the assumption that a copper network is the appropriate forward-looking network.<sup>415</sup>

Given that MJA's comments were an isolated submission, the ACCC had regard to the submission but restricted their analysis to the service description.

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<sup>415</sup> Marsden Jacob Associates, *Review of the TEA Model – A report prepared for Competitive Carriers Coalition*, 12 August 2008, p. 1.

In response to the Draft Decision, a number of additional parties raised the issue of considering alternative technologies in a hypothetical network. For example, Unwired criticised the ACCC's position in the Draft Decision, submitting that:

[t]he Commission is effectively deciding that the only practical access technology is Telstra's copper network. This is patently absurd.<sup>416</sup>

In addition, a submission from CEG in response to the Draft Decision notes that "a new entrant would never enter with the types of technology being modelled [by the TEA model]."<sup>417</sup> Furthermore, in response to the Draft Decision, the CCC submitted that:

The CCC considers that even in the event that an operator did decide to bypass the local loop it would not likely use copper. A new local loop operator might use wireless or cable network as the basis of its entry. In fact, if a new operator were to re-dig the trenches, ... it would lay fibre to the home rather than copper. Such a network would provide a significantly higher quality of service than is provided by the existing copper loop but cost about the same given the vast majority of the cost of the network is in trenching and labour costs and the cost difference between copper and optical fibre cabling is not significant<sup>418</sup>

The ACCC notes Telstra's comment that it applies best-in-use and forward-looking engineering practices and determines the efficient quantities of plant and equipment that are necessary for a ULLS network. The ACCC considers that while Telstra may apply best practice engineering rules, these rules relate to building an entire copper network and as its network design suffers from inherent inconsistencies and is an underlying assumption, TEA model estimates will necessarily not be forward-looking. The ACCC notes the following about the engineering rules:

- It seems acceptable to apply the TEA model's engineering rules relating to retaining current pillar and DA locations and using an optimised subset of existing cable routes, although the ACCC considers that there are different optimisation methods that could be used to determine efficient network costs, for example, applying an algorithmic approach to current network design to determine efficient routes is one approach. The ACCC also notes Telstra's submission on the parameters of DA design which effect the cost of constructing the CAN.<sup>419</sup>
- The ACCC nonetheless has concerns regarding DA design. In particular, the fact that distribution cables from different DAs share conduit at some points shows that at least one of these cables is not following the shortest path back to the exchange, indicating that the current DA design is not the most efficient

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<sup>416</sup> Unwired Australia, *Submission in response to assessment of Telstra's unconditioned local loop service Band 2 monthly charge undertaking – draft decision November 2008 and draft MTAS pricing principles determination – November 2008*, p. 3.

<sup>417</sup> Competition Economists Group, *Regulatory Briefing – Telstra ULL Price Undertaking*, November 2008, p. 1.

<sup>418</sup> Competitive Carriers Coalition, *Response to the ACCC's Draft Decision*, pp. 6-7.

<sup>419</sup> Telstra, *The Impact of Distribution Area Design on Customer Access Network Investment Costs*, 9 March 2009.

possible. Whilst Telstra is correct in stating that this sharing of conduit increases efficiency in the context of fixed DA boundaries, were a redesign of DAs performed, the ACCC considers that greater efficiency could be achieved. Furthermore, the ACCC notes Telstra's regression analysis which indicates that whilst the impact of DA design is small, it is nonetheless statistically significant.

- The ACCC agrees with NERA that the route optimisation process used in the TEA model is reasonable. Given the use of existing pillar locations, DAs and cable routes, a more complete method of optimising over both network length and cable numbers would not likely result in significant extra efficiency savings.
- The ACCC accepts that a non-tapered architecture is reasonable in light of Ovum's comments that a non-tapered design provides greater operational efficiency, and implementing a tapered design would only save 4 per cent of the cost.<sup>420</sup> The ACCC also agrees that the use of underground cabling would be necessary due to restrictions from local councils.

The ACCC notes that Telstra has provided material to show the efficiency in the TEA model compared to its actual existing network (particularly for trenches, manholes, pits and cable sheath). However, the ACCC's view is that the evidence provided by Telstra only suggests that Telstra's existing network is inefficient, and does not give a good indication of the level of efficiency in the TEA model. Without the ability to determine actual locations and cable routes used in the model or to compare to other possible deployments with fewer constraints, the ACCC is unable to assess the true level of efficiency in the copper design.

With respect to Telstra's comment that the model can be used to price the sub-loop, in assessing the TEA model for the purposes of the 2008 Undertaking, the ACCC's role is to determine whether the price estimates for the ULLS from the model are reasonable. In this context, a discussion of sub-loop pricing for a fibre to the node network is not relevant in assessing the reasonableness of Telstra's undertaking.

The ACCC acknowledges MJA's suggestion of reconciling the TEA model with a bottom-up model. The ACCC has had such a model developed by Analysys Mason Ltd., but, as outlined in chapter 7, the weight that can be placed on estimates from the Analysys model is limited because the model has not been finalised.

Overall, the ACCC considers that whilst it is willing to accept that Telstra has implemented reasonable engineering rules under the assumption of the replication of an entire copper network build in the present day, this does not mean that Telstra's implementation of TSLRIC+ results in estimates that are efficient and forward-looking. In fact, the ACCC considers that Telstra's implementation of TSLRIC+ results in estimates that are inflated because the network design assumption—which underlies the engineering rules of the TEA model—suffers from inherent inconsistencies in its application of the hypothetical operator.

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<sup>420</sup> Ovum, *TEA model (v1.0) engineering review*, 6 August 2008, p. 25.

### B.3 Equipment Prices

This section looks at the equipment prices used in the TEA model and whether they are reasonable. Accordingly, it considers the source of the equipment prices used in the model, and whether adjustments have been made to these prices to ensure they are forward looking.

#### Telstra's proposed network input costs

In support of its 2008 Undertaking, Telstra submits that the TEA model is based on the ongoing costs of supplying ULLS using efficient means of supply and technologies that are currently in widespread commercial use. In particular, Telstra submits that one way the model achieves this is by using competitive market rates for valuing plant and equipment.<sup>421</sup>

The ACCC notes that Telstra only supplied estimates for the cost of network inputs and deployment activities in the full version of the TEA model. Accordingly, it is unlikely that parties who did not have access to the full version were able to undertake a complete assessment and make fully informed submissions on the model and its outputs. The ACCC notes that on 13 January 2009, only eighteen individuals (excluding Ovum) had gained access to the full version of the TEA model. Of these eighteen individuals, 11 are from law firms representing access seekers and seven are from consultants advising either Optus or the CCC. This compares to a total of twenty-nine individuals who gained access to the non-confidential version of the TEA model.<sup>422</sup>

#### Submissions

##### *Telstra*

Telstra submits that the cost estimates in the TEA model reflect the efficient 'replacement' cost of the CAN.<sup>423</sup> This is on the basis that rates for plant and equipment are obtained from Telstra's actual external contractor rates.<sup>424</sup> Further, the report by NERA Economic Consulting, prepared on behalf of Telstra, states that "[s]tandard practice in TSLRIC+ models is to value assets using the cost of replacing them with the modern equivalent asset (MEA)."<sup>425</sup>

In responding to Ovum's Economics Report, Telstra submits that the Access and Associated Services (A&AS) contract rates are not historic costs.<sup>426</sup> Rather, these are current contract rates which are forward looking, as they are applicable through to at least [begin c-i-c] [redacted] [end c-i-c].<sup>427</sup> Telstra argues that as the rates for

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<sup>421</sup> Telstra, *Telstra's ULLS Undertaking is Reasonable*, 4 April 2008, p. 3.

<sup>422</sup> Count of individuals as at 8 August 2008.

<sup>423</sup> Telstra, *Response to Discussion Paper*, 12 August 2008, p. 15.

<sup>424</sup> Telstra, *Response to Discussion Paper*, 12 August 2008, p. 15.

<sup>425</sup> NERA, *TSLRIC+ assessment*, 16 January 2009, p. 21.

<sup>426</sup> Telstra, *Response to Draft Decision*, 23 December 2008, p. 66.

<sup>427</sup> Telstra, *Response to Draft Decision*, 23 December 2008, p. 66.

plant and equipment are efficient competitive prices, the TEA model, by using these rates, calculates the current market price of replacing the CAN.<sup>428</sup> In a submission to the ACCC on 1 April 2009, Telstra resubmits that A&AS contracts were awarded after a “competitive selection process.”<sup>429</sup> Furthermore, the statement of [begin c-i-c]

[end c-i-c].

In responding to submissions made by access seekers, Telstra submits that Optus’ criticisms of copper cable prices were based on ‘dummy’ vendor prices contained in version 1.2.1 of the TEA model.<sup>430</sup> Telstra re-emphasise this view in their response to the ACCC’s Draft Decision<sup>431</sup> and further submit that the Network Strategies report, submitted on behalf of Optus, does not provide any detail of how cable costs were calculated.<sup>432</sup> Furthermore, Telstra characterise the TEA model cable costs as reflecting “negotiated rates established through an extensive competitive bidding process.”<sup>433</sup> Telstra also notes that Optus’ prices may not include inventory management such as warehouse storage costs.<sup>434</sup>

In relation to Optus’ statements regarding the lower costs of equipment in other jurisdictions, Telstra submits that Optus do not provide any justifications for this statement.<sup>435</sup> In addition Telstra submit that such a comparison would have to take into account a wide variety of factors including differences in cable production costs, as well as the differences in exchange rates and purchasing power.<sup>436</sup>

In response to a request for further information from the ACCC, Telstra provided information detailing what functions (such as storage costs) are included in the equipment prices in the TEA model.<sup>437</sup> Telstra submits that the TEA model’s input prices include the equipment cost, as well as storage and delivery costs. Telstra also notes that installation costs are included in some instances (e.g. manholes) whereas in other instances installation is a separate charge (e.g. copper cable).<sup>438</sup>

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<sup>428</sup> Telstra, *Response to Discussion Paper*, 12 August 2008, p. 16.

<sup>429</sup> Telstra, *Telstra’s Ordinary Access Undertaking for the Unconditioned Local Loop Service: Response to Access Seeker Submissions on the ACCC’s Draft Decision*, 1 April 2009, p. 35.

<sup>430</sup> Telstra, *Response to Access Seeker Submissions*, 18 November 2008, p. 55.

<sup>431</sup> Telstra, *Response to Draft Decision*, 23 December 2008, p. 64.

<sup>432</sup> Telstra, *Telstra’s Ordinary Access Undertaking for the Unconditioned Local Loop Service: Response to Access Seeker Submissions on the ACCC’s Draft Decision*, 1 April 2009, p. 36.

<sup>433</sup> Telstra, *Response to Access Seeker Submissions*, 18 November 2008, p. 55.

<sup>434</sup> Telstra, *Response to Access Seeker Submissions*, 18 November 2008, p. 56.

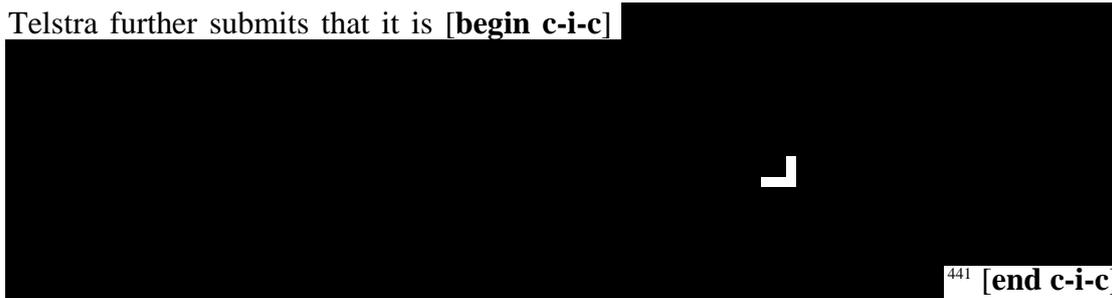
<sup>435</sup> Telstra, *Response to Access Seeker Submissions*, 18 November 2008, p. 54.

<sup>436</sup> Telstra, *Response to Access Seeker Submissions*, 18 November 2008, p. 55.

<sup>437</sup> Telstra, *Telstra’s response to the ACCC’s January request for further information*, 13 March 2009.

<sup>438</sup> Telstra, *Telstra’s response to the ACCC’s January request for further information*, 13 March 2009, pp. 1-2.

Telstra further submits that it is [begin c-i-c]



<sup>441</sup> [end c-i-c]

Telstra also submits that the cost of lead-ins should be included in the monthly charge for the ULLS.<sup>442</sup> In response to the ACCC's Draft Decision, Telstra submits that its earlier submission stating that lead-in costs are recovered through connection charges,<sup>443</sup> was incorrect.<sup>444</sup> First, this is because lead-ins are a once off cost that must be incurred by Telstra or a potential new entrant.<sup>445</sup> Second, Telstra submits lead-ins are installed at a loss, and this cost cannot be increased by more than CPI.<sup>446</sup> Third, Telstra submits lead-ins are not recovered through O&M costs.<sup>447</sup>

Telstra submits that Ovum's suggestion to reduce equipment prices by 10 per cent to account for the recent reduction in equipment prices is not required as Telstra's prices were negotiated in 2007.<sup>448</sup>

In relation to entrance facility costs, Telstra submits that these are not recovered through TEBA charges, which recover costs relating to the equipment side of the MDF.<sup>449</sup> Telstra submits that the entrance facility costs that are sought to be recovered in the TEA model relate to costs on the customer or line side of the MDF.<sup>450</sup> Telstra submits that the costs associated with these facilities are "required to terminate copper main cables, regardless of which carrier is providing the actual service over the

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<sup>439</sup> Telstra, *Telstra's response to the ACCC's January request for further information*, 13 March 2009, p. 3.

<sup>440</sup> Telstra, *Telstra's response to the ACCC's January request for further information*, 13 March 2009, p. 4.

<sup>441</sup> Telstra, *Telstra's response to the ACCC's January request for further information*, 13 March 2009, p. 3.

<sup>442</sup> Telstra, *Response to Discussion Paper*, 12 August 2008, p. 13.

<sup>443</sup> Telstra, *Telstra's detailed submission in support of its PSTN OTA and LCS Undertakings dated 9 January 2003*, 31 July 2003, p. 31.

<sup>444</sup> Telstra, *Response to Draft Decision*, 23 December 2008, p. 67.

<sup>445</sup> Telstra, *Response to Draft Decision*, 23 December 2008, p. 67.

<sup>446</sup> Telstra, *Response to Draft Decision*, 23 December 2008, p. 67.

<sup>447</sup> Telstra, *Response to Draft Decision*, 23 December 2008, p. 67.

<sup>448</sup> Telstra, *Response to Draft Decision*, 23 December 2008, p. 66.

<sup>449</sup> Telstra, *Response to Draft Decision*, 23 December 2008, p. 69.

<sup>450</sup> Telstra, *Response to Draft Decision*, 23 December 2008, p. 69.

lines.”<sup>451</sup> Telstra also raised this issue in a letter to the ACCC dated 2 December 2008.<sup>452</sup>

### *Other parties*

Optus submits that the TEA model costs are likely to significantly overestimate Telstra’s efficient cost of supplying the ULLS and do not reflect the replacement cost of the CAN.<sup>453</sup> Optus argues that one reason for this is that Telstra’s vendor prices are, on average, [begin c-i-c] [redacted] [end c-i-c] per cent higher than the market prices available to Optus.<sup>454</sup> In support of Optus’ assertion that the TEA model equipment prices are too high, Optus has provided a statement by [begin c-i-c] [redacted] [end c-i-c] which compares TEA model input prices with Optus’ prices.<sup>455</sup> Optus indicates that the information contained in this statement indicates what prices are available to Optus in the market, through offers from vendors.<sup>456</sup>

Network Strategies reports that the two key costs in the model, trenching and copper cable, appear to be high.<sup>457</sup> In response to the ACCC’s Draft Decision, Network Strategies notes that cable costs are 10 to 20 per cent higher for small cable sizes than its estimate, and 50 per cent higher for large main cables.<sup>458</sup> Accordingly, Network Strategies concludes that due to Telstra’s overestimation of cable costs, the TEA model output will be greater than the efficient cost of providing the service.<sup>459</sup>

Ovum states that there is no evidence that the network costs submitted in the model have been re-valued and made forward looking. Further, Ovum concludes that the cost inputs are in fact generally historic averaged costs sourced from Telstra’s engineering department and mainly drawn from three A&AS agreements.<sup>460</sup> MJA states that Telstra has not supplied documentation to support its claims of efficient costs.<sup>461</sup>

MJA observes that the cost factors used in the TEA model lack detail and are provided for very large cost categories.<sup>462</sup> In particular, MJA asserts that it is unclear whether Telstra has considered the large cost difference between boring and trenching in implementing the model.<sup>463</sup> The basis for increasing costs of manholes and pits on a

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<sup>451</sup> Telstra, *Response to Draft Decision*, 23 December 2008, p. 69.

<sup>452</sup> Telstra, *Letter to the ACCC*, 2 December 2008, p. 7.

<sup>453</sup> Optus, *Response to Discussion Paper*, August 2008, p. 40.

<sup>454</sup> Optus, *Response to Draft Decision*, December 2008, p. 19.

<sup>455</sup> Optus, *Response to Draft Decision*, December 2008, Attachment 3.

<sup>456</sup> Optus, *Response to Draft Decision*, December 2008, p. 18.

<sup>457</sup> Network Strategies, *Report for Optus*, 5 September 2008, p. 68

<sup>458</sup> Network Strategies, *Additional Comments on the TEA model*, 19 December 2008, p. 3.

<sup>459</sup> Network Strategies, *Additional Comments on the TEA model*, 19 December 2008, p. 5.

<sup>460</sup> Ovum, *TEA model (v1.0) economic review*, 6 August 2008, p10.

<sup>461</sup> Marsden Jacob Associates, *Review of the TEA model*, 12 August 2008, p. 2.

<sup>462</sup> Marsden Jacob Associates, *Review of the TEA model*, 12 August 2008, p. 2.

<sup>463</sup> Marsden Jacob Associates, *Review of the TEA model*, 12 August 2008, p. 8.

per square metre basis is also highlighted in the report as being unclear and possibly not correct.<sup>464</sup>

In relation to costs of cables, Optus argues that the costs of copper and fibre cable are likely to be above 'replacement cost' and appear to be significantly higher than equivalent prices in other jurisdictions.<sup>465</sup> Optus provides its own confidential prices for copper and fibre cable which are lower than the equivalent prices in the TEA model in support of this assessment.<sup>466</sup> Further, MJA observes that certain cable sizes have costs that are excessive relative to other cable sizes.<sup>467</sup>

In a further submission to the ACCC, Optus indicated that the pricing information in the statement of [begin c-i-c begin] [redacted] [end c-i-c] is the 'landed unit cost'.<sup>468</sup> Accordingly, whilst this price does not include storage, it does include the cost of delivery to either a warehouse or an on-site location for installation. Optus also submits that it "considers that an efficient operator building a new network will incur minimal storage costs" given that landed unit costs include transport to a location for installation.<sup>469</sup>

On 23 March 2009, Optus supplied additional information regarding the cost of copper cable only. However Optus noted that it was not possible to determine a 'base price' for copper cable only, and their prices still include the cost of transport to Australia, which includes shipping and customs charges. Therefore, Optus notes that the "true 'base price' is likely to be even lower than reflected" in the information provided by Optus.<sup>470</sup>

In contrast, Ovum's comparison of the cost of the MEA to historic costs used in the TEA model indicates that overall the cost of cable is broadly in line with international benchmarks.<sup>471</sup> However, Ovum concludes that the other equipment prices in the TEA model should be lower as they should be valued at current cost of a MEAs and if the cable costs are adjusted with international benchmarks and other equipment prices are reduced by 10 per cent, then the final ULLS cost falls by 6 per cent.<sup>472</sup>

In response to the Draft Decision, the Adam Internet et al submission supports the ACCC's view that lead-in costs and entrance facility costs are not legitimate costs

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<sup>464</sup> Marsden Jacob Associates, *Review of the TEA model*, 12 August 2008, p. 8.

<sup>465</sup> Optus, *Response to Discussion Paper*, August 2008, pp. 40 – 41.

<sup>466</sup> Optus, *Response to Discussion Paper*, August 2008, p. 41.

<sup>467</sup> Marsden Jacob Associates, *Review of the TEA model*, 12 August 2008, p. 8.

<sup>468</sup> Optus, *Optus Supplementary Submission to the TEA model costing: a response to the ACCC's request for further information*, January 2009, p. 1.

<sup>469</sup> Optus, *Optus Supplementary Submission to the TEA model costing: a response to the ACCC's request for further information*, January 2009, p. 1.

<sup>470</sup> Optus, *Optus Supplementary Submission to the TEA model costing: A response to the ACCC's request for further information*, 23 March 2009, pp. 1-2.

<sup>471</sup> Ovum, *TEA model (v1.0) economic review*, 6 August 2008, p 11.

<sup>472</sup> Ovum, *TEA model (v1.0) economic review*, 6 August 2008, p 11.

incurred in providing the ULLS.<sup>473</sup> In a further submission provided to the ACCC, the access seekers indicate that TEBA charges do not include costs associated with the equipment Telstra has called entrance facility costs.<sup>474</sup> Accordingly, the access seekers conclude that a portion of entrance facility costs could be recovered via the ULLS monthly charge.<sup>475</sup>

Adam Internet et al also submit lead-in costs should not be recovered through the ULLS monthly charge as Telstra's responsibility is to provide a connection only to the property and does not require trenching beyond the property's boundary.<sup>476</sup> In addition, Adam Internet et al submits that Telstra's lead-in costs are "most likely recovered or possibly over-recovered in the \$299 connection charge" imposed on new customers or through the Universal Service Fund.<sup>477</sup> In support of this position, the Adam Internet et al submission contains information supplied by Telstra for people building a new home.<sup>478</sup> This indicates that a home builder must dig a trench, and arrange for a Telstra approved contractor to install the lead-in.<sup>479</sup> This information is supported by information provided in Annexure B from the Department of Broadband, Communications and the Digital Economy on network extension and trenching costs.<sup>480</sup>

Adam Internet et al also question whether copper prices should be considered at all. For example, given the Federal Government's National Broadband Tender, Adam Internet et al submits that Telstra's TEA model cannot be realistically described as a 'forward-looking' model as it 'is based upon the obsolete copper network' and consequently the replacement cost methodology (RCM) is no longer relevant:<sup>481</sup>

In these circumstances, a RCM is no longer an appropriate cost model because no access provider, hypothetical [or] otherwise, would replace the CAN with another CAN because even the best (least-cost) option under current technology will soon be trumped by the superior (most cost) NBN.<sup>482</sup>

### **ACCC view**

In considering whether the costs in the TEA model are efficient and forward looking, where Australian prices are unavailable for comparison, the ACCC prefers an approach which benchmarks cost values with international equivalents. The ACCC also notes that it is usually the case that vendor prices are confidential. On this basis, the ACCC has relied on Ovum's analysis which suggests that the equipment prices

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<sup>473</sup> Adam Internet et al, *Response to Draft Decision*, 23 December 2008, p. 1.

<sup>474</sup> Adam Internet et al, *Further information supplied to the ACCC*, 19 January 2009.

<sup>475</sup> Adam Internet et al, *Further information supplied to the ACCC*, 19 January 2009.

<sup>476</sup> Adam Internet et al, *Response to Draft Decision*, 23 December 2008, p. 2.

<sup>477</sup> Adam Internet et al, *Response to Draft Decision*, 23 December 2008, pp. 2 – 3.

<sup>478</sup> Adam Internet et al, *Response to Draft Decision*, 23 December 2008, Annexure A.

<sup>479</sup> Adam Internet et al, *Response to Draft Decision*, 23 December 2008, Annexure A, p. 2.

<sup>480</sup> Adam Internet et al, *Response to Draft Decision*, 23 December 2008, Annexure B, p. 10.

<sup>481</sup> Adam Internet et al, *Response to Discussion Paper*, August 2008, p. 9.

<sup>482</sup> Adam Internet et al, *Response to Discussion Paper*, August 2008, p. 9.

should be lower and Optus' submission that the cost of cable used in the TEA model is high. The ACCC notes that Telstra's pricing information contained in the TEA model version 1.2 has not been changed in version 1.3 of the model.

The ACCC notes NERA's submission that MEAs should be applied to a TSLRIC+ model. However the ACCC, as indicated above in section 6, has noted that in relation to this issue, that it would be willing to accept an implementation of TSLRIC+ that uses the best-in-use technology that is commercially available.

As discussed above, Telstra submits that Optus' criticisms of cable costs were based on dummy variables. In addition, the ACCC notes Telstra's concerns<sup>483</sup> that the prices supplied by Optus may not be comparable, in that Optus' prices may not include items such as inventory management costs. In order to ensure that the costing information above is comparable, following the release of the ACCC's draft decision, the ACCC sought further information from both Optus and Telstra on the specific costs included in each item. This has allowed the ACCC to conduct an independent comparison of the cost of copper cable used in the TEA model. A summary of this information is provided in Table B.3.1 below.

The ACCC notes that Telstra's prices in Table B.3.1 represent the approximate cost for copper cable only. The ACCC calculated this value using the percentage factors supplied by Telstra in response to the ACCC's request for further information dated 23 January 2009.<sup>484</sup> In addition, the ACCC notes that Optus submits that their vendor prices are conservative as they have been calculated by subtracting local delivery costs of [begin c-i-c] [redacted] [end c-i-c] per metre and also include charges associated with transportation to Australia such as shipping and customs charges.<sup>485</sup>

**Table B.3.1 Comparison of Telstra's vendor prices<sup>486</sup> with Optus' vendor prices<sup>487</sup>**

[begin c-i-c]

[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

<sup>483</sup> Telstra, *Response to Access Seeker Submissions*, 18 November 2008, p. 56.

<sup>484</sup> Telstra, *Telstra's response to the ACCC's request for further information on Telstra's Band 2 ULLS undertaking made pursuant to s152BT of the Trade Practices Act*, 13 March 2009, pp. 1-2.

<sup>485</sup> Optus, *Optus Supplementary Submission to the TEA model costing: A response to the ACCC's request for further information*, 23 March 2009, pp. 1-2.

<sup>486</sup> Telstra, *Response to Draft Decision*, 23 December 2008, p. 65.

<sup>487</sup> Optus, Confidential statement of [begin c-i-c] [redacted] [end c-i-c], 22 December 2008, p. 3.

<sup>488</sup> In response to the ACCC's section 152BT request dated 23 January 2009, a factor for the material component was not supplied to the ACCC for this type of cable.


[end c-i-c]

**Table B.3.2 Percentage differences between Telstra’s and Optus’ vendor prices**

[begin c-i-c]


[end c-i-c]

As indicated in Table B.3.2 above, the costing information supplied by Optus is in all instances except one, lower than that supplied by Telstra (a positive value indicates that Telstra’s price is higher than Optus’). The ACCC notes that in five instances, there is a greater than [begin c-i-c] [end c-i-c] per cent difference between the vendor prices proposed by Telstra and Optus, and in one of these instances, the difference is as much as [begin c-i-c] [end c-i-c] per cent.

The ACCC notes that if the equipment costs in the TEA model are overstated, these issues will be magnified by the factors that are applied elsewhere in the model. Accordingly, whilst the information supplied by Telstra and Optus means that it has not been possible to conduct a comparison using identical items, despite the inclusion of additional items in Optus’ information, in all instances except one, Optus’ vendor prices are lower than Telstra’s.

The ACCC also notes that Telstra has included the cost of a 2 pair lead-in of \$282.91 to network costs. Following submissions in response to the ACCC’s Draft Decision, the ACCC’s view is that this cost should not be included in the cost of providing the ULLS. As noted in the 2005 Undertaking Final Decision,<sup>489</sup> Telstra has previously submitted that the cost of lead-ins is recovered through connection charges.<sup>490</sup> In response to the ACCC’s Draft Decision; Telstra submits that their previous submission in 2003 indicating that lead-ins are recovered through connection charges was incorrect.<sup>491</sup> Despite this, Telstra has not provided persuasive additional evidence indicating that lead-in costs should be included in the cost of providing the ULLS. For example, Telstra have not demonstrated what has changed since their submission to

<sup>489</sup> ACCC, *2006 Final Decision*, p. 66.

<sup>490</sup> Telstra, *Telstra’s Detailed submission in support of its PSTN OTA and LCS Undertakings dated 9 January 2003*, 31 July 2003, p. 31.

<sup>491</sup> Telstra, *Response to Draft Decision*, 23 December 2008, p. 65.

the ACCC in 2003. Further, and consistent with the ACCC's views in recent arbitral final determinations the ACCC does not consider that lead-in costs should be included in network costs as:

- the ACCC considers that lead-in costs, being once-off costs associated with connecting a service are more appropriately recovered through connection charges;
- the ACCC is not satisfied that the cost of lead-ins is not already fully or partially recovered by Telstra's connection charges;<sup>492</sup> and
- lead-in costs may already be recovered in O&M costs.

Whilst Telstra, in response to the ACCC's Draft Decision, have submitted further information regarding the nature of entrance facility costs,<sup>493</sup> the ACCC considers this information is insufficient to determine whether entrance facility costs are being accurately recovered and are not recovered elsewhere. However given the relatively minor impact on the total ULLS monthly charge, at this stage, the ACCC is prepared to accept the inclusion of these costs for the purposes of assessing the 2008 Undertaking.

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<sup>492</sup> Telstra, *Our Customer Terms – Basic telephone service section, Part A – General, 19 July 2008*, access on 9 October 2008 at [http://www.telstra.com.au/customerterms/docs/fixed\\_general.pdf](http://www.telstra.com.au/customerterms/docs/fixed_general.pdf), p.7.

<sup>493</sup> Telstra, *Response to Draft Decision*, 23 December 2008, p. 69.

## B.4 Inclusion of surface barriers in trenching costs

Trenching costs represent a significant network cost component incurred in providing the ULLS. The TEA model includes surface barrier costs as a component of trenching costs; in particular, it provides estimates in relation to:

- the cost of digging (breaking and reinstating) the concrete surface;
- underground boring where a driveway precludes digging;
- cost for back filling trenches with soil and re-instating the surface with turf for main cable, where cables are laid in areas which do not have existing infrastructure; and
- the gradient of the terrain within the ESA.

The TEA model also provides four different ratios<sup>494</sup> to reflect the type of surface barriers in which the trenches are being laid.

### Submissions

#### *Telstra*

Telstra submits that trenching costs are derived by multiplying the competitive contractor's rate that Telstra is charged for breakout, placement and reinstatement in different ground surface types by the length of trenches that requires such activities. Telstra contends that the *Access Network Modelling Costing Information* sets out different rates for the breakout and reinstatement of different surface barriers and that these reflect the current efficient market rate.<sup>495</sup>

Telstra asserts that the breakout, placement and reinstatement costs would be an unavoidable component of costs if an access seeker sought to replicate the entire copper network today.<sup>496</sup>

Telstra also submits that there are a number of statutory obligations which they and any access seeker would face, with respect to reinstatement.<sup>497</sup> In addition to these requirements, Telstra submits that the installation of infrastructure is subject to local government planning approval and the relevant constituent planning laws.

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<sup>494</sup> Telstra, *Telstra's Efficient Access Model - Model Documentation*, 3 March 2008, p. 48.

<sup>495</sup> Telstra, *Response to the ACCC's Discussion Paper*, 12 August 2008, p. 18.

<sup>496</sup> Telstra, *Response to the ACCC's Discussion Paper*, 12 August 2008, p. 18.

<sup>497</sup> Statutory obligations sighted by Telstra include: *Telecommunications Act 1997 (Cth)*, Schedule 3, section 8; *Telecommunications Code of Practice 1997*; and *Telecommunications (Low-impact Facilities) Determination 1997*.

Telstra submits that having regard to the statutory criteria as set out in section 152AH of the TPA, trenching costs which take into account different surface barriers are reasonable on the basis that:

- competition is promoted when access prices do not discriminate between access seekers and the downstream operations of the access provider;
- to encourage efficient investment in the CAN infrastructure, operators must be able to recover the costs of new investment and in relation to the ULLS this will be achieved if prices reflect the cost of investments such as the costs of breakout placement and reinstatement in different ground types;
- to encourage the efficient use of infrastructure prices must be set so that the value that access seekers place on using that infrastructure is at least as high as the resources cost associated with its provision and use over the long run;
- it promotes Telstra's legitimate business interests by setting costs which reflect different costs of breakout, placement and reinstatement; and
- access seekers interests are promoted when prices are set which do not discriminate against them relative to the Telstra retail business unit.<sup>498</sup>

Telstra states that the ratios used for breakout, placement and reinstatement in the TEA model were derived through the use of subject matter experts; reviewing numerous network planning maps; analysing various different lot sizes and estimations based on standard blocks and the proportion of cable which would traverse existing streets.<sup>499</sup>

Telstra contends that any new entrant replacing or building over the existing network would have to negotiate all streets, footpaths and driveways that traverse the conduit route and as such the ground ratios must reflect the actual ground composition.<sup>500</sup>

In response to the Draft Decision, Telstra submits that the ACCC has indicated a preference for considering the cost incurred by Telstra when assessing the inclusion of surface barriers in trenching costs but that this is inconsistent with its previously applied standard of efficient and forward-looking costs. Telstra submits that the ACCC intends to apply this exception where it believes it is warranted, thereby removing any consistent, certainty or predictability from its pricing principles.<sup>501</sup>

Telstra submits that there are a number of problems with the Draft Decision, namely:

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<sup>498</sup> Statutory obligations sighted by Telstra include: *Telecommunications Act 1997 (Cth)*, Schedule 3, section 8; *Telecommunications Code of Practice 1997*; and *Telecommunications (Low-impact Facilities) Determination 1997*, p. 19 & 20.

<sup>499</sup> Telstra, *Response to Discussion Paper*, 12 August 2008, p. 21.

<sup>500</sup> Telstra, *Response to Discussion Paper*, 12 August 2008, p. 22.

<sup>501</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, pp. 70-71.

- the Draft Decision lacks any link with the practical reality of firms' costs and the competitive process in the market;
- Telstra has incurred trenching costs of a similar magnitude to those included in the TEA model which have not been taken account of by the ACCC;
- the TEA model allows for a significant proportion of cables to be placed in open trenches in the calculation of forward looking efficient network costs;
- the ACCC appears to incorrectly conclude that the TEA model is based on actual costs;
- the ACCC has incorrectly changed the inputs in the TEA model when undertaking its own scenario testing, eliminating trenching and reinstatement costs.<sup>502</sup>

Telstra indicates that this leads to the incorrect conclusion that the cost estimate is below \$30.<sup>503</sup>

#### *Practical realities*

In response to the Draft Decision, Telstra submits that the ACCC is seeking to include network cost savings that Telstra may have achieved by building the network over a number of decades and combine these cost savings with those which a new entrant may incur in building the network today. Telstra submits that no carrier can benefit from both of these advantages. Telstra submits that it would not be reasonable for the ACCC to select a timeframe for any subset of inputs into the TEA model on the basis of cost minimisation.<sup>504</sup>

Telstra also submits that the ACCC has focused on the historical costs incurred in building the network and has no concern for the additional efficiently incurred costs associated with building a network in the past, for example, Telstra submits that when the network was built demand was unknown. Telstra submits that as the network has grown it has had to augment the network with new cables and conduit to meet demand, leading to redesign of the network. Telstra also submits that the existing network is a not a product of inefficient design, but rather a product of needing to meet demand.<sup>505</sup>

Telstra contends that the ACCC's approach lacks any link with the reality of firms' costs and the competitive process. Telstra concludes that the mixing of the cost standard is:

- harmful to the statutory objective of promoting competition and encouraging efficient investment;

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<sup>502</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p.72.

<sup>503</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p.72.

<sup>504</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p.72.

<sup>505</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 73.

- inconsistent with Telstra's legitimate business interests and goes beyond the legitimate business interests of access seekers;
- undermines regulatory predictability;
- impulsive and unreasonable, suggestive of a predisposition to attain a particular outcome.<sup>506</sup>

#### *Telstra's costs incurred*

In response to the Draft Decision, Telstra submits that the ACCC's belief that Telstra has not incurred the costs of the same magnitude as those included in the TEA model seems based on the fact that developers excavate and reinstate trenches in new estates. Telstra submits that Optus' rationale appears to be the same as the ACCC's. Telstra submits that the ACCC's scenario and Optus' views are not relevant as they relate to historic costs.<sup>507</sup>

Telstra considers that its 2008 Undertaking price term is closer to the efficient forward looking TSLRIC+ of a new entrant. Telstra further submits that prices based on historically incurred costs are not what would eventuate in a competitive market.<sup>508</sup>

Telstra further submits that notwithstanding the above contention, it has had to dig and reinstate trenches to a similar extent as those included in the TEA model. Telstra submits that both in the model and in practice, the only time Telstra does not incur breaking and re-instatement costs is when trenches are provided by developers in new estates. Telstra also submits, that over time Telstra has had to add cable capacity and new routes to customers initially connected in a greenfields estate.<sup>509</sup> Telstra submits that if they had installed a cable in a greenfields estate in 1980, over the next 30 years Telstra may have had to re-dig, lay cables and re-instate the trench. Accordingly, Telstra disagree with the scenario outlined by the ACCC in its Draft Decision.<sup>510</sup>

#### *Cables placed in open trenches*

Telstra, in response to the Draft Decision, submits that the TEA model estimates the amount of trenching necessary in the construction of a forward looking, efficient new network. Telstra submits that the TEA model does not include costs for breaking, digging and re-instating trenches in greenfields estates. As such, Telstra submits that the costs included in the TEA model are substantially lower than the cost of construction elsewhere.<sup>511</sup>

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<sup>506</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 73.

<sup>507</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, pp.73-74.

<sup>508</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p.74.

<sup>509</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p.74.

<sup>510</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p.74.

<sup>511</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p.75.

Telstra also submits that the total proportion of conduit placed in open trenches is 6.95 per cent in the TEA model. Telstra therefore submits that only those lines outside of new estates and not shared between the main and distribution cables or within the distribution network are included in the calculations for breaking and re-instating surface barriers.<sup>512</sup>

Telstra submits that the ACCC has consistently sought that 13 per cent of trench lengths have no attribution to trenching and reinstatement. Telstra contends that the ACCC has increased this input to a range of 13 to 17 per cent, on what Telstra considers to be the use of a costs incurred constraint.<sup>513</sup>

Telstra's view is that since the TEA model allows for a substantial proportion of conduit to be placed in open trenches, which attracts no costs; the ACCC's concerns regarding whether or not Telstra actually incurred these costs is unwarranted and unsuitable.<sup>514</sup>

#### *Forward-looking costs*

In response to the Draft Decision, Telstra submits that the TEA model calculates the efficient and forward-looking costs incurred by a network built again today. Telstra also submits that the TEA model includes efficient design of the routes, best-in-use technology and the investment necessary to purchase and install the equipment. Telstra submits that, despite this the ACCC has misinterpreted Telstra's use of base data to justify its adoption of costs incurred.<sup>515</sup>

Telstra contends that it did not seek to use actually incurred costs as the basis for determining efficiently incurred costs. Telstra also contends that they did not initially provide evidence of historically incurred costs because historically incurred costs are irrelevant.<sup>516</sup>

Telstra rejects the ACCC's view that the TEA model includes costs for retrenching and repaving where the local copper pairs were initially laid. Telstra submits that the TEA model calculates the costs an efficient provider would incur to build the network today and does not calculate the costs of the existing network.<sup>517</sup>

#### *ACCC's model inputs*

In response to the Draft Decision, Telstra submits that the ACCC has tested the reasonableness of Telstra's Proposed Monthly Charge with a set of input parameters, which it deems reasonable. Telstra submits that the ACCC considers that it is reasonable to assume that an access network can be built and reinforced over time through the city centre of suburbs and towns without facing a concrete footpath or

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<sup>512</sup> Telstra, *Response to the ACCC's draft decision*, 23 December 2008, p.75.

<sup>513</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, pp.74-75.

<sup>514</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p.76.

<sup>515</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p.76.

<sup>516</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p.76.

<sup>517</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p.76.

road. Telstra submits that as the ACCC considers that 13 to 17 per cent of lines are constructed in greenfields, then 83 to 87 per cent of lines can be placed in turf.<sup>518</sup>

Telstra submits that the above scenario is unreasonable and that there is no possibility that such a case would rise and that it is akin to vendors providing equipment without charge.<sup>519</sup>

Telstra also submits that it will always incur breakout and restoration costs in building or reinforcing its network. Telstra further submits that this view is reinforced by a range of municipal and government regulations and rules governing the reinstatement of concrete when roads and footpaths are excavated. Telstra contends that any assumption that reinstatement of roads and footpaths does not occur “defies credibility”.<sup>520</sup>

Telstra concludes by noting that Ovum’s engineering report recognises that surface barriers cannot be assumed away. Telstra notes that they support this position and makes liberal use of boring in its model inputs, as suggested by Ovum.<sup>521</sup>

#### *Telstra’s response to Access Seekers*

In response to access seekers, Telstra submits that Optus infers that the only part of the statutory criteria which is relevant for accepting an Undertaking is Telstra’s legitimate business interests. Telstra submits that this is incorrect and other relevant criteria include promotion of competition and encouraging efficient investment.<sup>522</sup>

In response to Optus’ submission that a cap should be placed on cost recovery so that Telstra does not recover costs that exceed its historical prudently incurred costs, Telstra submits that historic costs would not promote Telstra’s legitimate business interests or satisfy the legislative criteria. Telstra also submits that an efficient, forward looking TSLRIC+ is the appropriate cost standards for pricing the wholesale CAN. Telstra also submits that this issue has also been decided by the ACCC and that the Australian Competition Tribunal has concurred.<sup>523</sup>

Telstra also submits in its response to access seekers that Optus may be suggesting that, rather than impose historic cost ceilings, one should “mix and match inputs into a TSLRIC+ model”. Telstra submits that it is inappropriate to mix and match methods as such an approach will mean that none of the statutory objectives for which the model is intended would be met. Telstra further submits that basing trenching costs on historic costs will mean that the output will not replicate the costs which would be incurred by a new entrant in a competitive market.<sup>524</sup>

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<sup>518</sup> Telstra, *Response to the ACCC’s Draft Decision*, 23 December 2008, p.77.

<sup>519</sup> Telstra, *Response to the ACCC’s Draft Decision*, 23 December 2008, p.78.

<sup>520</sup> Telstra, *Response to the ACCC’s Draft Decision*, 23 December 2008, p.78.

<sup>521</sup> Telstra, *Response to the ACCC’s Draft Decision*, 23 December 2008, p.78.

<sup>522</sup> Telstra, *Response to access seeker submissions*, 18 November 2008, p. 57.

<sup>523</sup> Telstra, *Response to access seeker submissions*, 18 November 2008, p. 57.

<sup>524</sup> Telstra, *Response to access seeker submissions*, 18 November 2008, p. 58.

Telstra also rejects that historic costs would be less than the TSLRIC+ on the basis that Telstra's actual network has 34.5 per cent more trench distance than what is included in the TEA model.<sup>525</sup>

In response to access seekers, Telstra submits that the TSLRIC+ methodology is designed to mimic the price outcomes of a competitive market and that some of the costs included are not reflective of those actually incurred by Telstra. Telstra cites that their actual network includes over 80 per cent more manholes and 20 per cent more pits than those included in the TEA model.<sup>526</sup>

In response to Ovum, Telstra submits that Ovum considers that concrete surface barriers could be avoided when building a new network. Telstra submits that they agree with this view and this has been accounted for in the TEA model. Telstra also submits that where concrete cannot be avoided, Telstra assumes boring in the vast majority of cases.

Telstra submits that approximately 53 per cent of all distribution conduit routes outside of new estates are placed into open trenches. Telstra also submits that approximately 40 per cent of distribution conduit is placed using lateral boring, and only eight per cent requires concrete breakout and restoration.

Telstra reject Ovum's claim that drains and easements could be used to place cables on the basis that there is no evidence to suggest that this technique is possible and that Telstra applies "best in-use worldwide practices, not theoretical examples."<sup>527</sup>

Telstra's view is that there is no support for Ovum's claim that breakout and reinstatement costs could be avoided to any greater extent than they already have been.<sup>528</sup>

In response to Optus' submission, Telstra submits that Optus argue two points. First, that assumptions about surface barriers should be based upon the surface barriers historically faced by Telstra; and second, that the extent to which trenching and reinstatement costs were incurred historically remains largely unsubstantiated.<sup>529</sup> Telstra restates its view that historic costs which it has faced are not relevant to the analysis of forward looking costs. Telstra also submits that Optus seek to draw support for this aspect of its submission by reference to the High Court's decision in *Telstra Corporation Ltd v The Commonwealth* [2008] HCA 7. Telstra submits that this is misplaced as the decision related to specific declared services and whether those provisions affect an acquisition of property other than on just terms. Telstra contends that the decision does not concern the manner in which the ACCC applies or should apply access pricing methodology.<sup>530</sup>

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<sup>525</sup> Telstra, *Response to access seeker submissions*, 18 November 2008, p. 58.

<sup>526</sup> Telstra, *Response to access seeker submissions*, 18 November 2008, p. 59.

<sup>527</sup> Telstra, *Response to Ovum*, 5 December 2008, p.12.

<sup>528</sup> Telstra, *Response to Ovum*, 5 December 2008, p.13.

<sup>529</sup> Telstra, *Response to access seeker submissions*, 1 April 2009, p. 38.

<sup>530</sup> Telstra, *Response to access seeker submissions*, 1 April 2009, p. 38.

In relation to the extent of trenching and reinstatement costs which were incurred historically, Telstra submits that while it does not consider this information relevant, it has prepared analysis of the trenching and reinstatement works that Telstra has undertaken in the past.<sup>531</sup> Telstra submits that had it included in the TEA model historical costs from 2000 to 2008, the cost estimate would be higher.<sup>532</sup>

Telstra submits that the ACCC has criticised the analysis which it has provided on the basis that it only covered a short period Telstra's history. Telstra notes however, that prior to the year 2000, approximately 2000 Telstra unionised workforce undertook all trenching activity and as a consequence the company did not keep detailed records of the type of surface barriers that were dug, trenched or reinstated.<sup>533</sup>

Telstra submits that the facts above starkly contrast with Optus' assertion that Telstra has not incurred costs associated with breakout and reinstatement of surface barriers. Telstra also rejects Optus' claim that:<sup>534</sup>

- the CAN was constructed in a gradual manner, by 1987 all areas in Australia has basic telephone services; and
- the bulk of the CAN construction occurred in greenfields development in farmland where the predominant surface is turf.

Telstra submits that the majority of the CAN construction did not take place from the 1950s to the 1980s. Telstra notes that in 1986/87 financial year Telstra reported that it had 6.8m basic access lines, and this was just 65 per cent of the lines in 2001/02. Telstra also submits that a significant amount of CAN construction involved in adding capacity occurred after the 1980s. This demand was driven by infill housing; second phone lines for fax and later dial-up internet and strong growth in apartment complexes and multi-dwelling units. Telstra also submit that the real value of its investment in the CAN trenching, ducting in cables from 1987/88 to 2006/07 is [begin c-i-c] [redacted] [end c-i-c] in 2007/08 dollars.<sup>535</sup>

Telstra also rejects Optus' claim that the bulk of CAN construction occurs in greenfields development. Telstra submits that in recent decades it has continued to invest significantly in Band 2 areas. Much of the investment has been due to additional demand from existing customers and for infill and multi-dwelling unit housing.<sup>536</sup>

Telstra also submits that in the past Telstra has been required to incur the costs of digging trenches in new estates as trench sharing is only a recent phenomenon. Telstra

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<sup>531</sup> Refer to *Statement of* [begin c-i-c] [redacted] [end c-i-c], 11 March 2009 and *Statement of* [begin c-i-c] [redacted] [end c-i-c], 11 March 2009.

<sup>532</sup> Telstra, *Response to access seeker submissions*, 1 April 2009, p. 38.

<sup>533</sup> Telstra, *Response to access seeker submissions*, 1 April 2009, p. 38.

<sup>534</sup> Telstra, *Response to access seeker submissions*, 1 April 2009, p. 39.

<sup>535</sup> Telstra, *Response to access seeker submissions*, 1 April 2009, p. 39.

<sup>536</sup> Telstra, *Response to access seeker submissions*, 1 April 2009, p. 39.

notes that in a submission provided that trench sharing only become wide-spread in the mid-1990s.<sup>537</sup>

Telstra considers that if a historical approach was adopted a \$30 ULLS price would still be reasonable but notes that by using these costs the ULLS cost would increase by \$11.46.<sup>538</sup>

#### *Other parties*

Optus and Adam Internet et al submit that the TEA model's surface barrier assumptions lead to an estimate of trenching costs which is higher than both:

- Telstra's historically incurred costs; and
- the costs a new entrant would incur in building a more efficient network.<sup>539</sup>

Ovum, Optus, Network Strategies and Adam Internet et al all submit that Telstra did not historically incur trenching costs of the same magnitude as those included in the TEA model. As such, Optus and Adam Internet et al submit that Telstra should not be able to recover costs that exceed its actual historically incurred costs.<sup>540</sup>

MJA in its review of the TEA model concluded that there was merit in Telstra's approach to including surface barrier costs to trenching costs as it takes into account different ground types and construction activities and will yield accurate costs when applied appropriately. However, they noted two concerns:

- the need for a link between the ratios used and the cost estimates. MJA states that the type of trenching used (digging, boring and ploughing) must be cost efficient and that it was not clear whether Telstra had conducted this analysis; and
- trenching costs must reflect the ability to share costs.<sup>541</sup> (discussed further in section B.7.)

Optus and Ovum states that the TEA model assumes that all trenching would take place in Band 2 ESAs that have the same percentage of rocky terrain; thereby increasing costs above those actually incurred.<sup>542</sup>

Ovum considers that while Telstra has done a credible job in estimating the surface breakout and restoration activities a new provider would seek in replicating the

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<sup>537</sup> Telstra, *Response to access seeker submissions*, 1 April 2009, p. 39.

<sup>538</sup> Telstra, *Response to access seeker submissions*, 1 April 2009, p. 39.

<sup>539</sup> Optus, *Response to ACCC's Discussion Paper*, August 2008, p. 44; Adam Internet et al, *Response to ACCC discussion paper*, August 2008, p. 10.

<sup>540</sup> Optus, *Response to ACCC's Discussion Paper*, August 2008, p. 44; Adam Internet et al, *Response to ACCC discussion paper*, August 2008, p. 10.

<sup>541</sup> Marsden Jacob Associates, *Review of the TEA model*, 12 August 2008, p. 9.

<sup>542</sup> Optus, *Response to ACCC's Discussion Paper*, August 2008, p. 43; Ovum, *TEA model (v1.0) engineering review*, 6 August 2008, p. 36.

network, it states that, with careful planning, many of these costs would be avoided. Ovum cites the laying of fibre cables in South Perth where lateral boring through nature strips was used to reduce the costs of installing a new network.<sup>543</sup>

Network Strategies reports that if Telstra were laying large amounts of copper today in highly developed urban and metropolitan areas, then they would expect Telstra to avoid expensive surface barriers and reinstatement by trenching turf where possible and using extensive drilling.<sup>544</sup>

Adam Internet et al consider that Telstra has recouped the full cost of the CAN many times over and that the breakout, placement and reinstatement costs only occur once and as such are sunk. Adam Internet et al submit that the ACCC's interpretation of TSLRIC has meant that Telstra has over-recovered these sunk costs because of an over-emphasis on the obligation to consider Telstra's legitimate business interests. Further, Adam Internet et al opine that with the advent of the National Broadband Network, the value of the CAN to access seekers will decline and as such, Telstra's legitimate business interests will have been realised.<sup>545</sup>

In response to the Draft Decision Optus contends that Telstra did not incur significant costs relating to surface barriers in the construction of the CAN as construction mostly occurred in greenfields developments. To support this contention, Optus submits that the CAN was constructed in a gradual manner, with most of the CAN construction occurring in the second half of the 20<sup>th</sup> century.<sup>546</sup>

Optus contends that the age of Telstra's cable also supports its view that the CAN was constructed in a gradual manner with 50 per cent of cable older than 20 years; 30 per cent older than 30 years; and 10 per cent predates 1950.<sup>547</sup>

Optus notes that early telephone services had limited coverage of 15 miles (approximately 24 kilometres) from the General Post Office in Sydney and Melbourne and 10 miles (approximately 16 kilometres) from other capitals by 1930. However, by the late 1980's all areas in Australia had basic phone services. Optus further submits that the majority of the CAN development took place in the intervening years, but particularly the 1950's to 1980's. Optus also submits that the construction of the CAN coincided with the post-war expansion of metropolitan area and suburbs replacing farmland around all major metropolitan centres. Optus submits that urban growth historic maps support their view that Telstra were not expending their network into developed areas.<sup>548</sup>

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<sup>543</sup> Ovum, *TEA model (v1.0) economic review*, 6 August 2008, p. 38.

<sup>544</sup> Network Strategies, *Report for Optus*, 5 September 2008, p. 69.

<sup>545</sup> Adam Internet et al, *Response to the ACCC's discussion paper*, August 2008, p. 9.

<sup>546</sup> Optus, *Response to the ACCC's Draft Decision*, December 2008, p. 20.

<sup>547</sup> Optus, *Response to the ACCC's Draft Decision*, December 2008, p. 21.

<sup>548</sup> Optus, *Response to the ACCC's Draft Decision*, December 2008, p. 21.

Optus also submits that the CAN was predominately built in greenfields and seeks to support this statement with a statement from [begin c i c] Chris Willis [end c i c] who states:

...most developments generally occur in Greenfield developments; that is, areas with no housing or associated road and footpath infrastructure nor any utility and telecommunications infrastructure.<sup>549</sup>

Optus contends that it is not necessary to incur significant surface barrier costs in the construction of the CAN and that surface barriers costs will be typically be incurred where typical industry practise is in planning and constructing telecommunications infrastructure in greenfields.<sup>550</sup>

Optus states that based on the above evidence, it can be inferred that Telstra did not historically incur the costs to the extent they are included in the TEA model and that the ACCC's approach in the Draft Decision is correct.<sup>551</sup>

Ovum, in their advisory note to the ACCC notes that some cables could be efficiently placed above ground and considers that this should be accounted for in the TEA model inputs. Ovum also remains concerned in relation to the method of estimating the proportion of breakout and reinstatement based on DA density. Ovum notes that there is no independent method to estimate these proportions and that Telstra have not verified the input or provided actual quantities.<sup>552</sup>

Accordingly, Ovum concludes that these activities remain unverified and the actual quantities of surface breakout and reinstatement activities remain uncertain.<sup>553</sup>

### **ACCC view**

The ACCC notes Telstra's key reasoning for the inclusion of the costs of breaking and re-instating surface barriers, as a component of trenching costs, is that:

- the breakout, placement and reinstatement costs would be an unavoidable component of costs if an access seeker sought to replicate the entire copper network today; and
- a new entrant would have to have regard to the environment as it exists today and therefore would not be able to install its network in greenfield conditions.

The ACCC considers that Telstra's arguments for applying breaking and reinstating costs to trenching costs are flawed, and therefore the inclusion of these surface barrier costs is not a reasonable modelling assumption. In particular, the inclusion of these

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<sup>549</sup> Optus, *Response to the ACCC's draft decision*, December 2008, p. 21.

<sup>550</sup> Optus, *Response to the ACCC's draft decision*, December 2008, pp. 21-22.

<sup>551</sup> Optus, *Response to the ACCC's draft decision*, December 2008, p. 22.

<sup>552</sup> Ovum, *Engineering Advisory Note*, 2 February 2009, pp. 10-11.

<sup>553</sup> Ovum, *Engineering Advisory Note*, 2 February 2009, p. 11.

costs results in an overestimation of the efficient costs of providing the ULLS in the long run.

Firstly, the ACCC considers that the access provider as the hypothetical operator is the appropriate assumption when modelling the TSLRIC+ of providing the ULLS as this ensures appropriate signals for competitors to efficiently build their own infrastructure where bypass is possible or to buy the regulated service. In particular, the ACCC considers that for access seekers to make efficient decisions concerning whether to build network infrastructure or buy the services, TSLRIC+ should be based on the efficient costs the access provider will incur in the long run given its current network design and architecture. It should not be based on the assumption that the access provider can start again with a blank slate. If the access seeker can, over the long run, provide the service at a lower cost than the access provider, it is economically efficient for the access seeker to duplicate the infrastructure.<sup>554</sup>

Secondly, the ACCC considers that Telstra's implementation of TSLRIC+ is inherently inconsistent in its application of the hypothetical operator. In particular, the Telstra applies a scorched node approach to modelling the CAN yet Telstra assumes that the new entrant as the hypothetical operator would replicate Telstra's entire copper network and therefore would face costs such as the breaking and reinstating of concrete. The ACCC considers that a new entrant would not choose this deployment option for those parts of the network that are potentially replicable especially when compared to other options presently available, such as wireless technology, that do not require such significant costs to be incurred.

The consequences of the inherent inconsistencies in Telstra's application of the hypothetical operator means that the costs of the hypothetical network are artificially inflated as it assumes that the new entrant will repeat the inefficient deployment decisions involving costs such as breaking and re-instating surface barriers, which may not be incurred in a forward-looking network design. In this regard, inclusion of surface barrier costs to trenching costs when modelling the CAN would not produce estimates that are efficient and forward-looking.

The ACCC notes Telstra's comments that the ACCC's own scenario testing of the TEA model which assumes trenching turf only is not a realistic assumption. The ACCC considers that it conducted its own scenario testing of the TEA model to further test the TEA model to determine what results would be achieved by attempting to overcome some of the inherent inconsistencies in the application of hypothetical operator. As the starting point of the hypothetical network is the access provider's actual network design (as designed in TEA model), it is questionable whether any future deployment to provide services delivered over the CAN, would involve the costs involved in breaking and re-instating surface barriers - in fact, the access provider is likely to try to avoid such significant costs by considering other deployment options. By assuming trenching turf only, the ACCC has attempted to replicate the scenario where no breaking and re-instatement surface barrier costs would be incurred in an efficient forward-looking network.

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<sup>554</sup> Statement by Graeme Woodbridge, *Telstra Corporation Limited (No 1 and 2)* [2000] ACompT. paragraphs 80 and 81.

The ACCC notes Telstra's comment that the ACCC has been inconsistent with its preferred application of the cost base to the TEA model. Telstra considers that the ACCC has indicated a preference for costs incurred (historic costs) by Telstra when assessing the inclusion of surface barriers in trenching costs but that this is inconsistent with its previously applied standard of efficient and forward-looking costs. Similarly, Telstra suggest that the ACCC has not taken into account the practical realities of firms' costs and the competitive process if it seeks to include cost savings that Telstra may have achieved in building the network as well as cost savings that a new entrant may achieve when building the network today. Telstra argues that no carrier can benefit from both cost savings.

The ACCC clarifies that, whilst it has sought historic and current cost information from Telstra, it notes that it has not selectively applied these cost bases. Rather, for the purposes of estimating the efficient costs of providing the ULLS in the long run, the ACCC has indicated a preference for current cost information. It will also have regard to actualities of network deployment given the hypothetical network assumption can lead to unrealistic deployment outcomes. However when the ACCC is required to assess an undertaking according to specific legislative criteria such as considering the 'legitimate business interests of the access provider' criterion and the 'direct costs of providing access to the declared service'<sup>555</sup> it uses the appropriate form of information, such as the historic cost information of the access provider.

Therefore, the ACCC notes that historic costs should not be applied to the TEA model for the purpose of estimating efficient and forward-looking costs. The ACCC agrees with Telstra's statement that basing trenching costs on historic costs will mean that the TEA model output will not relate to costs incurred by a new entrant in a competitive market. In this regard, the TEA model's estimate of a TSLRIC+ monthly charge of \$58.00 for Band 2 ESAs if the model applied actual costs incurred by Telstra between 2000 and 2009, is not relevant to the exercise of determining whether the TEA model produces efficient and forward-looking costs of providing the ULLS.

The ACCC notes that access pricing must have regard to Telstra's legitimate commercial interests as set out in section 152AH of the TPA. This recognises that Telstra should be allowed to recover its efficient costs from investments used to provide the ULLS. In this regard, the ACCC considers that the information Telstra provided in relation to the costs it has incurred in breaking and reinstating concrete has been particularly useful in considering the costs Telstra has incurred overtime.

The ACCC notes that it accepts legitimately incurred surface barrier costs such as those involved in actual network build or further augmenting the network. Any breaking and restatement costs involved in breaking and restating for maintenance purposes such as replacing existing cables because of faults and changes in technology are not costs that the ACCC would recognise as legitimate network costs incurred by Telstra. These costs are already allowed in operating and maintenance costs and therefore have already been accounted for. The ACCC notes that Telstra's submission in response to its section 152BT request of 16 December 2008 sets out the

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<sup>555</sup> Subsection 152AH(1) *Trade Practices Act 1974*.

costs of breakout and reinstatement of different surface types over the last nine years.<sup>556</sup> However, these costs are not distinguished according to whether they are incurred as part of the network build or as an operating and maintenance cost. Further, the ACCC notes that witness statements provided by Telstra as supporting evidence indicates that historic costs involved in breaking and reinstating surface barriers has often occurred due to replacing copper cables whether for technological or faulty cable reasons. This suggests that the costs of breaking and re-instating surface barriers have been incurred by Telstra but may be overestimated, which would overcompensate Telstra for costs that it did not incur.

In summary, the ACCC's final conclusion is that it is not satisfied that the costs of breaking and reinstating concrete included in the TEA model are reasonable and should not be included as part of the estimate of the efficient costs of providing the ULLS.

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<sup>556</sup> Telstra, *Telstra's Band 2 ULLS Undertaking - Responses to section 152BT information requests and further submissions*, Letter of 13 March 2009.

## B.5 Trench sharing

Trench sharing has the overall effect of reducing the costs of trenches as the initial costs of digging the trenches are shared with other utility providers. The TEA model provides for three types of trench sharing:

- sharing with utilities in new estates;
- sharing of the entrance facility costs between the inter-exchange and distribution network; and
- sharing of trenching between optical fibre main cable and copper main cable.

In version 1.0 of the TEA model, an overall trenching sharing value of 7.10 per cent was used to reflect the three types of trench sharing outlined above. Telstra revised the overall trench sharing input value to 6.95 per cent in version 1.3 of the TEA model.

### *Trench sharing with utility providers*

Utility trench sharing reduces trenching costs by sharing the costs between utility providers.

### **Submissions**

#### *Telstra*

Telstra submits that where a developer provides trenches for greenfield developments they will share these with other utility providers and consequently, the cost of these trenches is excluded from total costs calculated in the TEA model.<sup>557</sup> Telstra contends there is limited ability to share trenches outside of new estates because unless the carrier and utility providers are laying cable at the same time the trenches need to be re-opened and the cost of re-opening a trench is the same as digging a new one.<sup>558</sup> Telstra contends that generally, sharing can only occur where the carrier and utility providers intend laying infrastructure along the same route.<sup>559</sup> Telstra submits other factors that may limit the feasibility of utility trench sharing are:

- requirements for separation between equipment may require trenches which are wider and/or deeper than standard trenches, negating any benefits of sharing; and
- trench sharing with utilities creates unique risks. For instance, a burst water main can cause significant problems for telecommunications cables and means that trenches are rarely shared.<sup>560</sup>

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<sup>557</sup> Telstra, *Response to Discussion Paper*, 12 August 2008, p. 22.

<sup>558</sup> Telstra, *Response to Discussion Paper*, 12 August 2008, p. 22.

<sup>559</sup> Telstra, *Response to Discussion Paper*, 12 August 2008, p. 23.

<sup>560</sup> Telstra, *Response to Discussion Paper*, 12 August 2008, pp. 22-23.

Telstra submits that the treatment of trench sharing under a forward looking network model must reflect the costs of constructing a CAN, by a new entrant, with the same service potential but not the historical costs incurred by the incumbent. Telstra also submits that a new network builder must take the real world 'as it comes' and not assume that other companies would rebuild their own networks to maximise sharing opportunities.<sup>561</sup>

Telstra notes the ACCC's previous position that trench sharing should reflect accumulated cost savings. This means that trench sharing in the new estates is assumed to occur over a period of years.<sup>562</sup> Telstra submits that the ACCC should not have regard to historical trench sharing figures under a forward looking framework.<sup>563</sup> Further, assuming a rollout of greater than one year will result in the following implications:

- a progressive rollout may mean a new entrant failing to meet its SAOs. A progressive rollout from the start of the Undertaking period leaves many users without a service, some for the majority of the undertaking period which is against SAOs;
- this approach assumes that the new entrant commenced rolling out its network some years prior and completed the rollout at the beginning of the Undertaking, and that this is inconsistent with the forward looking model;
- trenching costs would increase if a rebuild was financed with debt as interest costs are accrued from the commencement of the network build to the time it would be placed in service;
- historic trench sharing figures have little or no relevance under a forward looking model because ULLS can only be provided over a full metallic pathway which is now only available to 7 percent of Band 2 services in operation being installed in new estates; and
- a network rebuild would not reflect the same economies of scale included in the TEA model especially if a smaller competitor with a relatively small market share increased its market share over time.<sup>564</sup>

Telstra also submits that while in greenfield estates they use the trenches provided by the developer there is often additional trenching required from the common trench to the boundary of the end-users property - these have not been included in the TEA

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<sup>561</sup> Telstra, *Response to Discussion Paper*, 12 August 2008, pp. 23-24 & p. 29.

<sup>562</sup> Telstra, *Response to Discussion Paper*, 12 August 2008, p. 24.

<sup>563</sup> Telstra, *Response to Discussion Paper*, 12 August 2008, pp. 23-25.

<sup>564</sup> Telstra, *Response to Discussion Paper*, 12 August 2008, pp. 23 – 24; Telstra, *Response to Draft Decision*, 23 December 2008, pp. 79-80.

model costs.<sup>565</sup> Telstra submits that a figure of 1 per cent for trench sharing is a conservative over-estimation of trench sharing in new estates in Band 2.<sup>566</sup>

In Telstra's response to access seekers it disagrees with Optus' contention that:

The TEA model is inconsistent in its application of TSLRIC+ in relation to new estate trenching as it models costs based on a forward looking new entrant rebuilding the network today but it also requires that a certain network design (i.e. designated by Telstra design rules) be followed by that new entrant. Costing based on mixing these concepts will lead to a price that could encourage inefficient bypass (as a new entrant would adopt a scorched earth network if the new entrant were rebuilding the network today) and will lead to cost recovery greater than is required to serve Telstra's legitimate business interests.<sup>567</sup>

In Telstra's response to the access seekers, it submits that there is no mixing of concepts as the design of the TEA model is efficient as network routes have been optimised using pre-existing rights of way.<sup>568</sup>

In response to Optus' submission regarding the FCC's use of sharing trenches in new estates, Telstra submits that its future ability to share developer provided trenches in relation to utility trench sharing and timeframes depends on the assumption of a network rebuild. Telstra considers that the trench sharing percentages adopted by the FCC are substantially greater than that used in the TEA model. Telstra also submits that the FCC explicitly warns against transferring trench sharing inputs from its universal service order into the determination of ULLS prices.<sup>569</sup>

In response to the Draft Decision, Telstra is critical of the ACCC and access seekers' view in relation to the application of TSLRIC+, particularly in relation to the timeframe for a network rebuild. In particular, Telstra reiterates its views on some points and makes the following additional criticism of the ACCC's methodology in determining the appropriate level of trench sharing, including that:

- it uses data from all geographic bands rather than Band 2 data; and
- it includes estates provisioned with fibre as well as copper lines even though these are removed from the TEA model which mean that cost savings are overstated and the average cost per line is understated.<sup>570</sup>

Further, Telstra submits that it has applied an efficient network design that would be followed by a new entrant:

A new entrant in a competitive market replicating Telstra's network will not have available to it open trenches that have since been reinstated. Instead the new entrant could

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<sup>565</sup> Telstra, *Response to Discussion Paper*, 12 August 2008, p. 29.

<sup>566</sup> Telstra, *Response to Discussion Paper*, 12 August 2008, p. 26.

<sup>567</sup> Optus, *Response to ACCC's Discussion Paper*, August 2008, p. 47.

<sup>568</sup> Telstra, *Response to Access Seeker Submissions*, 18 November 2008, p. 62.

<sup>569</sup> Telstra, *Response to Access Seekers Submissions*, 18 November 2008, p. 61.

<sup>570</sup> Telstra, *Response to Draft Decision*, 23 December 2008, p. 81.

only take advantage of open trenches in new estates that are under development during the course of the entrant's network build.<sup>571</sup>

Telstra's notes that while it disagrees with the ACCC method of determining a forward looking estimation of trench sharing in new estates, the ACCC's estimate itself is also excessive. Telstra submits that a 1 per cent level of trench sharing in new estates is conservative, and submits that [begin c-i-c] [redacted] [end c-i-c] per cent is a more accurate level of trench sharing in new estates in Band 2.<sup>572</sup> Therefore, Telstra reasons that by applying the ACCC's methodology to Band 2 only, a forward looking cumulative estimate of trench sharing in new estates would be [begin c-i-c] [redacted] [end c-i-c] per cent.<sup>573</sup>

In response to the Draft Decision, Telstra notes the ACCC's reasoning that it may be able to share trenches with other utilities despite Telstra's submissions to the contrary. Telstra submits that the website guidance only relates to an opportunity to share trenches between the boundary of a property and to the customer premises. Telstra notes these costs are not included in the TEA model.<sup>574</sup>

Following a submission from Optus which cites Donald McGauchie's comments in relation to the age of copper cables as evidence of Telstra laying cables into greenfields, Telstra have caveated Mr McGauchie's comments. Telstra notes that his comments may not be directly applicable to the present day.<sup>575</sup> Accordingly, Telstra submits that it would be inappropriate to use the result of such analysis for the purpose of costing Telstra's network and setting prices based on those costs because:

- the analysis does not take into account the fact that customers that purchased SIOs in 1950 are likely to have disconnected by 1999, thus SIOs provided in 1999 might be supplied using newer copper assets;
- the analysis includes assets that might have been retired or otherwise no longer in use;
- the analysis is based on SIOs in all bands, not just Band 2; and
- the analysis is based on the historical age of assets which is subject to historical circumstances, however in the current context, forward looking, economic assets lives are relevant.<sup>576</sup>

In support of its submission, Telstra has provided witness statements from [begin c-i-c] [redacted] [end c-i-c]. In [begin c-i-c] [redacted] [end c-i-c]

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<sup>571</sup> Telstra, *Response to Draft Decision*, 23 December 2008, p. 78.

<sup>572</sup> Telstra, *Response to Draft Decision*, 23 December 2008, p. 80.

<sup>573</sup> Telstra, *Response to Draft Decision*, 23 December 2008, p. 80.

<sup>574</sup> Telstra, *Response to Draft Decision*, 23 December 2008, p. 81.

<sup>575</sup> Telstra, *Telstra's response to the ACCC's December request for further information*, 13 March 2009, pp. 6-7.

<sup>576</sup> Telstra, *Telstra's response to the ACCC's December request for further information*, 13 March 2009, p. 7.

statement, he notes that in the early 1980's Telstra did not engage in trench sharing.<sup>577</sup> While [begin c-i-c] [redacted] [end c-i-c] notes that during his work on CAN planning, design and construction from the early 1980's to mid 1990's the majority of the work (upgrading the CAN by augmentation and installation) occurred in established suburbs or brownfield's areas.<sup>578</sup>

Telstra also submits that prior to 1988 there was limited trench sharing in new estates due to trade union opposition to the use of shared trenches. Telstra submits that by 1993, there was increased trench sharing as local councils began to lobby other utilities to install their infrastructure underground. Accordingly, Telstra concludes that it was not until the mid-1990s, that trench sharing in new estates began to be standard practice.<sup>579</sup> Telstra supports this conclusion with the statements of [begin c-i-c] [redacted] [end c-i-c]<sup>580</sup> and [begin c-i-c] [redacted] [end c-i-c].<sup>581</sup>

Telstra notes that it considers the TEA model should employ a forward looking input for trench sharing in new estates.<sup>582</sup>

However, Telstra submits that should the ACCC consider that Telstra has been able to access trench sharing in new estates for more than 14 years, this position would not be supportable.<sup>583</sup>

In response to access seeker submissions to the Draft Decision, Telstra reiterates its view in relation to a number of points and makes the following additional criticisms, that:

- a new entrant would incur cost increases of around 25 per cent if a lengthy network build period was incurred to achieve scale and a 15 year roll-out assumption is not reasonable;
- the network build time for Optus' HFC network was approximately three to four years, while Telstra's Next G network was one year;
- it is reasonable for the TEA model to reflect the leasing arrangements which are actually in place.<sup>584</sup>

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<sup>577</sup> Telstra, *Witness statement of [c-i-c start] [redacted] [c-i-c end]*, 11 March 2009, p. 9.

<sup>578</sup> Telstra, *Witness statement of [begin c-i-c] [redacted] [end c-i-c]*, 11 March 2009, p. 5.

<sup>579</sup> Telstra, *Letter to the ACCC – Trench sharing in new estates*, 30 March 2009.

<sup>580</sup> Telstra, *statement of [begin c-i-c] [redacted] [end c-i-c]*, 26 March 2009.

<sup>581</sup> Telstra, *statement of [begin c-i-c] [redacted] [end c-i-c]*, 26 March 2009.

<sup>582</sup> Telstra, *Telstra's response to the ACCC's Draft Decision*, 23 December 2008, pp. 78-79.

<sup>583</sup> Telstra, *Letter to the ACCC – Trench sharing in new estates*, 30 March 2009.

<sup>584</sup> Telstra, *Response to Access Seekers Submissions on the ACCC's Draft Decision*, 1 April 2009, pp. 40-43.

### *Other parties*

Adam Internet et al and Optus contend that the TEA model underestimates the level of trench sharing in new estates as the model assumes that the entire CAN is replicated within one year; and because an efficient operator would seek to share with utility providers when installing a replacement CAN.<sup>585</sup> Adam Internet et al acknowledge that in seeking to share trenches with utility providers a safe clearance distance would need to be observed, but this should not prevent the sharing of trenches.<sup>586</sup>

Adam Internet et al submit that when installing low-impact telecommunications facilities such as underground cables, the legislative framework<sup>587</sup> requires carriers to adhere to certain conditions including the obligation to co-locate facilities and take all reasonable steps to determine whether another carrier or utility provider is engaging or proposing to engage in a similar activity on the same land. Adam Internet et al submits that Telstra ignores this obligation.<sup>588</sup>

MJA reports that the TSLRIC+ framework often assumes that a network is built overnight. However, all of the input costs reflect the costs of the actual network built over time, thereby reflecting normal planning and construction activity where co-ordination of trench sharing and co-digging may be planned in advance. As such, MJA states that sharing with utilities should be allowed across the entire network.<sup>589</sup>

Optus submits that the TEA model is inconsistent in its application of TSLRIC+ in relation to new estate trenching as costs are based on a forward looking new entrant rebuilding the network today, but also require that Telstra's design rules are followed by the new entrant. Optus submits that using this as a basis for determining costs would lead to inefficient design and cost recovery which is greater than required to serve Telstra's legitimate business interests.<sup>590</sup>

Optus submits that Tom Hird's report *Role of TSLRIC in Telecommunications Regulation: A report for Optus*, concludes that the US FCC decision<sup>591</sup> held that trench sharing should assume several years of developer provided trenches in new estates. Optus submits that Hird considered that the FCC gave consideration to the appropriate degree of trench sharing in a forward looking TSLRIC model of network costs and determined that a predictive judgement needs to be made as to what the future sharing will be available to the incumbent.<sup>592</sup>

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<sup>585</sup> Optus, *Response to ACCC's Discussion Paper*, August 2008, p. 21; Adam Internet et al, *Response to ACCC ULLS Discussion Paper*, August 2008, p.10.

<sup>586</sup> Adam Internet et al, *Response to ACCC ULLS Discussion Paper*, August 2008, p.11.

<sup>587</sup> *Telecommunications Act 1997, the Telecommunications Code of Practice 1997 and the Telecommunications (Low-impact Facilities) Determinations 1997*.

<sup>588</sup> Adam Internet et al, *Response to ACCC ULLS Discussion Paper*, August 2008, p.12.

<sup>589</sup> Marsden Jacob Associates, *Review of the TEA model*, 12 August 2008, p. 10.

<sup>590</sup> Optus, *Response to ACCC's Discussion Paper*, August 2008, p. 48.

<sup>591</sup> Federal-State Joint Board on Universal Services, CC docket No. 96-45.

<sup>592</sup> Optus, *Response to Discussion Paper*, 12 August 2008, p 47.

Optus contends that while the TEA model is forward looking, Telstra's historical ability to share trenches is still relevant to the costing of the ULLS. Optus also submits that a new entrant would have access to all the available inputs of production including the availability of open trenches in new estates and new entrants would not be constrained by the technology choices of the incumbent. Optus submits that collectively, these concerns with the TEA model mean that there is likely to be a significant overestimation of the efficient cost of supply.<sup>593</sup>

Network Strategies report that, based on their experience, the TEA model significantly underestimates the level of trench sharing overall. Network Strategies asserts that Telstra's historical sharing figure may not be useful for cost modelling on the basis that a forward looking network would seek opportunities to share and co-locate.<sup>594</sup>

In response to the Draft Decision, Optus submits that it broadly supports the ACCC's view that the value adopted by Telstra for trench sharing is unreasonable and a more appropriate proxy for trench sharing in new estates is a cumulative trench sharing measure. However, Optus submits that the ACCC's 13 – 17 per cent value attributed to trench sharing in new estates is highly conservative, as the lower value of this range was considered conservative when it was initially derived in 2003, and subsequently as the CAN has continued to expand into new estates there is further opportunity for trench sharing.<sup>595</sup>

Optus submits that previous use of the 13 per cent value has resulted in Telstra being significantly overcompensated for trenching costs and that it is important for the ACCC to consider the implications of understating the level of utility trench sharing. Optus contends that only the efficient costs should be relevant to the pricing of the CAN and a more appropriate measure would be to update the base value of 13 per cent to reflect builds in subsequent years. Optus submits that the ACCC should consider re-evaluating the appropriate trench sharing value in new estates. Optus submits that when updating the ACCC's base value of 13 per cent for the increase in SIOs the proportion of trench sharing in new estates increases to 17.80 per cent for the 2007/08 financial year.<sup>596</sup>

Further, Optus asserts that current industry practice is that where utility trench sharing occurs in new estates, the costs are generally borne by the developer. Optus reasons this supports a higher value for trench sharing.<sup>597</sup>

In response to the Draft Decision, the CCC submits that it agrees with the ACCC's view expressed in the Draft Decision, however disagrees with its reasoning. The CCC

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<sup>593</sup> Optus, *Response to ACCC's Discussion Paper*, August 2008, p. 48.

<sup>594</sup> Network Strategies, *Report for Optus*, 5 September 2008, p.71.

<sup>595</sup> Optus, *Response to Draft Decision*, December 2008, p. 25.

<sup>596</sup> Optus, *Response to Draft Decision*, December 2008, p. 25.

<sup>597</sup> Optus, *Response to Draft Decision*, December 2008, p. 25.

submits that where Telstra has never incurred trenching costs, it is not reasonable to compensate them.<sup>598</sup>

Ovum, in an advisory note to the ACCC notes that in version 1.2 of the TEA model, the parameter relating to new estates in earlier versions has been replaced by a broader parameter described as *Cable placed in an Open Trench*. Ovum reasons that the allowance for new estates as part of the broader parameter is used to reduce overall the incidence of trench sharing.<sup>599</sup>

Ovum contends that on average “an efficient operator would seek to maximise the use of the open trench in coordinating its activities internally and with other trench users.”<sup>600</sup> Further, Ovum concludes that Telstra’s allowance of 1% for new estates in an overall allowance of 6.95% for trench sharing is a satisfactory estimate for the situation faced by an efficient operator.<sup>601</sup>

### ***Trench and conduit sharing***

Sharing between the IEN and the CAN is likely to reduce the total trench length, thereby reducing the overall cost of the network.

### **Submissions**

#### *Telstra*

Telstra submits that the TEA model takes into account different trench and conduit sharing costs in the form of:

- trench costs which are shared between the CAN and the IEN, with a TEA model default of 5 per cent sharing;
- main cable trench costs shared between ULLS (copper-fed) and non-ULLS (fibre-fed) services;
- trench costs shared between Telstra and other parties who lease conduit space in Telstra’s network and;
- trench sharing in the distribution network.<sup>602</sup>

Telstra submits that there is limited potential for sharing between the IEN and the CAN because “one must account for the fact that only two IEN routes traverse each ESA”. Telstra acknowledges that in a forward looking, efficient cost model the CAN and IEN would be expected to be built together as they are part of the same PSTN network.<sup>603</sup>

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<sup>598</sup> Competitive Carriers Coalition, *CCC Submission on Draft Decision*, December 2008, p. 9.

<sup>599</sup> Ovum, *TEA model (v1.2) engineering review*, 2 February 2009 p.12.

<sup>600</sup> Ovum, *TEA model (v1.2) engineering review*, 2 February 2009 p.12.

<sup>601</sup> Ovum, *TEA model (v1.2) engineering review*, 2 February 2009 p. 12.

<sup>602</sup> Telstra, *Response to Discussion Paper*, 12 August 2008, p. 26-27.

<sup>603</sup> Telstra, *Response to Discussion Paper*, 12 August 2008, p. 27.

Telstra contends that 10 per cent of trenches and conduits in the main network are shared by the main distribution network and the IEN, but this estimate is likely to be overstated. Where sharing does take place, Telstra submits that 50 per cent of costs are allocated to the CAN and 50 per cent to the IEN. This results in a TEA model default value of 5 per cent for the IEN and CAN sharing.<sup>604</sup>

Telstra submits that their approach as described in the *TEA Model Documentation* accounts for the sharing between the non-ULLS DAs and the ULLS DAs by ensuring that all DAs in each ESA share the costs proportionately. Telstra submits that this results in a small proportion of optical fibre, multiplexing and fibre termination costs being allocated to the ULLS and conversely, some amount of copper ULLS network costs are spread over the fibre-only fed DAs.<sup>605</sup>

Where conduit space is available, Telstra states that its policy is to lease this space when requested. Where space is leased Telstra states that they subtract the annual revenues received and that the revenues are allocated on a band by band basis.<sup>606</sup>

Based on precise measurements of trench sharing, Telstra submits that trench sharing occurs in 6.1 per cent of the CAN network. Telstra recognises that the primary source of trench sharing in the TEA model occurs between the main cable routes and the distribution cable routes, but that a small amount of trenching is also shared between separate distribution cables routes serving neighbouring DAs.<sup>607</sup> Telstra submits that they have assumed that no excavation or reinstatement is necessary when placing facilities, because these costs are costs incurred by the developer.<sup>608</sup>

In response to the Draft Decision, Telstra revised downward the proportion of conduit that could be expected to be placed in trenches that are shared between main and distribution networks or between adjacent DAs to 5.95 per cent.<sup>609</sup> This revision results in a decrease in the total amount of trench sharing in the TEA Model from 7.1 per cent to 6.95 per cent.<sup>610</sup>

Telstra submits that because a significant amount of conduit is placed in open trenches, the ACCC's concerns over whether Telstra has actually incurred these costs in the construction of its network are "unwarranted and inapposite."<sup>611</sup>

#### *Other parties*

MJA contends that sharing may occur between the distribution network trench and the inter-exchange trench and between the main cable trench and inter-exchange trench,

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<sup>604</sup> Telstra, *Response to Discussion Paper*, 12 August 2008, p. 27.

<sup>605</sup> Telstra, *Response to Discussion Paper*, 12 August 2008, p. 27.

<sup>606</sup> Telstra, *Response to Discussion Paper*, 12 August 2008, p. 28.

<sup>607</sup> Telstra, *Response to Discussion Paper*, 12 August 2008, p. 30.

<sup>608</sup> Telstra, *Response to Discussion Paper*, 12 August 2008, p. 30.

<sup>609</sup> Telstra, *Response to Draft Decision*, 23 December 2008, p. 75.

<sup>610</sup> Telstra, *Response to Draft Decision*, 23 December 2008, p. 75.

<sup>611</sup> Telstra, *Response to Draft Decision*, 23 December 2008, p. 76.

although to a lesser degree than the former. They also identify manholes as further infrastructure which may also be suitable for sharing.<sup>612</sup> MJA notes that there are no explicit sharing factors, other than for the entrance facility costs included in the TEA model, but recognise that Telstra has acknowledged that only half of the costs for the MDF block should be allocated to the CAN.<sup>613</sup> The ACCC notes that Telstra have revised this in the TEA model version 1.2.

MJA states that, overall, Telstra's inputs for trench sharing are likely to be underestimated.<sup>614</sup>

Ovum notes that the only source of revenue used in the TEA model is the conduit leasing revenue that applies to the ducts and pipes of the main network and that the conduit leasing annual revenues are calculated as a percentage of the total conduit sharing annual CAN. Ovum makes the following observations about the revenue calculations:

- the inputs into the model make no reference as to how they are calculated. Ovum states that it would be expected that revenue values are derived from the RAF, but these numbers could not be reconciled with RAF;
- the number of lines in Band 2 used in the formula are not the number of lines in the cost model; and
- the costs of ducts and pipes in the main network have been reduced by the amount of conduit leasing revenue.<sup>615</sup>

Ovum, in its advisory note for the ACCC considers that the level of duct sharing with the IEN is satisfactory for an efficient operator. Ovum does note however that this proportion should be supported directly from Telstra's data.<sup>616</sup>

### ***Trench sharing between optical fibre main cable and copper main cable***

Where fibre and copper main cables share trenches, the demand at fibre fed pillars is deducted from the total demand in the exchange causing an overall reduction in costs for that exchange, proportional to the demand served by fibre.

Telstra submits that optical main cable and copper main cable trench sharing is accounted for in the TEA model by sharing between non-ULLS DAs and ULLS DAs and ensuring that all DAs and ESAs share costs proportionately. Telstra submits therefore associated trenching costs are shared.<sup>617</sup>

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<sup>612</sup> Marsden Jacob Associates, *Review of the TEA model*, 12 August 2008, p.10.

<sup>613</sup> Marsden Jacob Associates, *Review of the TEA model*, 12 August 2008, p.10.

<sup>614</sup> Marsden Jacob Associates, *Review of the TEA model*, 12 August 2008, p. 9.

<sup>615</sup> Ovum, *TEA model (v1.0) economic review*, 6 August 2008, p. 14.

<sup>616</sup> Ovum, *TEA model (v1.2) engineering review*, 2 February 2009, p. 11.

<sup>617</sup> Telstra, *Response to Discussion Paper*, 12 August 2008, p. 27.

## ACCC view

The ACCC continues to hold its view, as expressed in its Draft Decision, that the TEA model default value for overall trench sharing in the CAN is an underestimate of the level of trench sharing in an efficient and forward-looking model of the CAN. Therefore, the ACCC is not satisfied that the default value of 6.95 in version 1.3 of the TEA model is reasonable and should not be included as part of the estimate of the efficient costs of providing the ULLS.

The ACCC notes that, of the three types of trench sharing activities in the TEA model that combine to produce the total trench sharing value in the CAN, it is the trench sharing with utilities in new estates that is significantly underestimated and therefore results in the overall trench sharing value being lower than would be expected in an efficient and forward-looking model of the CAN.

### *Utility trench sharing in new estates*

The ACCC continues to hold its view, as expressed in its Draft Decision, that Telstra's default trench sharing value in new estates of 1 per cent is a significant underestimate of the level of trench sharing in an efficient and forward-looking model of the CAN. This view is supported by submissions from access seekers that Telstra's default trench sharing value in new estates of 1 per cent is a significant underestimate.

Telstra has stated that its default trench sharing value in new estates is actually an over-estimation of trench sharing in new estates in Band 2. For the reasons set out below, the ACCC does not agree with this view.

The ACCC has estimated that trench sharing in new estates in Band 2 in the present day is likely to be around 13 to 17 per cent.

The ACCC has examined Optus' attempt to replicate the ACCC's trench sharing in new estates value and its subsequent conclusion to support the upper limit of the 13 to 17 per cent range.<sup>618</sup> The ACCC notes however that the lack of transparency and inconsistency in data used by Optus to derive the estimate means that it has placed less weight on this evidence.

The ACCC considers that the key areas of contention which has led to differences in views on the appropriate trench sharing value are:

- whether the degree of trench sharing in new estates in the past should be taken into account in the present day value, and if it should be taken into account, what methodology should be used;
- whether the trench sharing in new estates value should be based on instantaneous network build or deploying the network over a number of years;
- ACCC's estimated trench sharing value for new estates; and
- opportunities to trench share in the present day.

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<sup>618</sup> Optus, *Response to Draft Decision*, December 2008, p. 25.

Each of these issues are discussed, in turn, below.

*Is the historical level of trench sharing in new estates relevant in developing the present day trench sharing value?*

The ACCC considers that Telstra's estimated trench sharing value for new estates is premised on the new entrant as the hypothetical operator replicating Telstra's network, and not being able to exploit the opportunities to trench share that are available in the present day. In the ACCC's view, this is another example of where Telstra has been inconsistent in its application of the hypothetical operator - applying the access provider at times (as the TEA model is based on the existing network) and applying the new entrant at other times. This inconsistency has implications for the manner in which the trench sharing value for new estates is calculated. This inconsistency is clear in Telstra's statement that:

A new entrant in a competitive market replicating Telstra's network will not have available to it open trenches that have since been reinstated.<sup>619</sup>

The ACCC notes that Optus has also identified this inconsistency, when it states that Telstra has assumed that new estate trenching is based on a forward-looking entrant rebuilding the network today but requiring Telstra's design rules to be followed by the new entrant.<sup>620</sup>

The ACCC considers that as the TEA model is based on Telstra's existing network, the hypothetical network should be based on the current network, and therefore model assumptions should be consistent with the access provider as the hypothetical operator, for example, the actualities of network deployment are a relevant consideration. Therefore, the ACCC considers that Telstra's opportunity to trench share over time is relevant to its modelling of the current network. In this regard, taking account of the historical levels of trench sharing in new estates is relevant in estimating the present day trench sharing value.

The ACCC notes Ovum's view that Telstra's estimate of cables placed in open trenches as a satisfactory estimate "for the situation faced by an efficient operator",<sup>621</sup> however, the ACCC notes that Ovum is not specific as to who it assumes is the hypothetical efficient operator.

*Should the trench sharing in new estates value be based on instantaneous network build or deploying the network over a number of years?*

The ACCC considers that the trench sharing value for new estates should be based on a network build that occurs over a number of years.

As the TEA model applies a scorched node approach to modelling the CAN, the actualities of network deployment, such as network build having to occur over a

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<sup>619</sup> Telstra, *Response to Draft Decision*, 23 December 2008, p. 78.

<sup>620</sup> Optus, *Response to ACCC's Discussion Paper*, August 2008, p. 47.

<sup>621</sup> Ovum, *TEA model (v1.2) engineering review*, 2 February 2009, p 12.

number of years and taking account of Telstra's trenching sharing opportunities during this time, are relevant.

The ACCC considers that the application of TSLRIC+ should reflect the reality of a network deployment. It considers that network construction would generally be planned a significant time in advance and would most likely occur in conjunction with other operators and utility providers resulting in the use of open trenches in new estates thus reducing the cost to the access provider.

*ACCC's estimated trench sharing value for new estates in the present day*

The ACCC considers that cumulating the level of trench sharing that has occurred historically over time will provide an appropriate estimate of the trench sharing utilised by a hypothetical efficient operator in new estates in the present day. The ACCC considers that a trench sharing value of between 13-17 per cent approximates trench sharing potential from new estates across all of Band 2.<sup>622</sup>

The lower value of the range, the 13 per cent, was derived from actual data based on estimates of the accumulative stock of new estates over a period of 10 years from 1992/93 to 2000/01. The 13 per cent figure, initially derived in 2003,<sup>623</sup> was relied on in the ACCC's 2006 Final Decision on Telstra's ULLS undertaking.<sup>624</sup> The ACCC notes that it has been subject to significant previous industry analysis and was considered appropriate despite commentary that it was conservative and may understate historical trench sharing.<sup>625</sup>

The upper value of the estimated trench sharing range was derived by extending the previous methodology to include 2006-07 data. The ACCC calculated the trench sharing figure of 17 per cent by the following method:

- Using Australian Bureau of Statistics (ABS) data on the number of new dwellings constructed since 1992/93.<sup>626</sup> The practice of sharing trenches by utility providers was well established for new housing estates by 1992/93 and has hence been used as the first date for the inclusion of data.
- As the ABS Building Activity Survey does not disaggregate data for new dwelling constructions occurring in new estates and those occurring in already populated areas, a factor of 2/3 was applied to estimate the percentage of dwellings (since 1992/93) with shared trenches in Telstra's CAN.

The ACCC viewed that a factor of 2/3 could be used following the consideration of claimed assumptions made in a submission by Telstra in a previous regulatory

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<sup>622</sup> This figure has been re-calculated to include data up to 2006/07.

<sup>623</sup> ACCC, *Final Determination for model price terms and conditions of the PSTN, ULLS and LCS services*, October 2003, p. 37.

<sup>624</sup> ACCC, *Assessment of Telstra's ULLS monthly charge undertakings, Final Determination*, August 2006, p. 55.

<sup>625</sup> ACCC, *ULLS Access Dispute between Telstra and Optus, Final Determination*, March 2008 p. 94.

<sup>626</sup> Building Activity Survey – catalogue No. 8752.

process.<sup>627</sup> This factor applied to total number of new dwelling constructions completed since 1992 in each year to provide an estimate of the number of non-infill new estate dwellings per period. The ACCC notes that Telstra was informed of the use of a 2/3 factor on 18 December 2008, when the ACCC responded to Telstra's letter of 2 December 2008.

The ACCC notes Telstra's submission that the 13 to 17 per cent value takes account of all geographic bands and estates provisioned with fibre.<sup>628</sup> However, the ACCC considers as most new estates are likely to be in metropolitan areas, not in the CBD or rural areas, its calculated trench sharing in new estates value understates the degree of trench sharing in a hypothetical network.

#### *Opportunities to trench share in the present day*

The ACCC notes Telstra claim that when it applies the ACCC's cumulative approach to estimate trench sharing in new estates in the present day, the value it derives is lower than the ACCC's estimated trench value for new estates.

The ACCC considers that its estimate of trench sharing with new estates in the present day is actually an underestimate because a hypothetical efficient operator would seek to maximise trench sharing in new estates with other utility providers. The ACCC's estimate assumes that Telstra's actual trench sharing behaviour in the past has been optimal. The ACCC also notes comments by Optus and Adam et al. that an efficient operator would seek to exploit many of the opportunities available to trench share with utilities.

The ACCC agrees with Adam Internet et al's submission that utility trench sharing is a standard industry practice and legislation requires a carrier to take all reasonable steps to plan and to coordinate the co-location of cabling and facilities with other utility providers.<sup>629</sup> Despite Telstra's submissions regarding the limits of utility trench sharing, the ACCC supports the view of access seekers which emphasise these legal obligations and recognise utility trench sharing as an established practice. The ACCC also notes Telstra's acknowledgement on its website that there are opportunities to share trenches with other utilities when the trench is within the property boundaries:<sup>630</sup>

...the trench may be shared with other utility providers, such as electricity, gas and water, as well as the phone line...however, you'll need to comply with specifications.<sup>631</sup>

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<sup>627</sup> Telstra, Annexure J to Telstra's detailed submission in support of its undertakings dated 9 January 2003 – Trench Lengths (confidential version).

<sup>628</sup> Telstra, Response to Draft Decision, 23 December 2008, p. 80.

<sup>629</sup> *Telecommunications Act 1997, the Telecommunications Code of Practice 1997 and the Telecommunications (Low-impact Facilities) Determinations 1997.*

<sup>630</sup> Telstra, Response to Draft Decision, 23 December 2008, p. 81.

<sup>631</sup> [http://www.telstra.com.au/moving\\_home/newhome.cfm](http://www.telstra.com.au/moving_home/newhome.cfm), accessed 30 September 2008.

***Other trench sharing: IEN and CAN and between optical fibre main cable and main cable***

The ACCC notes that submissions in response to the Discussion Paper only raised concerns in relation to the cost allocation of ironwork for the mainframe distributions. This was acknowledged by Telstra and rectified in TEA model version 1.2, with the level of sharing between the IEN and the CAN.

The ACCC has received no further submissions on this issue in response to its Draft Decision and accordingly reiterates its position in the Draft Decision that it is satisfied that the degree of sharing between the CAN and the IEN at 5 per cent is reasonable.

## B.6 Operating and maintenance costs

Operating and maintenance (O&M) costs are the ongoing operational costs, including labour and materials that are causally linked to the provision of the ULLS. Cessation of the service would mean these costs are no longer incurred. Common costs are causally-linked costs incurred in providing a group of services that would not be avoided unless provision of all the services in the group ceased.<sup>632</sup> Indirect costs are those common costs otherwise known as overheads or unattributable costs that will still be incurred no matter whether or not the ULLS or the group of services ceases to be offered. Examples of such costs are head office and other costs that do not have a causal link to the service under consideration, and which can only be allocated on an arbitrary basis.

The TEA model relies on historical cost values taken from RAF account data that is aggregated across all services (including mobiles), including and without making distinctions between internal retail business services and its external wholesale business; all geographic areas for O&M; common and indirect cost inputs. The inputs are converted to factors in four categories:

- direct O&M expenses;
- indirect O&M expenses;
- indirect assets; and
- Network Support assets.

Telstra documents the approach used to calculate the O&M and indirect cost factors in its *Operations and Maintenance and Indirect Cost Factor Study*<sup>633</sup> ('Cost Factor Study') and in the excel worksheet, 'Factor Calculations'. A brief outline of Telstra's methodology used to calculate factor percentages is set out in the ACCC's Discussion Paper in respect to the 2008 Undertaking.<sup>634</sup>

In response to the Draft Decision, Telstra has made a number of changes to the TEA model where it believes the various concerns of interested parties are warranted. The total impact of all the O&M changes is to reduce the monthly price by \$2.51. The changes:

- update the forward-looking investment used as the denominator in the calculation of the factor for ducts and pipes to equal the ducts and pipes investment calculated by version 1.2 of the model;<sup>635</sup>

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<sup>632</sup> ACCC, *Access Pricing Principles: Telecommunications – a guide*, July 1997, Appendix 2, pp. 38-45.

<sup>633</sup> Telstra Corporation Limited, *Operations and Maintenance and Indirect Cost Factor Study*, Confidential, 7 April 2008.

<sup>634</sup> ACCC, *2008 ACCC Discussion Paper*, June 2008.

<sup>635</sup> Telstra, *Response to Draft Decision*, 23 December 2008, p. 82.

- fix an inadvertent error in the calculation of the O&M factors for direct expenses;<sup>636</sup>
- use book costs as the denominator in the factor calculation for copper cable O&M; and
- use Ovum's suggested line ratio to convert the Band 2 ducts and pipe investment to a total company investment for use as the denominator in the factor calculation of the ducts and pipes O&M.<sup>637</sup>

The rest of this section sets out the issues the ACCC has continued to identify in its review of Telstra's approach to calculating O&M cost factors. The following issues are discussed:

- comparison of RAF CCA with TEA model O&M costs;
- use of 2005-06 RAF data;
- Band 2-specific cost factors;
- size of Indirect Expenses;
- application of forward-looking and historic costs;
- use of Accounting Principles; and
- appropriate inclusion of cost categories.

## Issues

### *Comparison of RAF CCA and TEA Model operating costs*

## Submissions

### *Telstra*

Telstra submits that applying O&M factors, including to the fibre in the ULLS, is a practical and reasonable approach and is consistent with the O&M calculations which are based on all services and include economies of scale. Drs Harris and Fitzsimmons, who were retained by Telstra to provide an assessment of the TEA model, note that a number of models used by the FCC and others in the United States use a similar approach.<sup>638</sup> Harris and Fitzsimmons also claim the level of detail in the factors is appropriate.<sup>639</sup>

Harris and Fitzsimmons note that it is appropriate to assess the impact the level of investment has on the size of expenses incurred as a result. If there is no expectation

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<sup>636</sup> Telstra, *Response to Ovum*, 5 December 2008, p. 24.

<sup>637</sup> Telstra, *Response to Draft Decision*, 23 December 2008, p. 82.

<sup>638</sup> Dr Robert G Harris and Dr William Fitzsimmons. *Assessment of TEA Cost Model*, 4 November 2008, p. 31.

<sup>639</sup> Dr Robert G Harris and Dr William Fitzsimmons. *Assessment of TEA Cost Model*, 4 November 2008, p. 34.

that expenses would change as a result of changed investment inputs, then the factors should be adjusted to keep the relevant expenses unchanged.<sup>640</sup>

NERA in a report prepared for Telstra submits that Oftel favours the use of Equi-Proportionate Mark-up (EPMU) to allocate common costs between regulated access and conveyance respectively.<sup>641</sup> NERA submits that the FCC has ruled out the use of Ramsey pricing because it unreasonably raises the prices of the most critical bottleneck facilities, and that the Independent Regulator's Group (IRG) has noted that Ramsey pricing is difficult to implement. NERA conclude that TSLRIC+ models generally adopt an EPMU approach.<sup>642</sup>

NERA submits that attempts at bottom-up modelling of operating expenses have not been successful, and that the alternative is to use ratios of direct opex to investment cost, of indirect opex to direct opex, and of indirect assets to direct assets. Some models also attempt to identify best practice ratios of 'efficient' companies.<sup>643</sup>

NERA submits that the TEA model uses an EPMU approach for allocating general overheads but not for other common fixed costs.<sup>644</sup> NERA submits that the direct expense to investment cost ratios for duct and copper cable are derived using modelled investment costs as the denominator, while other direct costs are modelled using historic costs. NERA suggests that this is because of the gap between historic purchase price and replacement cost for duct and copper cable assets, which is likely to be more pronounced than the gap for other assets. NERA claims the gap is more significant for the Proposed Monthly Charge because the O&M costs for ducts and copper cable account for 96 per cent of all direct expenses associated with the CAN.<sup>645</sup>

NERA submits that the adjustments made to the indirect expenses, network support assets and indirect asset cost pools serve to realign the RAF data to match the asset classifications of the TEA model, and that the adjustments are reasonable in principle.<sup>646</sup> NERA makes no comment on the inputs to the model.

### *Other parties*

Network Strategies notes that the correct approach to deriving and applying the O&M factors is to only apply the mark-up to the capital cost of equipment that would need operations and maintenance, and not to the total capitalised investment costs as in the TEA model. Network Strategies argue that the TEA model approach seems to assume that the indirect overheads incur ongoing network O&M costs.<sup>647</sup>

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<sup>640</sup> Dr Robert G Harris and Dr William Fitzsimmons. *Assessment of TEA Cost Model*, 4 November 2008, p. 49.

<sup>641</sup> NERA, *TSLRIC+ Assessment*, 16 January 2009, p. 11.

<sup>642</sup> NERA, *TSLRIC+ Assessment*, 16 January 2009, p. 12.

<sup>643</sup> NERA, *TSLRIC+ Assessment*, 16 January 2009, p. 16.

<sup>644</sup> NERA, *TSLRIC+ Assessment*, 16 January 2009, p. 24.

<sup>645</sup> NERA, *TSLRIC+ Assessment*, 16 January 2009, p. 26.

<sup>646</sup> NERA, *TSLRIC+ Assessment*, 16 January 2009, p. 38.

<sup>647</sup> Network Strategies, *Additional comments on the TEA model*, 19 December 2008, p. 15.

## ACCC view

As a sanity check, the ACCC compared O&M costs per line per year (\$110.98) in the TEA model with O&M costs based on Telstra's 2006/07 RAF Current Cost Accounting (CCA) data reports. The operating costs less depreciation for the relevant RAF products are shown in Table B.6.1 below. The ACCC considers that while the RAF data relates to all band costs, as about 70 per cent of ULLS lines are in Band 2, the comparison between TEA Model which is Band 2 specific with RAF CCA data is possible.

Multiplying \$110.98 by the number of lines in Band 2 (7,532,793) gives an estimate of Band 2 O&M costs in 2006/07 of \$836.0 million.

The ACCC notes that when comparing the TEA model estimated Band 2 O&M costs in 2006/07 of \$836.0 million with O&M costs in Telstra's CCA report, it would appear that the TEA model estimate is overestimated by about [begin c-i-c] [redacted] [end c-i-c] or [begin c-i-c] [redacted] [end c-i-c] per cent.<sup>648</sup>

**Table B.6.1**

[begin c-i-c]

[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

[end c-i-c]

Source: ACCC and Telstra 2006-07 RAF CCA data

Notes: The External Wholesale product also includes LSS data.

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<sup>648</sup> Given that LSS costs are not separately identified in the RAF, the overstatement is likely to be larger than this.

Keeping in mind the limitations of this comparison, this comparative analysis suggests that the O&M costs in the TEA model are higher than audited RAF CCA data and therefore that the O&M costs in the TEA model should be examined carefully.

### ***Use of 2005-2006 RAF Data***

In its Draft Decision, the ACCC noted that Telstra has chosen to use its 2005-06 RAF data and not its 2006-07 RAF data, which was available at the time the TEA model was developed. The ACCC also noted that to reflect efficient, forward looking costs the TEA model should use the most recent RAF data available when calculating cost factors.<sup>649</sup>

Ovum's TEA model economic report notes that Telstra should have used its 2006-07 RAF data in developing the TEA model. While Ovum acknowledges that its analysis is limited by the lack of available inputs, it still indicates that direct O&M costs would be approximately 22 per cent lower in 2006-07 than in 2005-06 and the monthly charge would be 4.2 per cent lower if the lower O&M cost data was used.<sup>650</sup>

### **ACCC view**

The ACCC notes that Telstra has revised the model to use data from the 2006-2007 financial year, but also notes that data from the 2007-2008 financial year has been available since before the ACCC's Draft Decision was published in November 2008, and in the ACCC's opinion this is the data that should have been used initially.

The ACCC confirms its view that in order to reflect efficient, forward looking costs the TEA model should use the most recent RAF data available when calculating cost factors.

### ***Band 2-specific Cost Factors***

#### **Submissions**

##### *Telstra*

In response to the economic report prepared by Ovum, Telstra disagrees that, in the derivation of the direct O&M factors, it assumed the investment per line was the same across all bands, and claims that the direct investment Band 2 costs from the TEA model are multiplied by the ratio of Band 2 to total investment costs returned by the PIE II cost model to calculate total investment costs for the TEA model.<sup>651</sup>

Telstra argues that the calculation of band-specific costs is not consistent with other TSLRIC+ models because:

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<sup>649</sup> ACCC, *2008 ACCC Draft Decision*, November 2008, p. 92.

<sup>650</sup> Ovum, *TEA model (v1.0) economic review*, 6 August 2008, p. 52.

<sup>651</sup> Telstra, *Response to Ovum*, 5 December 2008, pp. 23-24.

- a standard factor assigns more costs to those bands with more investment;
- the additional modelling costs far outweigh the potential benefits from increases in precision;
- O&M costs comprise [begin c-i-c] [end c-i-c] per cent of ULLS costs, so even significant shifts in the assignment of costs will have minimal impact on the price in any band;
- gains from increased allocations in one band will presumably result in increased costs imposed on other bands; and
- developing costs on an exchange by exchange basis requires allocations predicated largely on subjective judgements that are unlikely to lead to greater precision.<sup>652</sup>

Telstra also notes that not one US regulatory agency (state or federal) requires the calculation of separate factors for each density grouping, and claim that none of the American models use de-averaged factors. Telstra also notes that the costs associated with developing and maintaining an exchange-based historic cost system would be a ULLS-specific cost, thereby increasing the price charged to access seekers by a significant amount.<sup>653</sup>

#### *Other parties*

In its TEA model economic review, Ovum notes that the assumptions in the TEA model that the unit investment cost per line of ULLS Bands 1, 3 and 4 are the same as Band 2.<sup>654</sup>

Optus submits that in its experience rural O&M costs are higher (around 41 per cent) than urban areas O&M costs and Telstra's reliance on RAF data across all services will lead to an over-estimation of costs.<sup>655</sup>

#### **ACCC View**

The ACCC notes that Telstra has not made any adjustments to the RAF data to take account of Band 2 specific service operating costs. The ACCC considers that the application of RAF values for the entire network implies that O&M costs in Band 2 are equivalent to those in Bands 1, 3 & 4. The ACCC notes Telstra's claims about the relative costs and benefits of band-specific modelling but considers that the evidence Telstra relies on from the United States that no-one has developed a de-averaged cost model provides no basis to claim that the costs of band-specific modelling outweigh the benefits.

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<sup>652</sup> Telstra, *Response to Draft Decision*, 23 December 2008, p. 86.

<sup>653</sup> Telstra, *Response to Draft Decision*, 23 December 2008, pp. 86-87.

<sup>654</sup> Ovum, *TEA model (v1.0) economic review*, 6 August 2008, p. 44.

<sup>655</sup> Optus, *Response to the ACCC's Discussion Paper*, August 2008, pp. 49-50.

The ACCC notes that the O&M costs associated with Band 2 assets are unlikely to be the same as those associated with assets in other bands, since loop lengths and costs such as those associated with call outs are different. The ACCC notes that as a consequence of applying RAF data across all bands means that the O&M costs for Band 2 derived from the TEA model may be overestimated.

### *Size of Indirect Expenses*

In its Draft Decision, the ACCC notes that it agreed with Ovum's conclusions that the indirect expenses used as inputs in the TEA model are extremely high relative to other comparable indirect expenses in publicly available costs models used in telecommunications. The ACCC also agreed with Ovum's assessment that efficient forward-looking O&M costs should fall, compared to historic costs, when new and modern plant and equipment is installed and that this trend is not reflected in the TEA model O&M costs.<sup>656</sup>

### **Submissions**

#### *Other parties*

In response to the Draft Decision, Optus claims the O&M mark-up is applied to the total investment costs which have already been marked-up by the indirect loading factor.<sup>657</sup>

Network Strategies in its report contends that the "Loading Factor for Indirect Overheads" is already covered in the cable capital cost and may also be counted again when separate O&M mark-ups are applied. Network Strategies concludes that it cannot confirm that the mark-up is appropriate or necessary to cover capitalised overhead costs.<sup>658</sup>

Ovum in its report comments that a lack of consistency between the method used to calculate the direct O&M cost factors and the method used to calculate indirect and support overhead factors raises concerns that the direct investment costs calculations include an amount of support asset investment costs. If this is the case, Ovum contends the model is double counting the network support asset investment costs for ducts and pipe and copper cables.<sup>659</sup>

Ovum notes that indirect expenses as a fraction of direct O&M expenses calculated in the TEA model are very high compared to (three) other publicly available comparable cost models. Ovum contends that if the input factor is reduced to the average of these publicly available cost models then a reduction of 8 per cent in the monthly cost will result.<sup>660</sup>

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<sup>656</sup> ACCC, *2008 ACCC Draft Decision*, November 2008, p. 92.

<sup>657</sup> Optus, *Response to Draft Decision*, December 2008, p. 26.

<sup>658</sup> Network Strategies, *Report for Optus*, 19 December 2008, p. 4.

<sup>659</sup> Ovum, *TEA model (v1.0) economic review*, 6 August 2008, p. 44.

<sup>660</sup> Ovum, *TEA model (v1.0) economic review*, 6 August 2008, p. 50.

Ovum comments that the source and calculation of the adjustments made to the indirect costs in the Cost Factor Study is not clear, nor are the reasons for the mapping of RAF costs to the Cost Factor Study cost groupings.<sup>661</sup>

Ovum states that investment per line figures from the model are used to calculate some O&M factors, creating circular references which are potential sources of error and which decrease the accuracy and flexibility of the model.<sup>662</sup>

Ovum queries the use of total unadjusted direct expenses as the denominator in the calculation of the indirect O&M factors, noting that adjusted operating expenses were used for other factors.<sup>663</sup>

### *Telstra*

Telstra contends that with respect to O&M figures the TEA model uses the total undepreciated historic and current cost of the assets, and that these amounts were taken from the Fixed Assets statements in the RAF reports for the internal and external wholesale businesses.<sup>664</sup>

With respect to the size of the O&M factors applied to plant and equipment, Telstra argues that they compare favourably to factors previously accepted by the ACCC in previous decisions, and that the maintenance costs generated by the model are based on actual costs that broadly reflect the midpoint in the asset lives.<sup>665</sup>

In response to Ovum's comments on the source, calculation and mapping of adjustments in the Cost Factor Study, Telstra claims the documentation accompanying the Study explains why the adjustment is necessary and that the source of the adjustment is the RAF. Telstra contends that the mapping is a result of accounting practices used in the RAF, or otherwise of no impact on the undertaking price.<sup>666</sup> Telstra rejects Ovum's comments about the model containing circular references since the calculation of investment per line is not dependent on the calculation of the relevant O&M factors.<sup>667</sup>

In response to Ovum's expectation in regard to identification of accumulated depreciation of indirect retail assets, Telstra argues that the adjustments are based on the assets identified by the ACCC for cost recovery, and so the eliminated ULLS and LSS specific costs match the adjustment to Telstra's actual recovery.<sup>668</sup>

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<sup>661</sup> Ovum, *TEA model (v1.0) economic review*, 6 August 2008, p. 45.

<sup>662</sup> Ovum, *TEA model (v1.0) economic review*, 6 August 2008, p. 44.

<sup>663</sup> Ovum, *TEA model (v1.0) economic review*, 6 August 2008., p. 46.

<sup>664</sup> Telstra, *Modifications to the TEA model (v1.2)*, 10 September 2008, p. 4.

<sup>665</sup> Telstra, *Response to Ovum*, 5 December 2008, p. 20.

<sup>666</sup> Telstra, *Response to Ovum*, 5 December 2008, p. 25.

<sup>667</sup> Telstra, *Response to Ovum*, 5 December 2008, p. 23.

<sup>668</sup> Telstra, *Response to Ovum*, 5 December 2008, p. 27.

Telstra argues that the indirect expenses are high by comparison with the publicly available cost models because those models multiply the indirect expense factor by total costs including capital costs. If the capital costs are removed, then the ratio returned by the TEA model is lower than that returned by the other models.<sup>669</sup>

In its response to access seeker submissions on the Draft Decision, Telstra reiterates its views that the approach it has adopted to calculate the cost factors is consistent with international practice.<sup>670</sup>

### **ACCC view**

The ACCC notes that the factors relating to the CAN are based on data dating from 1998 and used to support Telstra's 1999 PSTN-OTA undertaking. As such the ACCC considers that any comparison of the factors from the two undertakings is tenuous at best because of the length of the intervening period.

The ACCC's own analysis of the derivation of the cost factors has been hampered by the same point noted by Ovum – namely, that the Cost Factor Study lacks visibility of the source of the adjustments made to a number of inputs, including those made for depreciation and LSS-specific costs. The ACCC considers that this does not engender confidence in the TEA model.

The ACCC agrees with Ovum's concern that using an output from the model to derive an input lessens the model's accuracy – an error in the derivation of the output will result in compounded errors through the calculation and application of an incorrect input. Specifically, the Blackburn ESA investment per line for ducts and pipes from the TEA model is used as the source of the investment per line in the cost factor study. The figure is then used to calculate the total investment figure and is used as the denominator in the calculation of the O&M and indirect asset cost factors in the Cost Factor Study, which is then used as an input to the TEA model. Changing the Blackburn ESA duct and conduit investment per line in the Cost Factor Study changes all the O&M factors for indirect assets and copper cable assets in the Cost Factor Study and not just the factor for direct duct and conduit assets. The ACCC notes that in version 1.3 of the TEA model Telstra has changed the source of the investment per line from the Blackburn ESA to that calculated by the model in the 'Investment Summary' worksheet, but considers that this makes no difference to concerns about promulgating errors through the model.

In its Draft Decision, the ACCC agreed with Ovum's conclusions that the indirect expenses used as inputs in the TEA model are extremely high relative to other comparable indirect expenses in publicly available cost models used in telecommunications. In response, Telstra's claims that indirect expenses returned by the TEA model are only high in comparison with other publicly available models because capital costs have not been removed from the factor calculation in those models. In the absence of a detailed analysis of these models, the ACCC accepts that

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<sup>669</sup> Telstra, *Response to Ovum*, 5 December 2008, pp. 27-28.

<sup>670</sup> Telstra, *Response to Access Seeker Submissions on the ACCC's Draft Decision*, 1 April 2009, p. 43.

the comparison of cost factors with other publicly available cost models is not a definitive basis for assessing the size of Telstra's indirect expenses.

However, the ACCC also agrees with Ovum's assessment that efficient forward-looking O&M costs should fall, compared to historic costs, when new and modern plant and equipment is installed and that this trend is not reflected in the TEA model O&M costs. The ACCC considers that a pragmatic implementation of TSLRIC+ requires the identification of efficiency savings in operating expenses from an optimised network. Moreover, Telstra has not submitted evidence to support its claim that O&M costs are representative of those incurred at the mid-point of assets' lives. Accordingly, the ACCC rejects the notion that unadjusted historic costs are a reasonable proxy for efficient O&M costs.

### *Comparison of Forward-looking and Historic Costs*

#### **Submissions**

##### *Telstra*

Telstra submits that the adjustments made to investment costs for ducts and pipes and copper cables are appropriate as the historic costs of these assets are less than the TSLRIC+ costs and if the adjustments were not made then O&M costs would be overstated in the TEA model.<sup>671</sup>

Telstra submits that it is appropriate to use historic costs to calculate cost factors. Telstra contends that costs would be understated if assets were modelled to be brand new, valued at current cost, in every year of an asset's life as this would fail to take into account the increase in O&M and indirect costs as assets depreciate and deteriorate. Hence, the appropriate O&M and indirect factors are those which reflect the costs over the assets lives. Therefore as the asset deteriorates the O&M costs would be expected to increase.<sup>672</sup>

In response to interested parties concerns over the model, Telstra has advised it has updated the forward-looking investment used as the denominator in the calculation of the factor for ducts and pipes to equal the ducts and pipes investment calculated by version 1.2 of the TEA model.<sup>673</sup> The ACCC has confirmed this is also the case for version 1.3 of the TEA model using RAF data from the 2006-07 financial year.

Telstra also concedes that it has inadvertently made an error in the calculation of the O&M factors for direct expenses, but the impact of the error is insignificant (0.3 per cent)<sup>674</sup>.

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<sup>671</sup> Telstra, *Response to Discussion Paper*, 12 August 2008, p. 34.

<sup>672</sup> Telstra, *Response to Discussion Paper*, 12 August 2008, p. 34.

<sup>673</sup> Telstra, *Response to Draft Decision*, 23 December 2008, p. 82.

<sup>674</sup> Telstra, *Response to Ovum*, 5 December 2008, p. 24.

On the question of what costs are included in the denominator used in the calculation of the factors, Telstra contends that unadjusted figures should be used to ensure that only a pro-rated share of indirect expenses are assigned to the ULLS.<sup>675</sup>

Other changes Telstra says it has made to the model are to:

- use book costs as the denominator in the factor calculation for copper cable O&M; and
- use Ovum's suggested line ratio to convert the Band 2 ducts and pipe investment to a total company investment for use as the denominator in the factor calculation of the ducts and pipes O&M.<sup>676</sup>

#### *Other parties*

Network Strategies notes that Telstra has adopted the full investment costs from the TEA model for duct and pipes and copper cables. Network Strategies contend that it is not correct to use the original O&M expenses in the TEA model because it applies expenses from a historical network that includes legacy technology to a forward looking network and makes no adjustment for an efficient operator.<sup>677</sup>

Ovum contends that O&M costs do not reflect those of an efficient operator as the cost factors used in the TEA model are generally higher than Telstra's historic costs. Ovum notes that, in the TEA model, the O&M cost factors are higher than historic cost factors for all plant and equipment types except for ducts and pipes. In Ovum's view, efficient forward looking O&M costs should fall as modern plant and equipment would imply lower O&M costs than those based on the use of historic plant and equipment as modern plant and equipment is more reliable. Ovum has recalculated O&M costs by using the lowest cost factor for each category of plant and equipment and estimate that introducing these efficiencies would reduce the monthly cost from version 1.2 of the TEA model by 1.4 per cent.<sup>678</sup>

#### **ACCC view**

The ACCC notes that the direct O&M cost factors are calculated in version 1.3 of the TEA model in one of two ways: either from bottom-up costs or from RAF CCA values. In particular, the ACCC notes that there is no consistency in the cost base applied to calculate O&M cost factors. The factors for the largest cost item (ducts and pipes) are derived from the forward-looking investment costs calculated by the TEA model. The ACCC notes that the model also develops bottom-up costs for copper cable, multiplexing equipment (presumably on the customer side of the MDF) and for lead-in costs. However, these investment costs are ignored in favour of investment totals reported in the RAF.

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<sup>675</sup> Telstra, *Response to Ovum*, 5 December 2008, p. 26.

<sup>676</sup> Telstra, *Response to Draft Decision*, 23 December 2008, p. 82.

<sup>677</sup> Network Strategies, *Report for Optus*, 5 September 2008, p. 54.

<sup>678</sup> Ovum, *TEA model (v1.0) economic review*, 6 August 2008, p. 15-16.

The ACCC considers that there is no apparent reason for the inconsistent approach to the treatment of these four asset types—applying either a bottom-up approach from the TEA model or the RAF—and that the reliability of the model suffers as a result.

The ACCC notes Telstra’s argument that historic O&M costs reflect a mid-point in the maintenance and indirect cost profile of the CAN. However, Telstra has not presented any evidence that the average age of the network assets is at the mid-point of its economic life, nor that maintenance and indirect costs increase in line with the age of the assets. Indeed, contrary to the argument that indirect costs increase with the age of assets, the ACCC notes public statements by Telstra that indicate the recent upgrades and re-negotiation of external contractor rates will reduce operating expenses by \$140 million over two years.<sup>679</sup> The ACCC considers that adjustments to the historic O&M costs should reflect these and other anticipated cost savings. The ACCC therefore is not satisfied that a ‘levelised’ approach to the recovery of O&M costs is reasonable.

The ACCC also notes Telstra’s submissions on the need for making adjustments to the investment costs to ensure the related direct O&M costs are not overstated in the TEA model. These adjustments have the effect of increasing the size of the denominator and so reducing the cost factor. The ACCC does not agree that the historic costs of operating these assets are less than the TSLRIC costs because it expects that the maintenance costs associated with the forward-looking costing approach would be lower than those of existing assets. The ACCC therefore considers that any adjustments that need to be made to the factor calculation should reflect the O&M costs of a forward-looking costing approach.

### *Use of Accounting Principles*

#### **Submissions**

##### *Telstra*

Telstra contends that the total sum of all directly attributable, attributable and non-attributable costs should be included in the factor calculation on the basis that the distinction is accounting based and not based on whether the costs are related or incurred as a result of supplying a service.<sup>680</sup>

In response to the Draft Decision, Telstra notes that virtually all its costs are classified using the Australian Accounting Standards Board (AASB) Presentation of Financial Statement 101. Telstra notes the same is required of any new entrant or existing competitor. Telstra also states the classification extends to the reporting of data in the RAF. Telstra further notes that the only RAF allocations that impacted the factor calculation are those assigning costs to the retail arm of its business, and that if the ACCC is dissatisfied with methods used in assigning costs in the RAF, it has the authority to alter the reporting requirements.<sup>681</sup>

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<sup>679</sup> Telstra, *Media Release: Telstra selects three service industry leaders*, 3 September 2007.

<sup>680</sup> Telstra, *Response to Discussion Paper*, 12 August 2008, p. 32.

<sup>681</sup> Telstra, *Response to Draft Decision*, 23 December 2008, pp. 92-93.

### *Other parties*

MJA notes that an alternative mechanism of calculating operating costs on the basis of a 'pure' bottom-up cost model would be difficult and time consuming, but contends that Telstra's detailed understanding of the network would greatly assist in such analysis.<sup>682</sup>

### **ACCC view**

The ACCC notes that the TEA model uses as the basis for calculating O&M costs, the total sum of all directly attributable, attributable and non-attributable costs, based on an accounting classification of those costs. The ACCC notes Telstra's statement that it has allocated its costs to the RAF in accordance with the AASB.

The ACCC considers that a TSLRIC+ framework identifies those costs that would be avoided if the provider ceased offering the relevant service. These costs will not necessarily be the same as those allocated to the service under an accounting standards framework.

In this regard, allocating costs based on accounting principles will always provide a second-best outcome in the derivation of O&M cost factors. In particular, the ACCC considers the costs incurred by an efficient forward looking operator in supplying the ULLS may differ from allocations based on an accounting framework, even where that accounting framework conforms with accounting standards. However, the ACCC notes that there are difficulties associated with specifically identifying the O&M cost elements used to provide the ULLS, and that a methodology that proxies appropriate allocation is often used.

### ***Overhead Loading***

#### **Submissions**

##### *Telstra*

Telstra submits that overhead loading costs are efficient and forward-looking as they are based on Telstra's recent experience.<sup>683</sup> Telstra argues that as the overhead loading is applied as a factor in the TEA model rather than an absolute amount only an efficient amount of overhead is included in the cost. This is on the basis that the TEA model represents an efficient optimised network.<sup>684</sup> Telstra also submits confidential witness statements in support of its calculation for indirect overheads.<sup>685</sup>

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<sup>682</sup> Marsden Jacob Associates, *Review of the TEA model*, 12 August 2008, p. 13.

<sup>683</sup> Telstra, *Response to Discussion Paper*, 12 August 2008, p. 33.

<sup>684</sup> Telstra, *Response to Discussion Paper*, 12 August 2008, p. 17.

<sup>685</sup> Telstra, *Response to Discussion Paper*, 12 August 2008, p. 17.

The Witness Statement of [begin c-i-c] [redacted] [end c-i-c] describes the derivation of the loading factor and suggests that the internal overhead is already included in the direct capital expenditure reported in Telstra's financial accounts.<sup>686</sup>

However, [begin c-i-c] [redacted] [end c-i-c], in his witness statement, submits the costs comprising the internal overhead are recorded in Telstra's accounts as expense items.<sup>687</sup>

A subsequent witness statement from [begin c-i-c] [redacted] [end c-i-c] states that distribution, freight and warehousing costs are expensed unless they are related to a capital build project, in which case they are capitalised.<sup>688</sup>

### *Other parties*

Network Strategies contends that it believes that the "Loading Factor for Indirect Overheads" is already covered in the cable capital cost and may also be counted again when separate operations and maintenance mark-ups are applied. Network Strategies concludes that it cannot confirm that the mark-up is appropriate or necessary to cover capitalised overhead costs.<sup>689</sup>

Ovum comments that although the mark-up for indirect overheads is high compared to other models, it can be considered as acceptable.<sup>690</sup> Network Strategies also submits that the mark-up is high but is not able to comment further without additional information.<sup>691</sup>

In its response to access seeker submissions on the Draft Decision, Telstra reiterates its views that the [begin c-i-c] [redacted] [end c-i-c] statements explain how the indirect capital ratio was derived and that they are not accounted for in O&M or otherwise accounted for as indirect capital.<sup>692</sup>

### **ACCC View**

The ACCC is concerned that the costs comprising the overhead loading factor may also be counted in the calculation of the O&M and indirect cost factors. These concerns are reinforced by the apparent discrepancy between the Telstra witness statements concerning whether the costs are expensed or capitalised in the Telstra General Ledger. Further, Telstra has not addressed how the costs are brought to account in the RAF. The ACCC also notes that there is no specific adjustment for these costs included in the Cost Factor Study.

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<sup>686</sup> Telstra, *Statement of* [begin c-i-c] [redacted] [end c-i-c], 12 August 2008, p. 6.

<sup>687</sup> Telstra, *Statement of* [begin c-i-c] [redacted] [end c-i-c], 12 August 2008, p. 2.

<sup>688</sup> Telstra, *Statement of* [begin c-i-c] [redacted] [end c-i-c], 17 December 2008, pp. 3-4.

<sup>689</sup> Network Strategies, *Report for Optus*, 19 December 2008, p. 4.

<sup>690</sup> Ovum, *TEA model (v1.0) economic review*, 6 August 2008, p. 51.

<sup>691</sup> Network Strategies, *Report for Optus*, p. 69.

<sup>692</sup> Telstra, *Response to Access Seeker Submissions on the ACCC's Draft Decision*, 1 April 2009, p. 37.

The ACCC notes that the overhead loading has been calculated using different financial years to those used for all other inputs.

Moreover, the derivation of the capital cost inputs has been queried by a number of submitters, with Optus suggesting that vendor prices may have been overstated by at least [begin c-i-c] [end c-i-c] per cent.<sup>693</sup> If this is the case, the overhead loading factor applied to capital costs has a telescopic effect on the end price produced by the model since the effect of any overstatement is amplified through the model by the way the other O&M and indirect cost factors have been applied to these costs. The ACCC therefore considers that the TEA model is particularly sensitive to small errors in input prices. When taken together with the effect of the factors on what would otherwise be fixed costs, the ACCC considers that the O&M costs reported by the model are unreasonable and when used in the TEA model do not reflect the efficient costs of supplying the ULLS.

### *Included Cost Categories*

#### **Submissions**

##### *Telstra*

Telstra contends that the categories used in the O&M calculations are appropriate on the basis that they reflect asset groups which are used in the RAF. Telstra notes that the RAF does not include a separate asset category for fibre optic cable in the CAN, and so some fibre costs are included in the calculation of the cost factors.<sup>694</sup>

In response to access seekers and other parties, Telstra contends that there has been a misinterpretation of how the factor model has been compiled, and that Telstra has ensured that retail related costs are excluded from the costs associated with ULLS.<sup>695</sup> Telstra also submits that it is appropriate to include amounts for marketing, sales and other items (identified by Ovum as inappropriately included in the TEA model) because they are common costs incurred in the supply of wholesale services, including the ULLS.<sup>696</sup> Telstra advises that it has removed intangibles from an upgraded version of the model because time constraints have prevented it from validating the figures to its satisfaction, but still considers that intangibles should be included in the calculations.<sup>697</sup>

##### *Other parties*

Network Strategies notes that Telstra states O&M costs are 10 per cent below actual O&M costs allocated to the ULLS in the RAF. However, Network Strategies contends that after removing costs that should not be allocated to the ULLS such as

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<sup>693</sup> Optus, *Response to Draft Decision*, December 2008, p. 19.

<sup>694</sup> Telstra, *Response to Discussion Paper*, 12 August 2008, p. 33.

<sup>695</sup> Telstra, *Modifications to the TEA model (v1.2)*, 10 September 2008, p. 4.

<sup>696</sup> Telstra, *Response to Ovum*, 5 December 2008, pp. 18 & 25.

<sup>697</sup> Telstra, *Telstra's Response to Draft Decision*, 23 December 2008, p. 85.

multiplexing equipment, the TEA model actually produces O&M costs which are 6.5 per cent higher than those in Telstra's RAF O&M costs.<sup>698</sup>

Ovum also submits that Telstra's indirect O&M costs include costs which should not be included in the TEA model or attributed to the ULLS, such as sales and marketing, which are retail costs which would be avoided for ULLS sales.<sup>699</sup> Ovum submits that, as a matter of principle, intangibles should not be attributed to the cost of supplying the ULLS because intangibles are non-monetary and are difficult to measure.<sup>700</sup> No estimate was made of the effect on costs of these inclusions.

Ovum notes that depreciation has been eliminated for some of the indirect retail expenses, but queries why, since depreciation should not be included in the initial cost calculations.<sup>701</sup>

Ovum states that only costs that are attributable to the ULLS should be included, and submits that an efficient and forward-looking operator should not have to incur the retail costs of the incumbent. Ovum also submits that fibre costs and other costs not associated with the ULLS should be removed.<sup>702</sup>

The ACCC agrees with the Draft Decision that equity-raising costs should be recovered as a cash flow operating cost allowance and not through the WACC.<sup>703</sup>

Adam Internet et al submission in response to the Draft Decision agreed that lead-in costs and entrance facility costs are not legitimate costs of providing the ULLS.<sup>704</sup> In a subsequent submission, Adam Internet et al conceded that some entrance facility costs are attributable to the ULLS, provided they are not recovered elsewhere.<sup>705</sup>

### **ACCC View**

The ACCC notes that the direct O&M factors for ducts and pipes, copper cable, multiplexing equipment and lead-ins are calculated from bottom-up costs. All other factors are calculated from RAF values allocated via a top-down approach. The ACCC understands that if the operating costs of other assets are to be built into the model, their capital value must be taken from the RAF. However, the ACCC is concerned that these assets are not used in the provision of the ULLS, and that their inclusion inflates the undertaking price by allocating O&M costs to assets that have no part in the provision of the ULLS.

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<sup>698</sup> Network Strategies, *Report for Optus*, 5 September 2008, p. 35.

<sup>699</sup> Ovum, *TEA model (v1.0) economic review*, 6 August 2008, p. 46.

<sup>700</sup> Ovum, *TEA model (v1.0) engineering review*, 6 August 2008, p. 12.

<sup>701</sup> Ovum, *TEA model (v1.0) economic Review*, 6 August 2008, p. 46.

<sup>702</sup> Ovum, *Economic Advisory Note*, 5 February 2009, pp. 10-12.

<sup>703</sup> Competitive Carriers Coalition, *CCC Submission on Draft Decision*, 15 December 2008, p. 9.

<sup>704</sup> Adam Internet et al, *Response to ACCC's Draft Decision*, 23 December 2008, p. 1.

<sup>705</sup> Adam Internet et al, *Re: Telstra's ULLS Undertaking: Request for Further Information*, 19 January 2009.

While other assets may have been included in the cost pool used by the TEA model because they form part of the CAN, or otherwise share CAN facilities, the ACCC continues to rely on the 'broad recovery base approach' endorsed by the Australian Competition Tribunal that the cost pool should consist of only those costs associated with the provision of the ULLS, LSS and ADSL service.<sup>706</sup> Under this approach, operating costs included in the model for Pair Gain Systems, Switching Equipment, Inter-Exchange Investment and Other Systems and Equipment categories would be excluded.

Moreover, to the extent that these other assets share the CAN, the ACCC considers it may be appropriate to discount their contribution to total ULLS costs in the same way that trench sharing reduces the cost contribution of ducts and pipes.

The ACCC notes that Telstra states it has included the cost of fibre in the cost pool because there is no separate category for fibre under the RAF. The ACCC considers that this is insufficient justification for including such costs. The ACCC also notes the inclusion of retail costs in the cost pool used in the calculation of the indirect asset factors, only some of which are removed as adjustments. The ACCC considers that it is reasonable to include marketing, sales and other product level items only to the extent that these costs are incurred in the provision of the ULLS, LSS or wholesale ADSL service.

### **Conclusion**

The ACCC considers that there are significant concerns with Telstra's derivation of O&M costs. The ACCC does not believe the O&M and indirect costs included in the TEA model result in an implementation of TSLRIC+ that reflects efficient and forward-looking costs. The ACCC is therefore not satisfied that the O&M costs set out in the TEA model are appropriate.

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<sup>706</sup> *Telstra Corporation Ltd (No 3)* [2007] ACompT 3 (17 May 2007).

## B.7 Cost of capital

A firm's weighted average cost of capital (WACC) is the value-weighted expected return on capital required by debt and equity capital providers to the firm. It reflects the return the firm's investors could expect to earn by investing in the next best investment of equivalent risk; that is, it represents the firm's opportunity costs of capital.

The vanilla and pre tax WACCs are calculated as follows:

$$WACC_{Vanilla} = \frac{D}{V} \times E[K_d] + \frac{E}{V} \times E[Ke] \quad (1)$$

$$WACC_{Pretax} = \frac{D}{V} \times E[Kd] + \frac{E}{V} \times \frac{E[Ke]}{(1 - Te(1 - \gamma))} \quad (2)$$

Where:

$D$  = The market value of debt

$E$  = The market value of equity

$V$  = The market value of debt plus the market value of equity

$E[Kd]$  = The expected return on debt

$E[Ke]$  = The expected return on equity

$Te$  = The effective tax rate of the firm

$\gamma$  = The market value of imputation credits

In the above formula, the expected return on equity and the expected return on debt are often calculated as follows:

$$E[Ke] = rf + B_e \times [E(Rm) - rf] \quad (3)$$

This is also the equation for the security market line from the capital asset pricing model (CAPM).

$$E[Kd] = rf + \text{debt premium} + \text{debt issuance costs} \quad (4)$$

Where:

$E[Kd]$  = The expected return on debt

$E[Ke]$  = The expected return on equity

$rf$  = The risk free rate

$B_e$  = The firm's equity beta

$E(Rm)$  = The expected return on the market portfolio

Debt premium = The yield to maturity on benchmark bonds –  $rf$

In its 2008 Undertaking, Telstra have sought to add equity issuance costs to equation (3).

Telstra has proposed a vanilla WACC point estimate of 12.28 per cent using estimates of the risk-free rate and debt risk premium at the close of trading on 31 December 2007. Telstra states that its estimates of the WACC used in the 2008 Undertaking are based on a CAPM framework.

The vanilla and pre-tax WACC are directly related as shown above by formula (1) and (2), the only difference being the pre-tax WACC is grossed up if imputation credits are less than fully valued (i.e. if gamma is less than one). In calculating Telstra's pre-tax WACC, the ACCC has used Telstra's estimate of its vanilla WACC.

In support of its point estimate of the WACC, Telstra has submitted high and low estimates for the WACC. These parameters are set out in Table B.7.1.<sup>707</sup>

**Table B.7.1**

Parameter	Low estimate	Telstra's point estimate	High estimate
Risk free rate	6.33%	6.33%	6.33%
Debt ratio	30%	30%	30%
Debt risk premium	1.80%	1.95%	2.10%
Debt issuance cost	0.07%	0.15%	0.22%
Cost of debt	8.20%	8.43%	8.65%
Debt beta	0	0	0
Tax rate	30%	30%	30%
Asset beta <sup>708</sup>	0.625	0.725	0.825
Equity beta	0.887	1.028	1.170
Equity issuance cost	0.27%	0.40%	0.47%
Market risk premium	5.5%	7.0%	8.0%
Cost of equity capital	11.48%	13.93%	16.16%
<b>Vanilla WACC</b>	<b>10.49%</b>	<b>12.28%</b>	<b>13.91%</b>

The ACCC notes that Telstra also submitted a gamma of zero, with no high or low estimates.

### **ACCC's overall conclusion on Telstra's WACC**

The ACCC reaffirms its view from its Draft Decision that it is not satisfied that Telstra's proposed vanilla WACC, the implied pre-tax WACC<sup>709</sup> based on Telstra's vanilla WACC parameters and proposed tax rate and imputation credit factor are reasonable.<sup>710</sup> In particular, the ACCC is of the view that Telstra's vanilla WACC and the pre-tax WACC are significantly above what it considers to be a fair estimate based on the CAPM.

<sup>707</sup> Telstra, *WACC Submission*, 4 April 2008, p. 45.

<sup>708</sup> The asset beta is the firm's equity beta if the firm had no debt (i.e. the beta of the overall assets of the firm, without leverage).

<sup>709</sup> Note: The implied pre-tax WACC is henceforth referred to as the pre-tax WACC.

<sup>710</sup> ACCC, 2008 *ACCC Draft Decision*, November 2008, p. 94.

Further, the ACCC considers that Telstra has used a range of alternate arguments resulting in its default WACC input values being unreasonable at an individual and in aggregate level.

The rest of this section sets out Telstra's arguments in support of each of its default WACC input values, submissions received about these parameters and the ACCC's assessment of these parameter values.

The ACCC notes that there has been a significant change in the economic conditions since Telstra lodged this Undertaking in March 2008. Accordingly, where there is robust evidence to support a departure from previously supported parameters, the ACCC will consider this evidence. This evidence will be considered along with other forms of evidence including the Australian Energy Regulator's (AER's) review of the WACC,<sup>711</sup> where relevant to the 2008 Undertaking, submissions from interested parties and other relevant literature.

Finally, it should be noted that the ACCC considers that theoretically the WACC should be assessed at the start of an Undertaking period as this is consistent with the use of a forward looking TSLRIC+ pricing model. On this basis, the ACCC has updated its estimate of Telstra's vanilla and pre-tax WACC values (for the purposes of assessing the 2008 Undertaking) to 8 April 2009.

### **B.7.1 Telstra's default WACC input values**

#### **Risk-free rate**

The risk-free rate refers to the return an investor gets from holding an asset with a promised repayment amount and no risk of default. As no risk-free assets are directly observable, an appropriate proxy, and the sampling period over which the proxy is measured, must be determined. Typically, Australian Commonwealth Government bonds are used as a proxy for the risk-free asset.

#### ***Submissions***

##### *Telstra*

Telstra has used a 10-year Australian Commonwealth Government bond as a proxy for the risk-free asset when estimating the cost of equity and the cost of debt. Telstra has submitted a point estimate of 6.33 per cent for the yield to maturity (YTM) on the 10-year Australian Commonwealth Government bond. This YTM was estimated at market close on 31 December 2007. Telstra recognises that a possible error may occur in relation to how well this translates into an opening yield on 1 January 2008.<sup>712</sup>

Telstra submits that the determinant of the bond maturity should be the life of the relevant asset – and as the CAN is a long-lived asset, the maturity of the debt and equity should be set to match this long life. Telstra also contends that setting the maturity of the risk-free proxy to the regulatory cycle is an inferior approach because of the problems such as the CAPM being a single period approach but applied to

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<sup>711</sup> AER, *December 2008 WACC Review Explanatory Statement*, 2008.

<sup>712</sup> Telstra, *WACC submission*, 4 April 2008, p. 18.

multi-year analysis. However, convention around CAPM provides that the appropriate horizon for equity is linked to the useful life of the relevant asset.<sup>713</sup>

Telstra submits the use of an ex post risk-free rate from 1 January 2008 allows for consistent valuation of the assets across the asset base.<sup>714</sup> Further, in response to Ovum's report, Telstra submits that the date chosen for the calculation of the risk-free rate was not chosen ex-post, as the date selected was maintained from when the original Undertaking application was made in December 2007.<sup>715</sup>

In response to the ACCC's Draft Decision, Telstra submits that the ACCC has accepted Telstra's best estimates in relation to the risk-free rate as it is consistent with the ACCC's input in its pricing principles determination.<sup>716</sup>

### *Other parties*

Ovum in its report, asserts that ex-post observation dates are generally not preferred as dates that produce higher rates can be selected.<sup>717</sup> In addition, Ovum notes that the Swedish regulator considers the 6 month average over a 5 year period on 10 year maturity nominal government bonds to be appropriate for calculating the risk free rate.<sup>718</sup>

Ovum submits that a rate of 6.31 per cent is an appropriate estimate of the risk-free rate for the 2008 Undertaking based on the average YTM over the 10 trading days leading up to and including 31 December 2007.<sup>719</sup>

Optus submits the ACCC should reconsiders its use of a 10 year Government bond rate as the risk free rate for the purpose of estimating the cost of debt capital. Optus considers a reasonable alternative for the ACCC to consider is to match the maturity of the debt instrument with the regulatory period. This is because it would allow better matching of risk and compensation and reduce under or over compensation.<sup>720</sup>

Optus submits the 3 year government bond rate should be considered as an alternative.<sup>721</sup>

### *ACCC view*

As stated in its Draft Decision, the ACCC considers that the use of 10 year Australian Government bonds as appropriate, although the ACCC generally considers regulated

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<sup>713</sup> Telstra, *WACC submission*, 4 April 2008, pp. 10-11.

<sup>714</sup> Telstra, *Response to Ovum*, 5 December 2008, p. 37.

<sup>715</sup> Telstra, *Response to Ovum*, 5 December 2008, p. 37.

<sup>716</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 95.

<sup>717</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 30.

<sup>718</sup> Ovum, *TEA model (v1.0) economic review*, 6 August 2008, p. 29.

<sup>719</sup> Ovum, *TEA model (v1.0) economic review*, 6 August 2008, p. 29.

<sup>720</sup> Optus, *Analysys Cost model for Australian Fixed Network Services*, March 2009, p. 19.

<sup>721</sup> Optus, *Analysys Cost model for Australian Fixed Network Services*, March 2009, p. 19.

firms should use an averaging period when estimating the yield on the risk-free rate and yield on debt, to address day-to-day market volatility.<sup>722</sup>

The ACCC agrees with Ovum's view that possible bias may have been introduced by Telstra when selecting the date for the risk-free rate as the 2008 Undertaking was resubmitted subsequent to the date used by Telstra.

The ACCC notes that the current risk-free rate is much lower than it was in December 2007, and the current risk-free rate is a necessary input when considering whether the WACC is reasonable. The ACCC is obliged to take into account the current financial date and conditions at the point in time when it makes a decision to accept or reject an undertaking. On this basis, the ACCC considers that Telstra's risk-free rate would be 4.51 per cent based on the ten trading days leading up to 8 April 2009 and considerably lower than the value proposed by Telstra.

### **Debt Risk Premium**

The debt risk premium (DRP) is derived as the difference between the YTM on the chosen debt proxy and the YTM on the chosen risk-free proxy. The DRP accounts for debt specific risk compensation over and above the risk-free rate. The value for the YTM on the chosen debt proxy is usually derived from a benchmark bond index obtained from a reputable financial market data source.

#### *Submissions*

##### *Telstra*

Telstra submits the DRP must be consistent with the risk-free rate. As Telstra does not issue any debt relevant only to the CAN it has applied a Telstra-wide DRP with a 10-year maturity, which is market driven. The Telstra-wide DRP at the close of trading on 31 December 2007 was 1.95 per cent.<sup>723</sup>

In response to the ACCC's Draft Decision, Telstra submits that the ACCC has accepted Telstra's best estimates in relation to the DRP as it is consistent with the ACCC's input in its pricing principles determination.<sup>724</sup>

##### *Other parties*

Ovum submits that an applicable debt premium is 2 per cent. This is based on a risk free rate of 6.31 per cent, as discussed above, as well as the 10 year YTM on A-rated Australian corporate bonds of 8.31 per cent.<sup>725</sup>

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<sup>722</sup> ACCC, *2008 ACCC Draft Decision*, November 2008, p. 96.

<sup>723</sup> Telstra, *WACC submission*, 4 April 2008, p. 20.

<sup>724</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 95.

<sup>725</sup> Ovum, *TEA model (v1.0) economic review*, 6 August 2008, p. 30.

### *ACCC view*

The ACCC notes the difference between Telstra's proposed DRP and that submitted by Ovum.

The ACCC notes that the DRP is significantly different than it was in December 2007, and that the DRP is a necessary input when considering whether the WACC is reasonable. On this basis, the ACCC considers that using Bloomberg's A-Rated cost of debt benchmark to estimate Telstra's vanilla and pre-tax WACC, is appropriate. The ACCC notes that on 8 April 2009, it was 2.6 per cent, this compared with Telstra's debt premium of 1.95 per cent.

### **Debt Issuance Cost**

Debt issuance costs are transaction costs associated with the procurement of debt financing. They are a direct cost of raising capital and are therefore generally considered a legitimate expense for regulated firms. If debt issuance costs are considered a legitimate cost they may be added to the cost of debt (i.e. to the WACC) or included as an operating cost allowance.

### *Submissions*

#### *Telstra*

Telstra submits that debt issuance costs should be included as a cost of debt. Telstra proposes that an indicative figure for annualised debt issuance costs for the CAN-related assets would be within the range of 7 (applying in-house partial estimate) to 22 basis points (applying US empirical estimates), with a mid-point of approximately 15 basis points.<sup>726</sup>

In response to the ACCC's Draft Decision, Telstra notes that the ACCC does not agree with Telstra's input for debt issuance costs. However, Telstra does not consider that this input has a significant impact on the overall WACC estimate.<sup>727</sup>

#### *Other parties*

Ovum notes that debt issuance cost figures that were submitted by Telstra are very high compared to those awarded by regulators in other countries for these costs.<sup>728</sup> Based on a methodology developed by Allen Consulting Group (ACG)<sup>729</sup> to calculate debt issuance costs and Telstra's RAF statement, Ovum submits that debt issuance

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<sup>726</sup> Telstra, *WACC submission*, 4 April 2008, p. 22.

<sup>727</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, pp. 94-95.

<sup>728</sup> Ovum, *TEA model (v1.0) economic review*, 6 August 2008, p. 25.

<sup>729</sup> The Allen Consulting Group, *Debt and Equity Raising Transaction Costs*, report to the Australia Competition and Consumer Commission, 2004.

costs for a company of Telstra's size and likely borrowings will be closer to the ACCC's previous estimate of 8.3 basis points per year.<sup>730</sup>

### *ACCC view*

As noted in its Draft Decision, the ACCC currently accepts the inclusion of debt issuance costs in the return on debt.<sup>731</sup> This approach was adopted following recommendations by ACG in a report for the ACCC in the context of decisions made regarding gas and electricity companies.

The methodology developed by ACG relies upon Australian company international bond issue data sourced from Bloomberg. The use of international bond data is favoured by ACG due to the greater disclosure of associated gross underwriting fees and the availability of relevant data.

The ACCC reiterates its position from its Draft Decision,<sup>732</sup> that it considers that the use of the ACG's methodology based benchmark costs, as updated by the ACCC, produces a fair estimate of debt issuance costs in the context of recovering the transaction costs of refinancing Telstra's debt related to its regulated ULLS assets. The ACCC also remains of the view expressed in its Draft Decision,<sup>733</sup> that ACG's methodology that results in decreasing estimated debt issuance costs with increasing amounts of debt on issue due to economies of scale, seems appropriate.

Essentially as a standalone debt financed asset, the CAN would be a large company with a large debt portfolio in its own right, therefore it would be at the low end of ACG's range. Given this, Telstra's hypothetical efficient debt refinancing costs on its CAN would be at the lowest level of debt issuance costs estimated by ACG. The ACCC is not satisfied that Telstra's mid-point of 15 basis points per annum is a fair estimate of the transaction costs it would incur in raising debt.

The ACCC considers that Telstra's debt issuance costs would be at the lower end of Telstra's proposed range. Additionally, in assessing Telstra's WACC the ACCC has used 8.3 basis points as the relevant debt issuance costs input. The ACCC however, notes that using Telstra's preferred debt issuance costs does not significantly affect the overall WACC.

### **Market Risk Premium**

The market risk premium (MRP) is the expected risk premium investors require over the risk-free return to induce them to invest in a fully diversified "market" portfolio. The MRP is normally quoted as an annual figure and all discussion here assumes that convention.

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<sup>730</sup> The Allen Consulting Group, *Debt and Equity Raising Transaction Costs*, report to the Australia Competition and Consumer Commission, 2004.

<sup>731</sup> ACCC, *2008 ACCC Draft Decision*, November 2008, p. 97.

<sup>732</sup> ACCC, *2008 ACCC Draft Decision*, November 2008, p. 98.

<sup>733</sup> ACCC, *2008 ACCC Draft Decision*, November 2008, p. 98.

In the majority of recent regulatory decisions by the ACCC and other regulators in Australia,<sup>734</sup> the MRP has been taken to equal 6 per cent.

### *Submissions*

#### *Telstra*

Telstra submits that a reasonable MRP range is 5.5 per cent to approximately 8.0 per cent and uses a MRP of 7 per cent to estimate their WACC point estimate on the basis of supporting evidence from Gray and Officer,<sup>735</sup> as well as Bowman's report.<sup>736</sup>

Telstra contends that a 7 per cent MRP is appropriate on the basis that:

- the MRP should be calculated as a sum of a forward looking US MRP of 5.5 per cent and a country risk premium for Australia of 1.5 per cent based on aggregated adjustments to reflect the difference in the US to Australian markets;<sup>737</sup>
- historical Australian MRP studies support a MRP of 7 per cent,<sup>738</sup> and
- the Australian Government Bond Market has been distorted by excessive demand and as such these bonds yield's are artificially low. Telstra submits that because of this the historical MRP needs to be uplifted to reflect recent structural shifts that have occurred in the Australian Government Bond Market.<sup>739</sup>

Telstra also submits that a MRP of 6 per cent, which has previously been used by the ACCC, is too low and that Telstra will not be able to recover its true costs of funds and its capital providers will not be adequately compensated for the risk which they bear.<sup>740</sup>

In response to the ACCC's Draft Decision, Telstra submits that the ACCC is maintaining a long-held view that a MRP of 6 per cent should be maintained, despite a wide range of empirical estimates which indicate a higher MRP is appropriate.<sup>741</sup>

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<sup>734</sup> For example, Table 5.1 in the Australian Energy Regulator's Issues Paper on WACC provides an overview of the MRPs used by Australian regulators.  
[http://www.aer.gov.au/content/item.phtml?itemId=722312&nodeId=d91f7605b58ef42b64dda8253f2d1b1c&fn=Issues%20paper%20\(6%20August%202008\).pdf](http://www.aer.gov.au/content/item.phtml?itemId=722312&nodeId=d91f7605b58ef42b64dda8253f2d1b1c&fn=Issues%20paper%20(6%20August%202008).pdf) (accessed October 2008).

<sup>735</sup> S. Gray and R. R. Officer, *A Review of the Market Risk Premium and Commentary on Two Recent Papers, a Report Prepared for the Energy Networks Association*, 15 August 2005 cited in Telstra, *Weighted Average Cost of Capital*, 4 April 2008.

<sup>736</sup> Robert. G. Bowman, *Report on the appropriate weighted average cost of capital*, Prepared for Telstra, May 2007 cited in Telstra, *Weighted Average Cost of Capital*, 4 April 2008.

<sup>737</sup> Telstra, *WACC submission*, 4 April 2008, p. 24.

<sup>738</sup> For example, S. Gray and R. R. Officer, *A Review of the Market Risk Premium and Commentary on Two Recent Papers, a Report Prepared for the Energy Networks Association*, 15 August 2005 cited in Telstra, *Weighted Average Cost of Capital*, 4 April 2008.

<sup>739</sup> Telstra, *WACC submission*, 4 April 2008, p. 24.

<sup>740</sup> Telstra, *WACC submission*, 4 April 2008, p. 30.

<sup>741</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 104.

Telstra submits that empirical work on MRP summarised by Officer and Gray<sup>742</sup> provide estimates ranging from a low of 6.43 per cent to 7.70 per cent between the periods of 1975 and 2004. Telstra notes that Officer and Gray's preferred estimate is 7.17 per cent over the 120 years up to 2004. When extending the period of estimation, Telstra submits that updated work from Officer and Gray indicates that the average MRP of 7.5 per cent (1883 to 2003) is appropriate. However, in recognition of the data deficiencies before 1958, Officer and Gray contend that a reasonable MRP estimate is 6.7 per cent, without accounting for the impact of dividend imputation. As such, Telstra submits that this provides empirical support for an estimate for MRP around 7 per cent and certainly higher than 6 per cent.<sup>743</sup>

Telstra notes that both the ACCC and Ovum rely on the findings of Dimson, Marsh and Staunton<sup>744</sup> (Dimson et al) to support the retention of a 6 per cent MRP and it is on this basis that Ovum argues that a historical ex-post MRP estimate needs to exclude components which are unlikely to persist. Telstra considers that making any adjustment for unexpected events is arbitrary and can lead to further distortions to the MRP. Telstra support the use of long-term averaging of MRP outcomes as this reduces the weight of any particular event which may affect the MRP.<sup>745</sup>

Telstra considers that the most appropriate approach for adjusting MRP for imputation credits is to adopt the long-term average imputation exclusive estimate of MRP and to augment it by including an add-on term caused by imputation over the years in which imputation has been effective. Telstra submits that the add-on to the imputation credits exclusive MRP is between 0.9 per cent and 1.7 per cent.<sup>746</sup>

Telstra submits that its preferred treatment of the relationship between MRP and imputation credits is for the MRP to be based around 7 per cent on an imputation-exclusive basis, and the imputation factors be based on the marginal investor approach and set at zero. Telstra submits that this approach is internally consistent.<sup>747</sup>

Telstra submits that the ACCC's approach is internally inconsistent as MRP is not adjusted to reflect its estimate of gamma. Telstra also submits that unless the inconsistency between gamma and MRP is resolved, then Telstra may be unable to recoup "prudently incurred efficient costs."<sup>748</sup>

In response to Ovum's report, Telstra submits that Ovum supports the use of an ex-post MRP while Telstra considers that an ex-ante MRP is required by investors.

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<sup>742</sup> R. Officer and S. Gray, *A review of the Market Risk Premium and Commentary on Two Recent Papers*, A Report for the Energy Networks Association, 15 August 2005.

<sup>743</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 104.

<sup>744</sup> E. Dimson, P. March, and P. Staunton, *The worldwide equity premium: a smaller puzzle*, 7 April 2006.

<sup>745</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 105.

<sup>746</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 105.

<sup>747</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, pp. 105-106.

<sup>748</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 106.

Telstra submits that investors only have access to raw data and not the analysis of the components which are not transitory or non-repeatable influences.<sup>749</sup>

Telstra submits that the Dimson et al<sup>750</sup> work which Ovum relies on, implies that real market return has been non-stationary and that they seek to adjust the MRP down for declining trends in dividend yields, but do not suggest doing the same adjustment to the non-dividend component.<sup>751</sup>

Telstra also submits that Dimson et al use an adjusted average over 17 countries. Telstra suggests that if any adjustment should be made, it should be specific for Australia.<sup>752</sup>

In its response to access seekers, Telstra submits that Optus' rationale of regulatory precedent as a reason for supporting an MRP simply cascades previous regulatory decisions. Telstra also submits that this rationale lacks independent economic evidence and that recent financial events should only increase the MRP for all investments, other than Government bonds.<sup>753</sup>

Telstra contends that contrary to Optus' view, Telstra has not and does not condone the use of an MRP of 4.5 per cent in the context of Mobile Terminating Access Service (MTAS). Telstra also notes that a global MRP was used for MTAS, but that an Australian specific MRP is more appropriate for ULLS, particularly as a global MRP cannot be simply and directly transformed to an Australian MRP.<sup>754</sup>

Bowman on behalf of Telstra submits MRP can be measured by either geometric or arithmetic returns and that while the ACCC has not discussed the distinction in the past, the implicit assumption is that arithmetic returns was the appropriate measure. Bowman subsequently submits that while the ACCC's discussion of Brailsford, Handley and Maheswaran<sup>755</sup> (Brailsford et al) notes the use an arithmetic measure, both Ovum and the ACCC also cite geometric MRP returns.<sup>756</sup>

Bowman submits that because the asset value does not change during the period of the Undertaking, and the net asset base decreases because of depreciations, the use of a

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<sup>749</sup> Telstra, *Response to Ovum*, 5 December 2008, p. 38

<sup>750</sup> E. Dimson, P. March, and P. Staunton, *The worldwide equity premium: a smaller puzzle*, 7 April 2006.

<sup>751</sup> Telstra, *Response to Ovum*, 5 December 2008, p. 38.

<sup>752</sup> Telstra, *Response to Ovum*, 5 December 2008, p. 39.

<sup>753</sup> Telstra, *Response to Access Seekers*, 18 November 2008, p.66.

<sup>754</sup> Telstra, *Response to Access Seekers*, 18 November 2008, pp.66-7.

<sup>755</sup> T. Brailsford, J. Handley, and K. Maheswaran, *A re-examination of the historical equity risk premium in Australia*, Accounting and Finance, March 2008.

<sup>756</sup> R.G Bowman, *Comments on reports of Optus and Ovum and the ACCC Draft Decision*, 17 March 2009, p. 4.

geometric measure of MRP is inappropriate. Further, because returns are not reinvested in a given year, the arithmetic return is the more appropriate return.<sup>757</sup>

Bowman submits that the geometric averaging of a series of historical returns will be less than an arithmetic average, over the same period. Bowman considers that by emphasising geometric measures of the MRP, Ovum and the ACCC are biasing the MRP estimate downwards.<sup>758</sup>

Bowman submits that Ovum chooses a measure of MRP that is not consistent with its own view on the value of imputation credits, thereby artificially reducing the MRP. Bowman submits that Ovum's analysis supports Telstra's claim for a 7 per cent MRP.<sup>759</sup>

Bowman also submits that the ACCC has not addressed why benchmarking is not appropriate for the MPR when it is willing to use this approach for estimating beta. Bowman submits that the ACCC's consideration of whether the CAPM framework should be a domestic or international version to be irrelevant. This is because he considers the Australian market as an open economy.<sup>760</sup>

Bowman submits that the ACCC's use of Brailsford et al excludes the value of imputation credits. Including these would raise the MRP from 6.2 per cent to 6.7 per cent. Bowman also submits that the ACCC does not explain how the adjustments made to the Dimson et al study are relevant to Australia.<sup>761</sup>

#### *Other parties*

Optus submits that Telstra's MRP is excessive, inconsistent with regulatory precedent,<sup>762</sup> and would result in an overestimation of efficient cost.<sup>763</sup> Optus also cite a report by CEG which indicates that there is support from a range of Australian regulators for a MRP of 6 per cent. Such regulators include the Independent Pricing and Regulatory Tribunal of New South Wales, and the Independent Competition and Regulatory Commission (ACT).<sup>764</sup>

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<sup>757</sup> R.G Bowman, *Comments on reports of Optus and Ovum and the ACCC Draft Decision*, 17 March 2009, p. 5.

<sup>758</sup> R.G Bowman, *Comments on reports of Optus and Ovum and the ACCC Draft Decision*, 17 March 2009, p. 6.

<sup>759</sup> R.G. Bowman, *Comments on reports of Optus and Ovum and the ACCC Draft Decision*, 17 March 2009, p. 6.

<sup>760</sup> R.G. Bowman, *Comments on reports of Optus and Ovum and the ACCC Draft Decision*, 17 March 2009, p. 9.

<sup>761</sup> R.G. Bowman, *Comments on reports of Optus and Ovum and the ACCC Draft Decision*, 17 March 2009, p. 11.

<sup>762</sup> Optus, *Response to the ACCC's discussion paper*, August 2008, p. 51.

<sup>763</sup> Optus, *Response to the ACCC's discussion paper*, August 2008, p.52.

<sup>764</sup> CEG, June 2008, *The Cost of Capital for the NBN*, p.20. Cited in Optus, *Optus Response to the ACCC's Discussion Paper*, August 2008, p. 51.

Ovum contends that Telstra's proposed MRP is high, and contributes to a higher cost of equity.<sup>765</sup> In reaching this conclusion, Ovum considers a number of studies, including one by Neville Hathaway<sup>766</sup> which examines data from 1875 to 2005, and a survey of investment bank brokers<sup>767</sup> which covers dates from 2001 to 2006. As such, Ovum believes that 6 per cent is a fair estimate of the MRP.<sup>768</sup>

In response to Telstra's submission, Ovum have provided additional information to support their initial view that an MRP of 6 per cent is appropriate. Specifically, to support the ACCC's argument regarding the overstatement of historical MRP values Ovum cites evidence from the AER's *Review of the WACC Parameters*<sup>769</sup> ('AER Review'). Ovum suggests that the evidence presented in the AER Review implies that even though the value of the downward adjustment presented in Ovum's initial assessment was not Australian specific, a downwards adjustment was required, potentially driving the MRP below 7 per cent.<sup>770</sup>

Ovum notes that while Telstra quotes empirical estimates that suggest an MRP above 7 per cent, including that from Gray and Officer, Telstra omits to note that Gray and Officer did not recommend increasing the MRP from 6 per cent.<sup>771</sup>

Ovum also notes that Telstra claims that the ACCC's approach is internally inconsistent as it does not adjust the MRP to reflect the estimate of gamma. Ovum also notes that Telstra's claims are not reflective of the AER's view which assessed a number of studies regarding this issue.<sup>772</sup> Ovum notes that the AER concluded that "regulators did have regard to the value of imputation credits in establishing this value [MRP of 6 per cent], which was consistent with the positive value of imputation credits adopted in those decisions."<sup>773</sup>

Ovum submits that the following observations can be made based on a report for the AER by Handley:<sup>774</sup>

- the period commencing between 1883 and 1958 and finishing in 2008 should be selected for the estimates of historical MRP

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<sup>765</sup> Ovum, *TEA model (v1.0) economic review*, 6 August 2008, p. 26.

<sup>766</sup> Neville Hathaway, *Australian Market Risk Premium*, Capital Research, January 2005, cited in Ovum, *Economic review TEA model (v1.0)*, 6 August 2008, p. 33.

<sup>767</sup> Ovum, *TEA model (v1.0) economic review*, 6 August 2008, p. 33, which cites G. Truong, G. Partington, and M. Peat, *Cost of Capital Estimation and Capital Budgeting Practice in Australia*, 2006.

<sup>768</sup> Ovum, *TEA model (v1.0) economic review*, 6 August 2008, p. 34.

<sup>769</sup> AER, *December 2008 WACC Review Explanatory Statement*, 2008.

<sup>770</sup> Ovum, *TEA model (v1.2) economic review*, 6 February 2009, p. 21.

<sup>771</sup> Ovum, *TEA model (v1.2) economic review*, 6 February 2009, pp. 21-22.

<sup>772</sup> Ovum cite, AER, *December 2008 WACC Review Explanatory Statement*, 2008.

<sup>773</sup> Ovum, *TEA model (v1.2) economic review*, 6 February 2009, p. 22.

<sup>774</sup> J. Handley, *A Note on the Historical Equity Risk Premium* - Report prepared for the Australian Energy Regulator, 17 October 2008.

- by considering an imputation factor of zero, MRP ranges between 5.6 per cent and 6.1 per cent; while an imputation factor of 0.5 provides an MRP of 5.9 per cent and 6.4 per cent.<sup>775</sup>

Accordingly, Ovum submits that they maintain their view that a value of 6 per cent is a fair estimate of MRP.<sup>776</sup>

### *The ACCC's view*

The ACCC reiterates its view from its Draft Decision<sup>777</sup> that the CAPM is a forward looking equilibrium asset pricing model and the allowed MRP should be just sufficient to induce future investment in the market portfolio. Further, the ACCC believes that if a domestic CAPM is applied in Australia the appropriate MRP to be used in this model is the Australian domestic MRP.

The ACCC has consistently used a domestic CAPM to estimate the cost of equity capital. Telstra has not presented any compelling evidence to support an international CAPM or the use of an American domestic CAPM with a country risk premium for Australia.

As noted in its Draft Decision,<sup>778</sup> the ACCC acknowledges that a number of historic based MRP studies demonstrate returns of more than 6 per cent, with a recent study showing excess returns excluding imputation credit value of 6.3 per cent from 1958 to 2005.<sup>779</sup> Handley, in a report for the AER on the historical equity risk premium, indicates a MRP of 6.5 and 6.2 per cent for 1883-2007 and 1883 - 15 October 2008 respectively.<sup>780</sup> Officer and Bishop, indicate an MRP of 6.1 and 6.0 per cent for 1883-2008 and 1958-2008 respectively, with an imputation credit factor of 0.5.<sup>781</sup> This is consistent with a forthcoming report from Handley.<sup>782</sup>

However, as noted in the Draft Decision, a study by Dimson et al argue high equity returns over the second half of the twentieth century were due to three major factors: unprecedented growth in productivity and efficiency; a fall in the required rate of return because of decreased business and investment risk; and a significant decrease in transaction and monitoring costs over time.<sup>783</sup>

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<sup>775</sup> Ovum, *TEA model (v1.2) economic review*, February 2009, pp. 22-23.

<sup>776</sup> Ovum, *TEA model (v1.2) economic review*, February 2009, p. 23.

<sup>777</sup> ACCC, *2008 ACCC Draft Decision*, November 2008, p. 99.

<sup>778</sup> ACCC, *2008 ACC Draft Decision*, November 2008, p. 100.

<sup>779</sup> T. Brailsford, J. Handley, and K. Maheswaran, *A Re-examination of the Historical Equity Premium in Australia*, 2006.

<sup>780</sup> J. Handley, *A note on the historical equity risk premium – Final*, 17 October 2008, p. 8.

<sup>781</sup> R. Officer and S. Bishop, *Market Risk Premium*. January 2009, p. 3.

<sup>782</sup> J. Handley, *Further comments on the Expected Market Risk Premium – Updated Draft*, 14 April 2009, p. 7.

<sup>783</sup> E. Dimson, P. March, and P. Staunton, *Global Evidence on the Equity Risk Premium* Journal of Applied Corporate Finance 15(4) 2003. The ACCC also notes that 2006 paper by the same authors continues to support the view historical estimates are expected to overestimate the forward looking

The ACCC also notes that the historical estimates for Australia in the Dimson et al study are based on the same data series as Officer's estimate and this data is considered biased. As such, the most relevant data for historical estimates in the data is Handley's forthcoming paper.<sup>784</sup>

For these reasons, the ACCC reiterates its view expressed in its Draft Decision that a forward looking estimate of the MRP could be expected to be lower than the values obtained from historical studies.<sup>785</sup>

The ACCC notes that Telstra generally disagrees with any adjustment to historical MRP estimates on the basis of declining dividend yields.<sup>786</sup> The ACCC notes however, that Telstra has not provided sufficient evidence to support this view. Telstra also claim that if any adjustment to historical MRP should be made, it should be specific to Australia. While the ACCC considers that the decline may have varied slightly across countries it still considers the Australian MRP will have declined significantly due to the points outlined above. The ACCC also notes that even without making any adjustment for these factors, using the most up-to-date historical data does not support Telstra's proposal.

The ACCC notes that Telstra considers the ACCC's approach to MRP is internally inconsistent as MRP is not adjusted to reflect its estimated imputation credit factor. The ACCC rejects this suggestion and notes, as set out in the AER's WACC Review, that the use of an MRP of 6 per cent includes a positive value for the imputation credit factor:

The AER has found that the regulators did have regard to the value of imputation credits in establishing this value which was consistent with the positive value of imputation credits adopted in those decisions.<sup>787</sup>

The ACCC also rejects the claims made by Bowman that it has used a mixture of geometric and arithmetic measures for MRP. The ACCC notes that it has used arithmetic MRP estimates in its assessment of what it considers is a fair estimate of the MRP for the purposes of assessing Telstra's WACC value.

In relation to Telstra's claim that Officer and Gray's<sup>788</sup> work supports an MRP of 7 per cent, the ACCC does not agree. The ACCC notes that Officer and Gray state that they apply "caution before changing MRP estimates"<sup>789</sup> Further, for the reasons

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MRP. E. Dimson, P. March, and P. Staunton, *The Worldwide Equity Premium: A Smaller Puzzle*, Revised 7 April 2006.

<sup>784</sup> J. Handley, *Further comments on the Expected Market Risk Premium – Updated Draft*, 14 April 2009.

<sup>785</sup> ACCC, *2008 ACCC Draft Decision*, November 2008, p. 100.

<sup>786</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 105.

<sup>787</sup> AER, *December 2008 WACC Review Explanatory Statement*, 2008, p. 142.

<sup>788</sup> R. Officer, and S. Gray, *A review of the Market Risk Premium and Commentary on Two Recent Papers*, A Report for the Energy Networks Association, 15 August 2005.

<sup>789</sup> R. Officer, and S. Gray, *A review of the Market Risk Premium and Commentary on Two Recent Papers*, A Report for the Energy Networks Association, 15 August 2005, p. 5.

outlined in Dimson,<sup>790</sup> the ACCC considers that historical estimates normally could be expected to overestimate the forward looking MRP for Australia. It is also noted that the most up to date unadjusted historical estimates from Handley does not support an MRP of 7 per cent.<sup>791</sup> Finally, the ACCC would like to make clear it has carefully considered benchmarking in coming to its conclusion on what is a fair estimate of the forward looking MRP.

The ACCC notes that Telstra has submitted that the Australian Government bond market has been distorted by excessive demand<sup>792</sup> and an increase in the MRP is needed to adjust for this. The ACCC notes that although Telstra referenced a NERA paper that argues a bias exists, the ACCC does not consider this provides sufficient evidence to support this view and reiterates its rejection of the argument for uplift to the MRP in its Draft Decision on the following grounds.<sup>793</sup> First, there is no clear evidence that nominal Commonwealth Government Bonds are distorted, and both the Reserve Bank of Australia and the Australian Government Treasury have specifically rejected this position in letters to the ACCC.<sup>794</sup> Second, the MRP is the amount investors expect to receive over the Australian risk-free rate to hold the Australian market portfolio and is determined by the aggregated risk aversion of all investors in the economy. As such, a decrease in the risk-free rate should not change the required MRP as the overall required return on the market should decrease approximately in line with the decrease in the risk-free rate.

In conclusion, the ACCC considers that up to date historical estimates with an imputation credit factor of 0.5 estimated over the long term estimation periods of 1883-2008 and 1958-2008 falls slightly above 6 per cent. Given these considerations, the ACCC does not consider Telstra's proposed MRP of 7 per cent is appropriate.

### **Equity beta ( $\beta_e$ ) and Asset beta ( $\beta_a$ )**

The equity beta represents a measure of the systematic risk of an equity investment in a company relative to an equity investment in the equity market as a whole. The equity beta includes both the fundamental systematic business risk of the firm and any financial risk due to leverage.

The asset beta represents the fundamental systematic business risk associated with an asset. It equals the equity beta if the firm was financed with 100 per cent equity.

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<sup>790</sup> E. Dimson, P. Marsh, and M. Staunton, *Global Evidence on the Equity Risk Premium*, Journal of Applied Corporate Finance 15(4) 2003.

<sup>791</sup> J. Handley, *Further comments on the Expected Market Risk Premium – Updated Draft*, 14 April 2009, p. 7.

<sup>792</sup> Telstra, *WACC submission*, 4 April 2008, p. 27.

<sup>793</sup> ACCC, *ACCC 2008 Draft Decision*, November 2008, p. 100.

<sup>794</sup> Letter from the Australian Government Treasury to Mr Joe Dimasi, Executive General Manager Australian Competition and Consumer Commission dated 7 August 2007; Letter from the Reserve Bank of Australia to Mr Joe Dimasi Executive General Manager of the Australian Competition and Consumer Commission dated 9 August 2007.  
<http://www.aer.gov.au/content/index.phtml/itemId/714612>

The asset beta does not include financial risk. As such, the asset beta will almost always lie below the equity beta as companies typically have both a positive level of debt gearing and a positive level of systematic risk.

## ***Submissions***

### *Telstra*

Telstra submits that a reasonable range for the asset beta is between 0.625 and 0.825 and that a point estimate of 0.725 is appropriate. These figures were based on three different techniques – direct estimation, benchmarking and first principles estimation. In relation to the applicable equity beta, Telstra has submitted an equity beta value of 1.03 in line with their efficient gearing ratio assumption and their point estimate for the asset beta of 0.725.<sup>795</sup>

One method used by Telstra for calculating their beta is direct estimation. This involves regressing Telstra's equity returns against the equity returns of a proxy for the market portfolio. An ASX index is usually used as a proxy for the Australian market portfolio (as has been used in this case by Telstra). Direct estimation presupposes a company is listed so its returns are observable and requires the business activity which is the subject of the regulation to be one of the primary business activities of the regulated firm.<sup>796</sup>

The second method used by Telstra is benchmarking. Benchmarking is often used when the preconditions for direct measurement are not met or as a cross check of the directly estimated beta value. The benchmarking approach involves estimating a beta by reference to comparable companies. Telstra refer to the regional Bell operating companies (Verizon AT&T, and West) as reasonable comparators for a stand alone CAN asset, since there are no listed entities which provide only CAN services. Telstra also includes a number of international carriers in its benchmark as it believes a more robust estimate is generated by a larger number of comparators.<sup>797</sup>

Telstra has also used estimates of income elasticity of wholesale and retail CAN services to provide guidance on its beta estimate. This method uses estimates of how much the demand for a CAN service will change when income levels fluctuate.<sup>798</sup>

In response to Ovum's report, Telstra notes that Ovum's beta estimates are considerably lower than those used by the ACCC in recent determinations. Telstra submits that this could be due to timing of the data source which Ovum used.<sup>799</sup>

Telstra notes in their response to the Draft Decision that the ACCC assessed Telstra's submission with regards to: the direct estimation method; the benchmarking approach; and first principles estimation. In response, Telstra discuss choosing the correct raw

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<sup>795</sup> Telstra, *WACC submission*, 4 April 2008, p.39.

<sup>796</sup> Bowman, *Report on the Appropriate WACC for services provided over the CAN*, May 2007, p. 53.

<sup>797</sup> Bowman, *Report on the Appropriate WACC for services provided over the CAN*, May 2007, p. 56.

<sup>798</sup> Telstra, *WACC submission*, 4 April 2008, p. 37.

<sup>799</sup> Telstra, *Response to Ovum*, 5 December 2009, p. 40.

equity beta from a number of variations; whether or not to apply the Blume adjustment; and de-levering the equity beta to derive the asset beta.<sup>800</sup>

### *The raw equity beta*

Telstra submit, in their response to the Draft Decisions that Ovum has used monthly data in their analysis when the Copenhagen Economics Study,<sup>801</sup> which Ovum relies on, recommends the use of weekly frequency data.<sup>802</sup>

Telstra contends, in its response to the Draft Decision that recent historic equity beta data includes events which have negatively affected the raw beta, and that are unlikely to continue into the future. Telstra submit that the ASX200 has been affected by events such as the commodity price boom, and accordingly the beta for the telecommunications sector has been lower than it would have been had the boom not occurred. Telstra also consider that now the boom has ended the low equity beta has even less effect on it.<sup>803</sup>

Telstra also submits in response to the Draft Decision that Strategic Financial Group Consulting<sup>804</sup> (SFG) noted similarities between the technology bubble and resources boom and that firms that were not in the boom market did not perform as well which reduced their correlation with the market and the estimated beta.<sup>805</sup>

Telstra also submits in response to the Draft Decision that an equity beta over a five year period includes a number of ACCC decisions, which Telstra contends placed a downwards pressure on its share price. Telstra submits that there are two issues with this; the first being that a historical beta will underestimate a forward looking beta. Second, the historical beta reflects a period when Telstra was becoming more heavily regulated. Telstra submits that if it had not been as highly regulated their stock would have moved more in line with the market and their equity beta would be higher. Telstra concludes that these reasons should be significant enough to cast doubt on whether the ACCC's approach is reasonable.<sup>806</sup>

In response to the Draft Decision, Telstra submits that the traditional CAPM understates the required return on equity where the normal equity beta is less than one, but overstates it where it is greater than one. Telstra also submits that the ACCC's use of five year, monthly frequency data, which they consider to be the low outlier for all sourcing options, is extraordinary of the inclusion of data which includes a low outlier of all the sourcing options.<sup>807</sup>

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<sup>800</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 97.

<sup>801</sup> Copenhagen Economics, *WACC for the Fixed Telecommunications net in Sweden*, 26 October 2007.

<sup>802</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 98.

<sup>803</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 98.

<sup>804</sup> SFG, *The reliability of empirical beta estimates*, 15 September 2008, pp. 30-31.

<sup>805</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 98.

<sup>806</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 99.

<sup>807</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 100.

### *Applying the Blume adjustment to the raw equity beta*

In response to the Draft Decision, Telstra submits that they use an adjusted equity beta, using the Blume adjustment and that the Blume adjustment is regularly used by Bloomberg. Telstra submits that a Blume adjusted equity beta is a weighted average of the raw equity beta and the mean beta for the overall market.<sup>808</sup>

Telstra also submits that the ACCC view that risk is not likely to change overtime is incorrect for the following reasons:

- the Blume adjustment is undertaken by Bloomberg, who supply the equity beta estimates;
- the Blume adjustment makes an adjustment to push the equity beta towards the “more likely ‘market average’ beta of 1;”<sup>809</sup> and
- the ACCC conclusion that risks will not change over time is incorrect, as this ignores the development of other technology alternatives including HFC. Telstra also submits that demand for the CAN is very much dependent on demand for other services.<sup>810</sup>

Telstra therefore concludes that not using a Blume adjustment is invalid and submits that Bloomberg’s estimates of Telstra’s equity following the Blume adjustment are:

- 0.714 – daily frequency
- 0.669 – weekly frequency
- 0.771 – monthly frequency.<sup>811</sup>

### *De-levering the equity beta to determine the asset beta*

In response to the Draft Decision, Telstra notes that the ACCC did not criticise Telstra’s methods of de-levering. Telstra does note however, that the results of the equity beta used, along with the level of gearing, will impact the de-levered asset beta. Telstra submits their de-levered asset betas as of 11 February 2008 are:

- 0.615 – daily frequency
- 0.576 – weekly frequency
- 0.664 – monthly frequency.<sup>812</sup>

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<sup>808</sup> Telstra, *Response to the ACCC’s Draft Decision*, 23 December 2008, pp. 100-101.

<sup>809</sup> Telstra, *Response to the ACCC’s Draft Decision*, 23 December 2008, p. 101.

<sup>810</sup> Telstra, *Response to the ACCC’s Draft Decision*, 23 December 2008, p. 101.

<sup>811</sup> Telstra, *Response to the ACCC’s Draft Decision*, 23 December 2008, p. 102.

<sup>812</sup> Telstra, *Response to the ACCC’s Draft Decision*, 23 December 2008, p. 102.

Telstra submits that there is no analysis to support the ACCC's use of an average asset beta of 0.47. Telstra also notes that the ACCC has again used a five-year average measured with monthly frequency with the justification being "common financial practice." Telstra also notes that if weekly frequency data is used that the average beta is 0.72.<sup>813</sup>

Telstra also submits, in response to the Draft Decision, that different market structures occur not just in Australia and the USA, but also in the other countries used by the ACCC in its own beta benchmarking analysis. Telstra submits that the ACCC does not cite strong evidence to support its claim with regards to the US being a more heavily regulated market.<sup>814</sup>

Telstra, in response to access seekers rejects Optus' claim that RBOCs are not suitable comparators for CAN-only providers in the context of the Undertaking. Telstra submits that Optus' contention ignores the fact that the ULLS enables access seekers to provide a range of services, including VoIP and long-distance calls. Telstra submits that the wider suite of services provided by the RBOCs makes them a better comparator for the future CAN than if they had maintained only their traditional services.<sup>815</sup>

#### *Relevance of Telstra-wide beta at the CAN-only level*

In response to access seekers, Telstra submits that estimates presented of the Telstra-wide beta were a guide only to the likely estimate of the CAN-only beta. Telstra submits that starting with a Telstra-specific beta then adjusting it downwards is a better approach than using estimates unrelated to Telstra. Telstra submits that the aggregate adjustments from a Telstra-specific estimate are likely to be less significant, more controllable and less arbitrary.<sup>816</sup>

Telstra acknowledges that there is a role for both top-down and bottom-up calculations for beta. Telstra submits however, that it does not support the use of uncritical applications of betas based on electricity distribution or gas pipelines. Telstra also considers that uncritical application of these betas may lead to a downwards bias of the beta estimate.<sup>817</sup>

Telstra refutes Optus' claim that electricity and gas networks have similar investment characteristics as the CAN. Telstra argues that electricity and gas operations are likely to have lower operating leverage<sup>818</sup> than telecommunications because many of the inputs to electricity and gas are raw inputs with variable outputs. Telstra also submits that highly leveraged businesses are more volatile than lowly leveraged businesses. Telstra submits that it would expect that the asset beta for telecommunications and the

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<sup>813</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 102.

<sup>814</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, pp. 102-103.

<sup>815</sup> Telstra, *Response to Access Seekers*, 18 November 2008, p. 68.

<sup>816</sup> Telstra, *Response to Access Seekers*, 18 November 2008, p. 67.

<sup>817</sup> Telstra, *Response to Access Seekers*, 18 November 2008, p. 67.

<sup>818</sup> A production facility with low fixed costs, relative to variable costs is said to have low operating leverage. Low operating leverage means lower risk.

CAN mores specifically would be higher than that of electricity distribution and gas pipeline companies.<sup>819</sup>

Telstra also disputes Optus' claim that electricity distribution and gas pipeline companies are similar to telecommunication companies on the basis that they are subject to limited competition from other services. Telstra submits in response to this that the CAN faces numerous competitors from both wires and wireless providers who are displacing an increasing number of CAN users.<sup>820</sup>

In response to access seekers, Telstra submits that discretionary services which are impacted by the economic cycle tend to exhibit higher beta. Telstra considers that services delivered by the CAN and especially those enabled by the ULLS are more discretionary than those delivered by electricity distribution and gas pipeline networks.<sup>821</sup>

Telstra also submits that average asset betas for US companies in electricity, gas and telecommunications support their position that telecommunications services have a higher beta than those of the other utilities. Telstra concludes that the inclusion of gas and electricity beta estimates will likely distort the estimated beta downwards.<sup>822</sup>

### *Systematic risk*

Bowman in a report for Telstra, submits that it is his understanding that Telstra presented information on a Telstra-wide beta because it provides a useful point for developing an estimate of the asset beta, and that it is not relied upon as a correct estimate, but rather relevant to the determination of the appropriate estimate.<sup>823</sup> Bowman notes that Optus considers that Ofcom's approach is appropriate, where assets are disaggregated into its component parts by businesses within the larger company. Bowman also notes that he agrees with this approach, but that Optus have not conducted this analysis.<sup>824</sup>

Bowman notes that Optus rejects the use of RBOC's as comparable companies for estimating beta. Bowman considers that the relevance of RBOC's depends on the systematic risk and magnitude of the activities. Bowman also notes that Optus consider that Ofcom uses an equity beta in the range of 0.7 to 0.8 and that this should be used as a comparator. Bowman submits however, that no evidence is provided as to the volatility of this as a comparator.<sup>825</sup>

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<sup>819</sup> Telstra, *Response to Access Seekers*, 18 November 2008, p. 68.

<sup>820</sup> Telstra, *Response to Access Seekers*, 18 November 2008, p. 68.

<sup>821</sup> Telstra, *Response to Access Seekers*, 18 November 2008, p. 69.

<sup>822</sup> Telstra, *Response to Access Seekers*, 18 November 2008, p. 69.

<sup>823</sup> R.G. Bowman, *Comments on Reports of Optus and Ovum and the ACCC Draft Decision*, 17 March 2009, p. 12.

<sup>824</sup> R.G. Bowman, *Comments on Reports of Optus and Ovum and the ACCC Draft Decision*, 17 March 2009, p. 12.

<sup>825</sup> R.G. Bowman, *Comments on Reports of Optus and Ovum and the ACCC Draft Decision*, 17 March 2009, p. 13.

Bowman refers to Optus' contention that regulatory decisions on gas pipelines and electricity distribution network companies should be used as an estimate of the equity beta for the ULLS business. Bowman considers that the ULLS business is appreciably more competitive and has more systematic risk than the above utilities.<sup>826</sup>

#### *Other issues*

Bowman submits that while he accepts the use of beta estimates using five years of monthly data as a common and acceptable choice, he notes that no comment is made in relation to why weekly data would not be as useful as monthly data.<sup>827</sup> Bowman submits that there is competing research in relation to the advantages and disadvantages of beta estimation periods and that a single reference does not constitute an authoritative case.<sup>828</sup>

Bowman submits that those with substantial experience with estimating equity betas believe that an estimate below 0.4 is unusually low, thereby raising concerns that there may be issues with the data used.<sup>829</sup>

Bowman considers that there is an outlier in the data for the month of September 2005 where Telstra returns were -13.03 per cent, while the market return was 4.37 per cent. Bowman suggests that while this was an observed occurrence, it raises questions in relation to what happened during that period.<sup>830</sup> On 4 September 2005, Telstra announced a revised earning guidance to the market of an EBIT decline of 7 to 10 per cent, a substantial downwards adjustment from the previous announcement on 11 August 2005. Bowman notes that Telstra shares suffered its second worse day of trading over that period.<sup>831</sup>

Bowman submits that if this singular unusual event was removed then the resulting equity beta would be 0.52, still lower than other observations, but no longer an outlier. Bowman notes that there is always a question about how to treat an outlier, but in his opinion, the results with this outlier removed are more useful than the results supplied by Ovum.<sup>832</sup>

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<sup>826</sup> R.G. Bowman, *Comments on Reports of Optus and Ovum and the ACCC Draft Decision*, 17 March 2009, p. 13.

<sup>827</sup> R.G. Bowman, *Comments on Reports of Optus and Ovum and the ACCC Draft Decision*, 17 March 2009, p. 14.

<sup>828</sup> R.G. Bowman, *Comments on Reports of Optus and Ovum and the ACCC Draft Decision*, 17 March 2009, p. 14.

<sup>829</sup> R.G. Bowman, *Comments on Reports of Optus and Ovum and the ACCC Draft Decision*, 17 March 2009, p. 14.

<sup>830</sup> R.G. Bowman, *Comments on Reports of Optus and Ovum and the ACCC Draft Decision*, 17 March 2009, p. 15.

<sup>831</sup> R.G. Bowman, *Comments on Reports of Optus and Ovum and the ACCC Draft Decision*, 17 March 2009, p. 15.

<sup>832</sup> R.G. Bowman, *Comments on Reports of Optus and Ovum and the ACCC Draft Decision*, 17 March 2009, p. 16.

Bowman considers that the international benchmarking conducted by the ACCC which indicated an asset beta of 0.47 could not be given any credence until more detail is provided as to the characteristics of the company.<sup>833</sup>

Bowman also considers that the ACCC's views on first principles estimation is unacceptable as it rejects the methodology out of hand and does not explain its reasons for rejection.<sup>834</sup>

#### *Other parties*

Optus notes that the ACCC most recently used an asset beta of 0.5 and an equity beta of 0.83 in their June 2008 ULLS Pricing Principles and Indicative Prices.<sup>835</sup>

Optus submits that Ofcom's 2005 position paper on British Telecom's (BT's) asset beta should be considered by the ACCC.<sup>836</sup> In the paper, Ofcom disaggregates the equity beta estimate to reflect the varying levels of risk faced by different areas of BT's business.<sup>837</sup> Based on this approach, Optus submits that the use of a Telstra-wide asset beta is inappropriate, because many services offered by Telstra have higher risk profiles than the provision of Telstra's fixed-line CAN.<sup>838</sup> Optus asserts that the equity beta values set by regulators of other natural monopoly assets should be considered.<sup>839</sup>

Optus submits that the selected RBOCs are not reasonable comparators as they have different risk profiles because they provide different services to those provided by Telstra.<sup>840</sup> Optus believes a more suitable entity is BT's Openreach division, which had a recent equity beta range of 0.7 to 0.8.<sup>841</sup>

Following its analysis of various estimation methods, Ovum submits that an appropriate estimate of Telstra's equity beta is 0.394. Ovum calculated the equity beta by using the monthly observed returns over 5 years.<sup>842</sup> De-levering the equity beta using a Monkhouse formula<sup>843</sup> and a debt beta of zero, Ovum recommends an asset beta of 0.32.<sup>844</sup>

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<sup>833</sup> R.G. Bowman, *Comments on Reports of Optus and Ovum and the ACCC Draft Decision*, 17 March 2009, p. 17.

<sup>834</sup> R.G. Bowman, *Comments on Reports of Optus and Ovum and the ACCC Draft Decision*, 17 March 2009, p. 17.

<sup>835</sup> Optus, *Response to the ACCC's Discussion Paper*, August 2008, p. 52.

<sup>836</sup> Optus, *Response to the ACCC's Discussion Paper*, August 2008, p. 53.

<sup>837</sup> Optus, *Response to the ACCC's Discussion Paper*, August 2008, p. 53.

<sup>838</sup> Optus, *Response to the ACCC's Discussion Paper*, August 2008, p. 53.

<sup>839</sup> Optus, *Response to the ACCC's Discussion Paper*, August 2008, p. 54.

<sup>840</sup> Optus, *Response to the ACCC's Discussion Paper*, August 2008, p. 53.

<sup>841</sup> Optus, *Response to the ACCC's Discussion Paper*, August 2008, p. 54.

<sup>842</sup> Ovum, *TEA model (v1.0.) Economic review*, 6 August 2008, p. 37.

<sup>843</sup> The Monkhouse formula takes into account imputation credits and most closely reflects the underlying cash flows that are subject to the analysis.

<sup>844</sup> Ovum, *TEA model (v1.0.) economic review*, 6 August 2008, pp. 37-38.

In response to Telstra's submission, Ovum notes that the decision to recommend a 5-year monthly observed equity beta was not due to it being the lowest value, rather that it was standard practice to examine monthly data over this time period.<sup>845</sup> Ovum also observes that Handley disagrees with CEG's recommendations to the AERs WACC Review to replace the use of the Sharpe CAPM with the use of a Black CAPM.<sup>846, 847</sup>

Optus notes the Analysys cost model uses an equity beta of 0.83 and an implied asset beta of 0.5. It submits that the ACCC's asset beta should be adjusted to reflect the operation of a CAN is lower than that of a PSTN operator. The risks involved in operating the local CAN are more in the nature of utility businesses and lower than the risks faced in operating the PSTN.<sup>848</sup>

### *ACCC view*

The ACCC comments on Telstra's estimation of beta in relation relate to the following issues:

- the methods of estimation of beta;
- the use of a raw equity beta;
- the appropriateness of adjustments to the raw equity beta; and
- delivering the equity beta.

These issues will be addressed in turn.

### *The methods of estimation of beta*

#### Direct estimation method

The ACCC reiterates its view in its Draft Decision that there are potential difficulties with using a direct estimation method to calculate equity betas, including selection biases in timeframes or data frequency. However, the ACCC remains of the view that there is scope to conduct a direct estimation of Telstra's equity beta.<sup>849</sup>

As stated in its Draft Decision, the ACCC is of the view that Ovum's direct estimation of Telstra's beta sourced from Bloomberg data uses an appropriate method of directly estimating Telstra beta.<sup>850</sup> When using the direct estimation method, Ovum calculated the unadjusted beta by using the previous 18-months and 5-years prices respectively, on a monthly, weekly and daily basis, relative to the S&P/ASX 200 index. The ACCC

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<sup>845</sup> Ovum, *TEA model (v1.0.) Economic review*, 6 August 2008, p. 37.

<sup>846</sup> Ovum, *TEA model (v1.2) economic review*, 5 February 2009, pp. 26-27.

<sup>847</sup> F. Black, *Capital Market Equilibrium with Restricted Borrowing*, *The Journal of Business*, 45(3) 1972.

<sup>848</sup> Optus, *Analysys Cost model for Australian Fixed Network Services*, March 2009, p. 20.

<sup>849</sup> ACCC, *2008 ACCC Draft Decision*, November 2008, p. 102.

<sup>850</sup> ACCC, *2008 ACCC Draft Decision*, November 2008, p. 102.

considers that the use of a direct estimate for beta completed using five years of monthly return data should give an appropriate estimate of the systematic risk of Telstra's equity. Therefore, Ovum's estimate of Telstra's equity beta using this approach of 0.394 seems fair in this situation. When Ovum de-levered this equity beta using the Monkhouse formula, it resulted in an asset beta of 0.32.<sup>851</sup>

### The Benchmarking Approach

As stated in its Draft Decision, the use of benchmark betas is prevalent among regulators and finance practitioners and the ACCC considers it appropriate to include some comparisons with comparable operations.<sup>852</sup>

As indicated in its Draft Decision, the ACCC has undertaken benchmarking of beta using five years of monthly and weekly data for both the equity and asset betas.<sup>853</sup> The ACCC selected countries considered advanced by the OECD. However, a number of advanced countries were excluded, including: Cyprus; Malta; Luxembourg; Norway; Iceland; Belgium; Slovenia; and Ireland. These countries were excluded for a range of reasons including: not being publicly listed; lack of data; and lack of revenue from fixed line services.

<b>Firm</b>	<b>5 year monthly equity beta</b>	<b>5 year weekly equity beta</b>	<b>5 year Monthly asset beta</b>	<b>5 year Weekly Asset beta</b>	<b>Debt/ Equity Ratio</b>	<b>Country of Origin</b>
At&t	1.215	0.837	0.954	0.657	0.276	US
Qwest	1.784	1.268	0.691	0.491	1.596	US
Verizon	0.881	0.93	0.643	0.679	0.374	US
Cincinnati Bell	1.546	1.577	0.522	0.533	1.976	US
BCE	0.325	0.438	0.221	0.298	0.472	Canada
British Telecom	1.061	0.843	0.661	0.525	0.61	Britain
Telekom Austria	0.672	0.659	0.453	0.444	0.488	Austria
Telecom Italia	0.724	0.936	0.359	0.465	1.024	Italy
Hellenic Telecom	0.85	0.957	0.577	0.650	0.476	Greece
TDC solutions	0.33	0.538	0.181	0.295	0.83	Denmark
Portugal Telecom	1.01	1.003	0.620	0.616	0.634	Portugal
TeliaSonera	0.659	0.862	0.578	0.756	0.142	Sweden/

<sup>851</sup> P Monkhouse (1997) *Adapting the APV Valuation methodology and the Beta Gearing Formula to the Dividend Imputation Tax System*, Accounting and Finance, 37(1), pp. 69-88.

<sup>852</sup> ACCC, 2008 ACCC Draft Decision, November 2008, p. 132.

<sup>853</sup> ACCC, 2008 ACCC Draft Decision, November 2008, p. 103.

Telefonica	0.916	1.129	0.598	0.737	0.536	Finland Spain
Deutsche Telecom	0.82	0.609	0.465	0.345	0.77	Germany
France Telecom	0.562	0.639	0.318	0.362	0.772	France
KPN	0.339	0.517	0.221	0.337	0.54	Nether-lands
SwissCom	0.136	0.451	0.111	0.370	0.222	Switzer-land
NTT	0.597	0.702	0.349	0.410	0.722	Japan
SingTel	0.739	0.841	0.630	0.717	0.174	Singapore
PCCW	0.684	0.63	0.342	0.315	1.008	Hong Kong
Chungwa	0.283	0.329	0.283	0.329	0	Taiwan
Korea Telecom	0.421	0.362	0.241	0.207	0.754	Korea
Bezeq	0.678	0.693	0.459	0.469	0.482	Israel
Telecom NZ	1.116	1.413	0.813	1.029	0.376	New Zealand
Telstra	0.395	0.459	0.318	0.370	0.244	Australia
<b>Average</b>	<b>0.75</b>	<b>0.78</b>	<b>0.46</b>	<b>0.50</b>	<b>0.62</b>	

**Source:** Bloomberg Data Services

The international benchmarking above suggests, a benchmark asset beta of around 0.47 appears appropriate for the total assets of a large telecommunications company such as Telstra (i.e. companies with both fixed and mobile networks). The ACCC notes that 0.47 is likely to be higher than the asset beta of the Telstra's CAN alone. This is because the Telstra's CAN business is likely to bear lower systematic risk than Telstra's average business due to higher systematic risk businesses Telstra operates such as mobile communications.

#### First Principles Estimation<sup>854</sup>

The ACCC indicated it in its Draft Decision that it does not consider first principles estimation a valid way to estimate systematic risk.<sup>855</sup> However, the ACCC would like to clarify that what it meant was first principles estimation should not be preferred in this situation to estimate Telstra's asset beta. The ACCC does not consider first principles estimation should be used, or have significant weight placed upon it, when there is the opportunity to use direct estimation and/or benchmarking using directly estimated betas. In line with this and as noted in its Draft Decision, the ACCC also considers that it is inappropriate to use income elasticities of demand at the retail level to infer a systematic risk for the wholesale demand of a regulated asset except in the

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<sup>854</sup> The last method for estimating beta is to qualitatively determine the factors that impact on the sensitivity of a firm's returns to movements in the economy as a whole. (i.e. its systematic risk) The method involves assessing a firm's characteristics and then from this, determining how these will influence the reaction of firm returns to economy wide events. This implicitly involves estimating how systematic factors (GDP shocks) may affect future cash flows and therefore the underlying value of the company.

<sup>855</sup> ACCC, 2008 ACCC Draft Decision, November 2008, p. 103.

most general way, particularly as access services may have a low-beta because the demand for such services is not closely correlated with aggregate demand.

### Issues raised by Telstra

To support its proposed asset and equity beta parameters, Telstra has used a number of methodological assumptions, including: using the Blume adjustment; and using the RBOC as primary comparators.

The Blume (1971) adjustment involves adjusting the raw ordinary least squares beta for expected reversion a firm's beta towards the beta of the market of one. This is often given as:

$$B_{Blume} = B_{OLS} \times 0.67 + 0.33$$

where  $B_{OLS}$  = the beta calculated using ordinary least squares. The Blume adjustment assumes that the firm's systematic risk reverts towards the mean of the market. The ACCC remains of the view expressed in its Draft Decision that it does not consider that the application of the Blume adjustment is valid in this case as the 2008 Undertaking relates to a stand alone regulatory asset whose risk is not expected to change over time.<sup>856</sup> Further, the ACCC notes that the Blume adjustment is an adjustment that is not time dependent and is based on a sample of US firms over different time periods. The ACCC notes there appears to be no basis to assume that the systematic risk of the ULLS service will revert towards the mean systematic risk of the market portfolio through time.

As noted in its Draft Decision, the ACCC considers that the RBOC comparators were originally used as comparators when Telstra was first privatised on the basis that there was no available market data for Telstra. Since 1999, the RBOCs have diversified their business interests and the ACCC considers they are now less relevant as comparators.<sup>857</sup>

The ACCC remains of the view expressed in its Draft Decision that current estimates of RBOCs are likely to have a higher risk on average than Telstra.<sup>858</sup> This is because American telecommunications companies operate in the liberalised and highly competitive US telecommunications market which has a different market structure to the more heavily regulated Australian market.<sup>859</sup> Accordingly, the ACCC does not regard contemporary estimates of the RBOC's betas to be appropriate point estimates of the systematic risk of the ULLS service. However, the ACCC notes that it did include the RBOC estimates in the calculation of its benchmark equity and asset beta estimates.

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<sup>856</sup> ACCC, *2008 ACCC Draft Decision*, November 2008, pp. 103-4.

<sup>857</sup> ACCC, *2008 ACCC Draft Decision*, November 2008, p. 104.

<sup>858</sup> ACCC, *2008 ACCC Draft Decision*, November 2008, p. 104.

<sup>859</sup> The deregulation or more correctly liberalisation of US telecommunications market resulted from the US Telecommunications Act 1996 and related state legislation.

Telstra also submits that it is not possible for the ACCC to estimate the systematic risk of telecommunications without substantial uncertainty. Telstra submits that their benchmark suggests that the likely asset beta could be 15 per cent above or below a point estimate. In addition, Telstra suggests that, when calculating a beta, there are a number of steps made during the calculation which introduce additional uncertainty not taken into account in the statistical standard errors. The ACCC is of the view that simply because there is uncertainty in an estimate is not a reason to adopt a point estimate above the mean. As stated in its Draft Decision, the ACCC considers that such a practice would result in expected overcompensation which it does not regard as appropriate.<sup>860</sup>

As stated in its Draft Decision, in forming its view on Telstra's beta, the ACCC has relied on a wide range of estimates in order to reduce any measurement uncertainty.<sup>861</sup> For example, the ACCC considers benchmarks comprising a number of companies rather than individual direct estimates. The ACCC is of the view that benchmark portfolios should have lower standard errors than individual company estimates.

As stated in its Draft Decision, the ACCC recognises that their benchmarking portfolio estimate gives an asset beta estimate which is significantly larger than Ovum's preferred value estimated directly from Telstra's share price.<sup>862</sup> Direct estimation is common market practice when valuing shares and this implies Telstra should be able to raise equity capital at Telstra's directly estimated cost of equity capital and resultant WACC. As such, the ACCC considers that the use of a benchmark estimate of Telstra's cost of equity capital above the directly estimated value implies a conservative approach has been used to estimate the required return on equity for Telstra shareholders. This should ensure Telstra and its equity investors are adequately compensated for the risk they are bearing.

#### *The raw equity beta*

The ACCC notes Telstra's view that data with weekly frequency should be relied upon. The ACCC notes however, that it considers more weight should be placed on estimates using monthly data sampling over a five year period, because:

- it is the more commonly recommended estimation interval and length used in financial markets;
- it picks up the systematic risk of an investment in Telstra's equity to the equity market as a whole over monthly holding periods which the ACCC considers is more representative of the risks facing longer term investors than using weekly or daily data holding period returns; and
- it is also likely to remove trading effects.

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<sup>860</sup> ACCC, 2008 ACCC Draft Decision, November 2008, p.104.

<sup>861</sup> ACCC, 2008 ACCC Draft Decision, November 2008, p. 104.

<sup>862</sup> ACCC, 2008 ACCC Draft Decision, November 2008, p. 104.

The ACCC also notes that its own benchmarking analysis did estimate equity and asset betas using five years of data using both weekly and monthly sampling frequencies. Both sampling frequencies came up with very similar results and both supported the use of a benchmark asset beta of 0.50.

The ACCC also considers the use of 18 months or 2 years of data has too few sample points for monthly sampling and is arguably also too short an estimation period. This may result in unreliable estimates of equity beta that may be inappropriate as a basis for setting regulated returns for long-term investments.

Accordingly, the ACCC does not consider the evidence presented by Telstra provides compelling evidence of bias and still considers that its historical estimates of the systematic risk going forward as appropriate.

The ACCC notes Telstra's claim that previous ACCC decisions have placed downwards pressure on its share price.<sup>863</sup> The ACCC considers that under the current regulatory approach Telstra shareholders are compensated for the risk they bear (on a regulated asset) and this is fair to its investors and should result in efficient investment which is in the LTIE.

The ACCC notes Telstra's assertion that the R-squared of the beta estimates have averaged around 0.20.<sup>864</sup> The ACCC does not consider that a low R-squared indicates that direct estimates are biased.

The ACCC notes Telstra's view that the traditional CAPM understates the required return on equity of stock with observed equity betas less than one.<sup>865</sup> The ACCC accepts that there may be apparent biases in the CAPM ex-post. However, the ACCC does not consider that this means that the estimated beta was incorrect when estimated (i.e. ex-ante). The result may simply be due to firms changing their risk through operational changes or estimation errors, issues which the ACCC does not consider are of significance in relation to setting expected cash flows for regulated monopolies.

The ACCC considers that the approach it has used is commonly used by finance practitioners and should give an unbiased estimate of the risk facing Telstra's shareholders. In addition, the ACCC considers that as the direct estimate of Telstra's equity beta is a measure of risk facing Telstra's investors across all operations it is likely, if anything, to overestimate the systematic risk on the regulated CAN assets.

Finally, although the ACCC would not expect Telstra's asset beta to change rapidly across time, the ACCC has calculated updated direct estimates of Telstra's equity beta using the Bloomberg data service. The raw equity beta estimate, estimated using Bloomberg for the 60 months ending 31 March 2009 was 0.295, while the equity beta estimate, estimated using 262 weeks of data ending on 10 April 2009 was 0.453. The raw equity beta estimate, estimated using 104 weeks of data ending 10 April 2009 was also 0.453. Therefore, while the ACCC considers caution should be exercised in

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<sup>863</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 99.

<sup>864</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 99.

<sup>865</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 100.

terms of placing too much weight on direct beta estimates for Telstra using updated post 2007 data, the ACCC considers this data also supports the argument that a benchmark asset beta of 0.50 is a conservative value to use to estimate Telstra's cost of equity and to use to assess Telstra's proposed WACC values.

*Applying the Blume adjustment to the raw equity beta*

The ACCC notes that Bloomberg give the option of using the Blume adjustment, or not, but does not indicate in any way that the Blume adjustment is correct. The fact that Bloomberg, and possibly other data providers, give the option to use this adjustment in no way that indicates the ACCC's perspective expressed in the Draft Decision that the Blume adjustment is incorrect in this situation as Telstra have claimed.<sup>866</sup>

The ACCC reiterates its view expressed in its Draft Decision that it does not consider the Blume adjustment to be theoretically sound in this situation. As noted above, the ACCC does not consider the use of the Blume adjustment to be valid in this case as the 2008 Undertaking relates to a stand alone regulatory asset whose risk is not expected to change overtime. There appears to be no basis to assume that the systematic risk of the ULLS service will revert towards the mean systematic risk of the market portfolio through time. Further, the ACCC does not accept on current evidence that the raw equity beta estimated by Ovum would be expected to be an underestimate of Telstra's equity beta.

The ACCC considers it important to clarify a statement made in its Draft Decision - "whose risk is not likely to change over time".<sup>867</sup> The ACCC meant it does not consider Telstra's current level of systematic risk is *expected* to change over time. As stated in its Draft Decision,<sup>868</sup> the ACCC considers that there is no reason to assume the systematic risk facing a regulated monopoly will revert towards the mean of the market (i.e. a beta of 1). While competition does exist with respect to wireless and HFC, it is not clear whether technological change will increase or decrease the systematic risk facing the CAN operations. Currently, ADSL technology is advancing rapidly and the increasing need for high bandwidth may actually increase the CAN's market power and reduce the systematic risk to its cash flows and facing its investors, not increase it. Therefore, the ACCC does not consider there is compelling evidence to suggest direct estimates of Telstra's risk, based on historical data, are biased estimates of the forward looking systematic risk facing its equity investors.

Overall, the ACCC does not consider that applying the Blume adjustment to Telstra's directly estimated raw equity beta estimate appropriate given the current evidence.

*De-levering the equity beta to determine the asset beta*

The ACCC notes Telstra's conclusion that the method of de-levering the equity beta was not criticised by the ACCC. In relation to this comment, while the ACCC

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<sup>866</sup> ACCC, 2008 ACCC Draft Decision, November 2008, p. 104.

<sup>867</sup> ACCC, 2008 ACCC Draft Decision, November 2008, p. 104.

<sup>868</sup> ACCC, 2008 ACCC Draft Decision, November 2008, p. 104.

generally agrees with the use of the Monkhouse formula, its silence on Telstra's application of this formula should not be taken to imply it agreed with Telstra's application.

Of the different beta estimates before it, the ACCC has placed the most weight on Ovum's beta estimate based on five years of monthly data. Relatively less weight has been placed on the benchmark estimates completed by the ACCC because overseas fixed line operations are likely to face different risks relative to Telstra, and may come from domestic markets with different underlying levels and types of systematic/market risk.

The ACCC notes Telstra's comments that the beta is more related to the degree of systematic risk, rather than the form of regulation. The ACCC considers that the RBOC comparators may have a higher level of systematic risk than Telstra. This is due to increased competition in the US market from cable laid out in the technology boom and the different form of regulation that these firms face. Therefore, the ACCC does not consider that US firms are likely to be as good a comparator as they were previously or are likely to be as good as other comparators are from other countries, for example those countries with less competition.

### ***ACCC overall view***

Telstra have submitted an asset beta of 0.725 and an equity beta of 1.03 at a 30/70 debt/equity capital structure.

The ACCC reiterates its view from its Draft Decision that direct estimation yields an estimate for Telstra's asset beta lower than 0.5.<sup>869</sup> It also notes that these beta benchmarks and direct estimation regressions estimate the systematic risk of Telstra overall (the whole company) and not just the CAN which could be expected to face a lower level of systematic risk. The ACCC also notes that an asset beta of 0.50 equates to an equity beta of 0.71 at Telstra's preferred gearing ratio of 30 per cent debt to 70 per cent equity. This is well below Telstra's proposed equity beta of 1.03.

The ACCC considers that benchmark estimates are conservative as they estimate the total systematic risk of Telstra rather than the fixed line assets. Taking all these matters into consideration, the ACCC believes an asset beta of 0.725 is not a fair estimate of the systematic risk of Telstra's CAN assets and for the ULLS.

In assessing the reasonableness of Telstra's WACC the ACCC believes its use of an asset beta of 0.5 is a conservative estimate of Telstra's systematic risk from its CAN assets. The ACCC considers that this gives recognition of the systematic risk faced by Telstra's shareholders from Telstra's CAN investment.

### **Debt Gearing**

Debt gearing is also known as the debt to equity ratio. The relative weights of debt and equity in a firm's capital structure are used to weight the capital costs of equity and debt when calculating the WACC. The debt to equity ratio is calculated as the

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<sup>869</sup> ACCC, 2008 ACCC Draft Decision, November 2008, p. 103.

market value of debt divided by the market value of equity. This measures the relative proportions of the value of the firm's assets accruing to debt and equity capital providers.

## ***Submissions***

### *Telstra*

Telstra submits a debt gearing ratio of 30 per cent debt to 70 per cent equity. This was based on a Telstra wide target market gearing as an estimate of debt gearing for CAN related assets. Telstra also submits that the gearing structure applied should be based on market experience so that opportunity costs are quantified in contemporary terms and on a target basis, as equity investors are interested in likely returns over the medium and long term.<sup>870</sup>

Telstra submits that market based gearing of approximately 30 per cent debt would be typical across comparable telecommunications operators, and suggests that it may be preferable to leave gearing as a constant across the high and low WACC estimates provided in table B.7.1.<sup>871</sup>

In response to a report by Ovum<sup>872</sup> who supports the ACCC's application of book value of debt gearing, Telstra submits that the ACCC has applied a theoretically unusual approach by applying book value to determine the level of gearing. Telstra submits that this approach is also compounded by the fact that the ACCC use a book value from the time Telstra was privatised. Telstra also submits that market value is a more appropriate means of determining the level of gearing as it reflects the contemporary opportunity cost of debt and equity.<sup>873</sup>

Telstra contends that Ovum use the same technique as themselves to convert book gearing as of 30 June 2007 to estimate target market gearing. Telstra note however, that Ovum applies an average share price from the financial year of 2006-07 to estimate the market value of equity. Telstra therefore contends that Ovum mixes the average value of equity over the full financial year with an estimate of market value of debt effective 30 June 2007, and thereby lacking internal consistency. Telstra does note that despite the consistency issues outlined above, Telstra and Ovum still get the same gearing ratio.<sup>874</sup>

Bowman, in a report for Telstra<sup>875</sup> responding to Ovum's advisory note,<sup>876</sup> submits that when providing the average gearing ratio for the selected countries they do not

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<sup>870</sup> Telstra, *WACC submission*, 4 April 2008, pp. 41-42.

<sup>871</sup> Telstra, *WACC submission*, 4 April 2008, pp. 44.

<sup>872</sup> Ovum, *TEA Model (v.1.0) economic review*, August 2008.

<sup>873</sup> Telstra, *Response to Ovum*, 5 December 2008, p. 41.

<sup>874</sup> Telstra, *Response to Ovum*, 5 December 2008, p. 41.

<sup>875</sup> R.G Bowman, *Comments on Reports of Optus and Ovum and the ACCC Draft Decision*, 17 March 2009.

<sup>876</sup> Ovum, *TEA Model (v1.2) economic review*, August 2008.

provide any additional information. Therefore, Bowman submits that he is unable to conduct any substantive review of this information.<sup>877</sup>

Bowman also submits that following Ovum's review of Telstra's accounts and their conclusion that an average gearing ratio of 34 per cent is supported by the benchmark, he could not reconcile the relevant Telstra data.<sup>878</sup>

Bowman submits that using Telstra's Annual Reports as of 30 June 2007, the capital structure data indicates a debt ratio between 20.1 per cent and 30.7 per cent, depending on the liabilities classified as debt. Bowman notes that the ceiling amount is almost the same as the gearing estimated by Telstra.<sup>879</sup>

Bowman notes that the ACCC continues to reference its approach to debt gearing upon book values at the time of the initial privatisation of Telstra. Bowman asserts that this gearing assumption is not accepted in practice and that textbooks state that market values should be used. Bowman submits that the ACCC's conclusion in relation to the debt gearing of the CAN being lower than Telstra's overall operation is not substantiated with evidence. Further, if it is assumed to be lower, Bowman considers that the difference between the two would be modest.<sup>880</sup>

#### *Other parties*

Ovum notes that the ACCC has previously supported a debt gearing ratio of 40 per cent debt to 60 per cent equity as well as a target debt ratio of 40 per cent debt and that this is in accordance with the Telstra-wide historic book value.<sup>881</sup> Ovum submits that analysis of Telstra's accounts for the year ending 30 June 2007 reveals debt gearing of between 23 per cent and 42 per cent debt, based on implied market values of equity/debt.<sup>882</sup> Supported by benchmark data, Ovum recommends the average level of 34 per cent debt to 66 per cent equity.<sup>883</sup>

#### **ACCC view**

The ACCC reiterates its view from its Draft Decision<sup>884</sup> that it does not consider Telstra's proposed debt to equity ratio as appropriate for services on the fixed line network for the following reasons:

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<sup>877</sup> R.G. Bowman, *Comments on Reports of Optus and Ovum and the ACCC Draft Decision*, 17 March 2009, p. 18.

<sup>878</sup> R.G. Bowman, *Comments on Reports of Optus and Ovum and the ACCC Draft Decision*, 17 March 2009, p. 18.

<sup>879</sup> R.G. Bowman, *Comments on Reports of Optus and Ovum and the ACCC Draft Decision*, 17 March 2009, p. 19.

<sup>880</sup> R.G. Bowman, *Comments on Reports of Optus and Ovum and the ACCC Draft Decision*, 17 March 2009, pp. 20-21.

<sup>881</sup> Ovum, *TEA model (v1.0) economic review*, 6 August 2008, p. 38.

<sup>882</sup> Ovum, *TEA model (v1.0) economic review*, 6 August 2008, p. 39.

<sup>883</sup> Ovum, *TEA model (v1.0) economic review*, 6 August 2008, p. 39.

<sup>884</sup> ACCC, *2008 ACCC Draft Decision*, November 2008, p. 106.

- the ACCC notes that according to Telstra's benchmarking approach, appropriate comparator firms have a debt proportion of 37.6 per cent. This is also similar to Ovum's latest regulatory benchmark of regulatory decisions for regulators that employ (LRIC) cost-based CAPM regulation of 38.3 per cent. Ovum's report also indicates preferred debt proportions of European regulatory bodies in a range of 25 to 50 per cent;<sup>885</sup>
- the 30 per cent rate is below the target debt proportion claimed by Telstra in their recent financial accounts of (an average) 34 per cent (as opposed to their current gearing);<sup>886</sup>
- the ACCC historical debt proportion benchmark is close to the book value of gearing of Telstra at privatisation of 41.3 per cent; and
- the ACCC considers that the benchmarks of firm wide capital structure to be conservative estimates of the benchmark debt gearing for the CAN assets and the ULLS as the CAN should be lower risk than Telstra's operation overall and should be able to service more debt in its efficient capital structure.

For these reasons, the ACCC continues to consider Telstra's proposal of 30 per cent debt to 70 per cent equity would not lead to fair WACC estimates.

In relation to Bowman's comment that the ACCC considers that the CAN would have a higher optimal debt to equity ratio than Telstra overall, this ACCC consideration is based on the assumption that operations with lower risk will carry higher optimal debt levels.<sup>887</sup> The ACCC considers in support of this that Telstra's other operations, including mobiles and advertising, on average have less market power than the CAN and would have a lower optimal debt to equity ratio for this reason. The ACCC notes that mobiles and other operations of Telstra are also likely to have relatively high levels of operating leverage and Telstra has not demonstrated how its cost structure varies across operations or (if it does) why this operating leverage in this instance indicates the CAN would be forced to carry lower debt.

The ACCC also rejects the implicit argument made by Bowman that because operations that use the ULLS could have high risk, the ULLS service itself has high risk.<sup>888</sup> This is akin to saying that because firms that use electricity may be high risk, electricity transmission is high risk. The ACCC considers as the base service provided by the ULLS is an essential input into a range of services, it has significant market power and therefore could be expected to have relatively low risk.

In relation to Bowman's argument that the ACCC has a preference for book values, the ACCC notes that it considers that market values are of relevance and the ACCC has placed considerable weight on benchmark estimates of market values.

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<sup>885</sup> Ovum, *Regulation of cost of capital in the European fixed-line telecoms sector*, 22 February 2006.

<sup>886</sup> Ovum, *Regulation of cost of capital in the European fixed-line telecoms sector*, 22 February 2006.

<sup>887</sup> R.G. Bowman, *Comments on reports of Optus and Ovum and the ACCC Draft Decision*, 17 March 2009, p. 20.

<sup>888</sup> R.G. Bowman, *Comments on reports of Optus and Ovum and the ACCC Draft Decision*, 17 March 2009, p. 20.

For the purposes of assessing Telstra's vanilla and pre-tax WACC the ACCC has used a 40 per cent debt to 60 per cent equity gearing ratio. The ACCC does recognise however, that the difference between the ACCC's equity gearing ratio and that proposed by Telstra does not have a material effect on the overall WACC.

## **Tax Rate**

The pre-tax WACC has an allowance for the corporate tax that Telstra will pay that investors cannot claim back through the use of imputation credits. The pre tax WACC is commonly calculated as set out in section B7, equation 2.

The effective tax rate is considered an essential input into the pre-tax WACC that is used as an input in the TEA model. In essence the effective tax rate is used in combination with the value of gamma to gross up the post-tax required return on equity to a pre-company-tax required return on equity investment.

## ***Submissions***

### *Telstra*

Telstra submits that there are two choices for the tax rate, the statutory tax rate and the effective tax rate. Telstra contends that the statutory tax rate is appropriate because under the TSLRIC framework all assets are assumed to be built at the start of the fiscal year being estimated. As the current tax laws do not allow accelerated depreciation, Telstra argues that the statutory tax rate will equal the effective tax rate in the absence of accelerated depreciation.<sup>889</sup>

In response to the ACCC Draft Decision, Telstra submit that the tax rate should reflect the tax burden over the life of the relevant asset. Telstra submits that if accelerated depreciation is allowed then the effective tax rate would be lower in the early years of the assets life, while in later years the tax rate would be above the statutory rate as the amount of depreciation that can be claimed as a deduction against taxable income falls. Telstra concludes, therefore that if one tax rate is to be used over the life of the asset, 30 per cent is appropriate.<sup>890</sup>

Telstra also submits that 30 per cent is reasonable for three other reasons:

- there is inconsistency between the ACCC's approach to depreciation in the context of the WACC and the actual depreciation profile which results from the application of a tilted annuity approach;
- the ACCC's approach seems to change from hypothetical new entrant to actual costs; and
- Telstra's approach is consistent with the view of IRG<sup>891</sup> consulting cited by Ovum.<sup>892</sup>

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<sup>889</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 12.

<sup>890</sup> Telstra, *Response to Draft Decision*, 23 December 2008, p.106.

<sup>891</sup> IRG, *Regulatory Accounting, Principles of Implementation and Best Practice for WACC calculation*, February 2007.

Telstra also submits that the ACCC relies on estimates of the national average effective tax rate from the 2006-07 budget papers. Telstra however, submit that the national average effective tax rate is not a useful comparator to the average tax rate relevant to a single asset over its useful life.<sup>893</sup>

In response to a report by Ovum,<sup>894</sup> Telstra submits that Ovum have supported the ACCC's application of an effective tax rate and notes that Ovum have applied the ACCC's previous estimate of the effective tax rates. Telstra also notes that despite the ACCC preferring to apply an effective tax rate, it applied a corporate tax rate in the ULLS final decision (August 2006)<sup>895</sup>.<sup>896</sup>

Telstra submits that accelerated depreciation is the main potential driver of divergence between the statutory and effective tax rate, and is no longer relevant in a TSLRIC+ context due to changes in the tax laws for assets purchased or constructed after 21 September 1999.<sup>897</sup>

In response to Ovum, Telstra also submits that if the ACCC continued to reject the use of the statutory tax rate on the basis that many of the assets were constructed prior to the discontinuance of accelerated depreciation then Telstra's book value would be approaching, if not above the statutory tax rate for many of the assets.<sup>898</sup>

Telstra also submit that an uncritical application of Ovum of a 20 per cent rate is inappropriate, and empirical support is needed to determine if such an application was appropriate.<sup>899</sup>

Telstra also submits that the narrow application of the corporate tax rate in the re-levering and de-levering equations around beta gives weight to the view that a statutory tax rate is appropriate. Telstra submits that it is not aware of any estimates of the asset beta which do not apply a statutory tax rate. Telstra conclude that applying the statutory tax rate in the de-levering process for beta, and then using an "guess-timated" effective tax rate in the re-levering process is inconsistent and distorts the beta results.<sup>900</sup>

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<sup>892</sup> Telstra, *Response to Draft Decision*, 23 December 2008, pp. 106-107.

<sup>893</sup> Telstra, *Response to Draft Decision*, 23 December 2008, p. 107.

<sup>894</sup> Ovum, *TEA model (v1.0) economic review*, 6 August 2008

<sup>895</sup> ACCC, *Assessment of Telstra's ULLS monthly charge undertaking: Final decision*, August 2006.

<sup>896</sup> Telstra, *Response to Ovum*, 5 December 2008, p. 39.

<sup>897</sup> Telstra, *Response to Ovum*, 5 December 2008, p. 39.

<sup>898</sup> Telstra, *Response to Ovum*, 5 December 2008, p. 40.

<sup>899</sup> Telstra, *Response to Ovum*, 5 December 2008, p. 40.

<sup>900</sup> Telstra, *Response to Ovum*, 5 December 2008, p. 40.

### *Other parties*

Ovum in a report for the ACCC submitted that that an effective tax rate of 20 per cent should be applied in line with previous ACCC decisions.<sup>901, 902</sup>

In response to Telstra's submission, Ovum notes that it shared the ACCC's view regarding the potential advantages that a new entrant could have from accelerated depreciation and therefore recommended the use of the effective tax rate for calculating Telstra's WACC value.<sup>903</sup>

Ovum notes that in 2004-5 the Australian Treasury estimated the effective tax rate to be around 20 per cent, Pricewaterhouse Coppers's (PWC) study shows that ASX100 companies average effective tax rate is 25.1 per cent. Ovum consider that the difference results from different methodologies and sample sizes.<sup>904</sup>

Ovum considers that effective tax rates have increased over recent years and that during the period 2005 to 2007, effective tax rates have increased by approximately 6 per cent. When applying this percentage increase to the 2004-5 effective tax rate of 20 per cent and the PWC study rate of 25.1 per cent, the implied effective tax rate for 2007 is 21.3 and 26.7 per cent respectively. Ovum concludes therefore that the effective tax rate is within the range of 21.3 per cent and 26.7 per cent with an average of 24 per cent.<sup>905</sup>

Optus considers that there is sufficient information to estimate the effective tax rate and that this rate should be adopted by the ACCC. Optus considers the effective tax rate applicable to Telstra would be 20%.<sup>906</sup>

### **ACCC view**

The effective tax rate can fall below the statutory tax rate if firms can defer the payment of tax. Firms have commonly been able to do this through the use of accelerated depreciation. Primarily for this reason, in Australia the average effective tax rate of large corporations is estimated to be around 20 per cent even though the statutory tax rate is 30 per cent.<sup>907</sup>

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<sup>901</sup> Ovum, *TEA model (v1.0) economic Review*, August 2008, p.34.

<sup>902</sup> ACCC, *Unconditional Local Loop Service Access Dispute Between Telstra Corporation Limited (access provider) and PowerTel Ltd (access seeker), Statement of Reasons for Final Determination*, March 2008.

<sup>903</sup> Ovum, *Telstra Efficient Access cost model – economic issues*, 5 February 2009, p. 18.

<sup>904</sup> Ovum, *Telstra Efficient Access cost model – economic issues*, 5 February 2009, p. 19.

<sup>905</sup> Ovum, *Telstra Efficient Access cost model – economic issues*, 5 February 2009, p. 19.

<sup>906</sup> Optus, *Analysys Cost model for Australian Fixed Network Services*, March 2009, p. 20.

<sup>907</sup> House of Representatives, *Budget Paper No. 1, Budget Strategy and Outlook 2006-07, Statement 5: Revenue*, Box 5.2, viewed 16 September, [http://www.aph.gov.au/budget%20dummy/budget%202006-07%20mirror/2006-07/bp1/html/bp1\\_bst5-03.htm](http://www.aph.gov.au/budget%20dummy/budget%202006-07%20mirror/2006-07/bp1/html/bp1_bst5-03.htm)

The ACCC remains of the view expressed in its Draft Decision that the effective tax rate is the appropriate tax rate for determining the pre-tax WACC as the use of a higher tax rate will over compensate firms for the present value of their expected future tax liabilities.<sup>908</sup>

The ACCC also disagrees with Telstra's argument that a tilted annuity is inconsistent with an effective tax rate below the statutory tax rate.

Further, the ACCC reiterates its view expressed in its Draft Decision<sup>909</sup> that a hypothetical efficient operator under the TSLRIC+ framework could effectively take advantage of a form of accelerated depreciation through the use of the diminishing value depreciation method allowed by the Australian Tax Office. This is a view confirmed by Ovum, in its Economic Advisory Note for the ACCC.<sup>910</sup> The net result is that the correct effective tax rate under the TSLRIC+ framework for estimating the pre-tax cost of capital should be less than the statutory tax rate. Therefore, the use of the statutory tax rate would overestimate Telstra's pre-tax cost of capital. The ACCC notes that it has not attempted to determine Telstra's effective tax rate. Instead, the ACCC has, in this case, relied on Ovum's determination of an effective tax rate and used this value in determining whether Telstra's WACC is reasonable. The ACCC also notes that even at the top end of Ovum's range, Telstra's proposed WACC is unreasonable as an input into the TEA model.

### **Imputation Credit Factor**

As noted in its Draft Decision, the ACCC considers that imputation credit factor is the market value to the firm's shareholders of the franking credits the firms generates.<sup>911</sup> The market valuation of each dollar of franking credit can diverge from its face value (i.e. from 1) because in some circumstances a franking credit may not be of value to the investor. For example, where an investor is based overseas and does not pay any Australian tax, they may place no value on the franking credits they receive if they cannot be used to offset other Australian tax liabilities, or sold or transferred to other parties, or used to obtain a refund from the Australian Tax Office.

In the past the ACCC and other Australian regulators have calculated the value of imputation credit factor as a product of the utilisation rate (market value of the franking credits paid out) multiplied by the payout ratio (the proportion of franking credits paid out to investors). The utilisation rate has typically been estimated from dividend drop off studies<sup>912</sup> and the payout ratio can be estimated from annual reports.

### **Submissions**

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<sup>908</sup> ACCC, *2008 ACCC Draft Decision*, November 2008, p. 108.

<sup>909</sup> ACCC, *2008 ACCC Draft Decision*, November 2008, p. 108.

<sup>910</sup> Ovum, *TEA model (v1.2) economic Review*, 5 February 2009, p. 18.

<sup>911</sup> ACCC, *2008 ACCC draft decision*, November 2008, p. 108.

<sup>912</sup> Dividend drop off studies observe the change in the level of stocks' prices over the period the stocks' go ex-dividend relative to the dividend. From this information they attempt to estimate the market value of the cash component of dividends and the market value of imputation credits attached to dividends.

## *Telstra*

Telstra submits that the imputation factor is irrelevant because the relevant marginal investor, or capital provider in Australia, is likely to be an international investor who is unable to use imputation credits. Accordingly, Telstra submits the imputation factor should be zero.<sup>913</sup>

In response to the Draft Decision, Telstra reiterates its views in regards to the marginal investor and also submits that overseas investors are also more likely to have a higher elasticity of demand for Australian equities. Telstra consider that this mean that marginal investors determine the share price at which the relevant market clears and that domestic consumers would have been willing to pay more for those shares reflecting the value of imputation credits.<sup>914</sup>

Telstra submits that the ACCC used a combination of empirical estimates of the utilisation rate and combined these with estimates from Officer and Hathaway.<sup>915</sup> Telstra notes that the actual gamma estimate reported by Officer and Hathaway is 0.355. Telstra consider that as the ACCC's previous estimates of gamma were influenced by Hathaway and that the ACCC should adopt the latest updated gamma from Officer and Hathaway.<sup>916, 917</sup>

Telstra also notes in its response to the Draft Decision that a NERA consulting report estimates the values of distributed imputation credits (i.e. utilisation rate) ranging between 0.2 and 0.4 based on analysis from SFG. Telstra also notes that this estimate multiplied by a distribution rate of 71 per cent implies a gamma value of between 0.14 and 0.28.<sup>918</sup>

Telstra also submits that the NERA report includes alternative ways of applying the Officer and Hathaway and SFG estimates. Telstra implies from these studies that it is reasonable for the ACCC to ignore personal tax implications and essentially set gamma to zero.<sup>919</sup>

In response to Ovum's report,<sup>920</sup> Telstra submit that Ovum argues that gamma should be above zero and that a value of 0.5 is reasonable. Telstra does not consider that Ovum undertook a rigorous assessment of the issues and it does not support the continued use of 0.5.<sup>921</sup>

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<sup>913</sup> Telstra, *WACC submission*, 4 April 2008, pp. 32-34

<sup>914</sup> Telstra, *Response to ACCC Draft Decision*, 23 December 2008, p. 103.

<sup>915</sup> Officer, R, and Hathaway, N, *The value of imputation tax credits, Update 2004*, November 2004.

<sup>916</sup> Telstra, *Response to ACCC Draft Decision*, 23 December 2008, p. 104.

<sup>917</sup> R. Officer, and N. Hathaway, *The value of imputation tax credits, Update 2004*, November 2004.

<sup>918</sup> Telstra, *Response to ACCC Draft Decision*, 23 December 2008, p. 104.

<sup>919</sup> Telstra, *Response to ACCC Draft Decision*, 23 December 2008, p. 104.

<sup>920</sup> Ovum, *TEA model (v1.0) economic Review*, August 2008.

<sup>921</sup> Telstra, *Response to Ovum*, 5 December 2008, pp. 41-42.

Bowman notes that until the 2008 Undertaking application, Telstra has accepted the ACCC's use of 0.5 as the value of gamma. Bowman submits that until there was a clear weight of evidence to support a change, it was reasonable to maintain the use of that value.<sup>922</sup>

Bowman submits that Telstra have now adopted a gamma of zero on the basis that there is sufficient weight of evidence.<sup>923</sup> The ACCC notes that Bowman does not detail or state what the weight of evidence is.

Bowman repeats Telstra's previous arguments in relation to the appropriateness of gamma being set at zero on the basis of the marginal investor. Bowman also notes that Ovum cite a study done for the ACCC by wik-Consult that recommends imputation credits should be zero.<sup>924, 925</sup>

Bowman submits that the studies presented by the ACCC are either not superior to other studies, in the case of Beggs and Skeels,<sup>926</sup> and that the Handley and Mahaswaran<sup>927</sup> study is irrelevant as it does not address the pricing of imputation credits or the identity of the marginal investor.<sup>928</sup>

Bowman considers that the relevant value of imputation credits have been miscalculated for the purposes of estimating the WACC and concludes that Telstra's estimate of zero is reasonable.<sup>929</sup>

#### *Other parties*

Ovum notes that the ACCC has previously concluded that an imputation factor of 0.5 is appropriate.<sup>930</sup> Telstra's half-yearly results indicate a percentage of the company's profits are paid through franked dividends. Ovum submits that this indicates the imputation factor should therefore be set above zero. Based on this and previous

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<sup>922</sup> R.G. Bowman, *Comments on Reports of Optus and Ovum and the ACCC Draft Decision*, 17 March 2009, p. 21.

<sup>923</sup> R.G. Bowman, *Comments on Reports of Optus and Ovum and the ACCC Draft Decision*, 17 March 2009, pp. 21-22.

<sup>924</sup> R.G. Bowman, *Comments on Reports of Optus and Ovum and the ACCC Draft Decision*, 17 March 2009, p. 23.

<sup>925</sup> wik-Consult, *Mobile Termination Cost Model for Australia, Report for the Australian Competition and Consumer Commission*, January 2007.

<sup>926</sup> D. Beggs and C. Skeels, *The Market Arbitrage of Cash Dividends and Franking Credits*, *The Economic Record*, 82(258), September 2006.

<sup>927</sup> J. Handley and K. Maheswaran, *A measure of the efficiency of the Australian imputation tax system*, *The Economic Record*, 84(264), March 2008, p 90.

<sup>928</sup> R.G. Bowman, *Comments on Reports of Optus and Ovum and the ACCC Draft Decision*, 17 March 2009, pp. 23-24.

<sup>929</sup> R.G. Bowman, *Comments on Reports of Optus and Ovum and the ACCC Draft Decision*, 17 March 2009, p. 24.

<sup>930</sup> Ovum, *TEA model (v1.0) Economic review*, 6 August 2008, p. 40.

regulatory practice, Ovum submits that the ACCC should continue to use an imputation factor of 0.5.<sup>931</sup>

In response to Telstra's submission, Ovum submits that should Telstra consider a gamma of zero as appropriate, then an international CAPM should be used to determine the WACC. Accordingly the MRP, risk free rate and beta values should be calculated on an international basis and that this is not the approach taken by Telstra.<sup>932</sup>

Ovum concludes, that in light of studies by Hathaway and Officer, Beggs and Skeels, and Handley and Maheswaran that the estimated imputation factor is between 0.5 and 0.81 and a payout ratio of 0.71 from Hathaway and Office, then the implied gamma is between 0.36 and 0.58. Ovum considers that an estimate of 0.5 for gamma remains appropriate.<sup>933</sup>

### *ACCC view*

As noted by the ACCC in its Draft Decision<sup>934</sup>, a recent Australian dividend drop-off study conducted by Beggs and Skeels<sup>935</sup> implied a utilisation rate of at least 0.572 for the period 2001-2004. Additionally, a more recent study by Handley and Maheswaran using tax office statistics put the value at approximately 0.81.<sup>936</sup> The results from these studies combined with a payout ratio of 0.71 from the 2004 Hathaway and Officer<sup>937</sup> study achieves an imputation credit factor well above zero. In addition, the imputation credit factor could be even higher once the valuation of imputation credits not immediately distributed is accounted for in the estimates of the payout ratio. The ACCC considers that the use of an imputation credit factor of zero by Telstra in this context will not lead to a fair estimate of their pre-tax WACC.<sup>938</sup>

Contrary to Telstra's views, the ACCC does not consider it appropriate to give significant weight to the Officer and Hathaway study for the purposes of calculating the utilisation rate and the overall imputation credit factor. The ACCC notes that the AER Review has given no weight to the Officer and Hathaway study because it used pre-2000 data and it does not account for the changes to imputation credits in 2000. These changes resulted in investors being able to claim refunds from the Australian

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<sup>931</sup> Ovum, *TEA model (v1.0) Economic review*, 6 August 2008, p. 40.

<sup>932</sup> Ovum, *TEA model (v1.2) economic review*, 5 February 2009, pp. 24-25.

<sup>933</sup> Ovum, *TEA model (v1.2) economic review*, 5 February 2009, p. 26.

<sup>934</sup> ACCC, *2008 ACCC Draft Decision*, November 2008, p. 109.

<sup>935</sup> David Beggs and Christopher Skeels. 'The Market Arbitrage of Cash Dividends and Franking Credits', *The Economic Record*, vol 82 no 258, September 2006.

<sup>936</sup> Handley J and Maheswaran K, *A measure of the efficiency of the Australian imputation tax system*, *The Economic Record*, vol 84, no 264, March 2008, p 90.

<sup>937</sup> R. Officer, and N. Hathaway, *The value of imputation tax credits, Update 2004*, November 2004.

<sup>938</sup> This is calculated using the 0.71 payout ratio calculated by Hathaway, N. and R. R. Officer, 2004, 'The Value of Imputation Tax Credits', Update 2004, Capital Research Pty Ltd and by using the utilisation rate from Beggs and Skeels (2006) with the raw utilisation rate and also the grossed up utilisation rate based on the differential tax treatment of dividends and capital gains (\$1 of dividends are valued at 81c).

Tax Office for unused tax credits. Prior to this change, investors that did not have income to offset tax credits could not obtain a cash refund for unused imputation credits.

It should be noted that the ACCC has considered all the information before it, not just the Beggs and Skeel<sup>939</sup> study. However, the ACCC did heavily rely on the results of this study given it is the most recent published academic Australian dividend drop-off study and there is no compelling evidence indicating the study should not be relied upon. In particular, the ACCC placed significant weight on the theta estimate of 0.57 from the study for the period 2001-04. The ACCC also notes that Telstra has been given the opportunity to explain why the study is not reliable and has not done so.

In relation to the study by Handley and Mahaswaran,<sup>940</sup> the ACCC remains of the view that the percentage of imputation credits claimed by shareholders is relevant to the determination of the utilisation rate and therefore gamma, because the reduction in personal taxes is the ultimate source of value from credits. The ACCC also does not consider the fact the study does not refer to the marginal investor is a valid reason to exclude the study.

The ACCC notes that these two studies taken together combined with the rational assumption that Australian domestic shareholders will demand tax credits be distributed implies a fair value for gamma could be well above 0.50.

The ACCC also notes that Australian companies have increasingly used off market share buybacks to stream franking credits to investors who place the most value on them.<sup>941</sup> Such practice strongly suggests that franking credits will have value to shareholders that should be reflected in share prices. Additionally, the ability to stream franking credits to those shareholders who value them means that a greater proportion of these credits can be utilised, with fewer credits distributed to foreigners. This supports an imputation credit factor above zero. In response to Bowman on this point,<sup>942</sup> the ACCC did not indicate streaming was unfettered or that it is of the opinion that gamma is equal to one. However, the ACCC remains of the view that the ability to stream imputation credits will be relevant to the market value of imputation credits and this supports the view that imputation credits will have value to investors that should be recognised in the share price. The ACCC also notes that Telstra distributed over \$1 billion in franked dividends via off share market buybacks in 2003 and 2004.<sup>943</sup>

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<sup>939</sup> D. Beggs and C. Skeels, *The Market Arbitrage of Cash Dividends and Franking Credits*, *The Economic Record*, 82(258), September 2006.

<sup>940</sup> J. Handley and K. Maheswaran, *A measure of the efficiency of the Australian imputation tax system*, *The Economic Record*, vol 84, no 264, March 2008.

<sup>941</sup> Board of Taxation, *Review of the taxation treatment of off-market share buybacks*, pp.7-8. The ACCC notes that the final report from the Board of Taxation has not yet been publicly released.

<sup>942</sup> R.G Bowman, *Comments on Reports of Response to Optus, Ovum and ACCC Draft Decision*, 17 March 2009, p. 23.

<sup>943</sup> Bloomberg Data Service.

The assumption under the CAPM is that all investors (in aggregate) determine the value of assets and imputation credits in the market. As such, no one investor or investor group is the marginal investor and the equilibrium value of imputation credits is determined via a weighted average of all investors in the relevant market. Given that domestic investors own a significant proportion of domestic equities, this supports the ACCC's view that the imputation credit factor is significantly above zero. It should be noted in the context of Telstra, that the current level of foreign ownership in Telstra is 18.5 per cent and accordingly implies a market wide estimate of the value of gamma might be conservative.<sup>944</sup>

Overall, given the current academic studies that show franking credits do have market value and the theoretical ability of firms to stream franking credits and realise value from them, the ACCC reiterates its view from its Draft Decision that it does not consider Telstra's proposed imputation credit factor value of zero is appropriate or that Telstra have provided sufficient evidence to support their view. The ACCC also rejects as appropriate Telstra's secondary argument for an imputation franking credit of 0.355 based on the Hathaway and Officer study.<sup>945</sup> The ACCC considers the use of an imputation credit factor value of either zero or 0.355 to calculate Telstra's pre-tax WACC will lead to a pre-tax WACC estimate that is excessive. The ACCC also considers that cascading claims on parameters is not appropriate.

The ACCC notes that in determining whether Telstra's vanilla and pre-tax WACC is appropriate it has used an imputation credit factor estimate of 0.5. The ACCC considers that this may be conservative, based on its analysis and the AER's WACC Review which estimates the imputation credit factor to be closer to 0.65.<sup>946,947</sup>

## **Debt Beta**

The debt beta measures the systematic risk of debt. It represents the amount of market risk that holders of debt securities bear or are assumed to bear.

### ***Submissions***

#### ***Telstra***

Telstra submits that a debt beta of 0.0 is appropriate.<sup>948</sup>

In response to the ACCC Draft Decision, Telstra submits that the ACCC has accepted Telstra's best estimates in relation to the debt beta.<sup>949</sup>

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<sup>944</sup> <http://www.telstra.com.au/abouttelstra/investor/faqs.cfm?categoryID=61> (Accessed 17 April 2009)

<sup>945</sup> R. Officer, and N. Hathaway, *The value of imputation tax credits, Update 2004*, November 2004.

<sup>946</sup> AER, *December 2008 WACC Review explanatory statement*, 2008, p. 340.

<sup>947</sup> The AER considers that the imputation credit factor could be higher than the 0.71 from the Officer and Hathaway study once the value of imputation credits not immediately distributed is accounted for in the estimates of payout ratios.

<sup>948</sup> Telstra, *WACC submission*, 4 April 2008, p. 45.

<sup>949</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 95.

### *Other parties*

Ovum supports the use of a debt beta of 0.0.<sup>950</sup>

### **ACCC view**

Consistent with previous regulatory decisions<sup>951</sup>, the ACCC re-affirms its view expressed in its Draft Decision<sup>952</sup> that Telstra's submitted debt beta of zero is generally appropriate if used for both de-levering and re-levering equity betas.

### **Equity Issuance Costs**

Equity issuance costs (EIC) are the fees associated with raising capital in the market for an equity investment. Equity-raising typically involves a one-off cash flow, raised from the proceeds of the equity offer.

### **Submissions**

#### *Telstra*

Telstra considers that equity issuance costs will be incurred by a company to raise equity capital. As the WACC estimate for the CAN is done as if the CAN was a stand alone business, Telstra considers an allowance should be provided that permits it to recover the costs it would be expected to incur in raising equity as if it was a separate entity.<sup>953</sup>

Telstra requests an annual allowance of 0.4 per cent for EIC. This is based on the estimates of the costs from a journal article<sup>954</sup> that estimates initial public offering costs at 5.72 per cent and seasoned equity offering costs at 3.25 per cent. Annualised over 35 years, Telstra states this gives an estimate for equity raising costs of between 27 and 47 basis points per year. Accordingly, Telstra recommends 40 basis points per year. Whilst recognising that this is slightly above the mid point, Telstra considers that this reflects the increased complexity of contemporary equity raising relative to the costs when the empirical estimates were made.<sup>955</sup>

### *Other parties*

Ovum notes the ACCC has previously indicated it is appropriate that EIC is recovered, but not through the WACC.<sup>956</sup> Ovum also notes that in a recent

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<sup>950</sup> Ovum, *TEA model (v1.0) economic review*, 6 August 2008, p. 38.

<sup>951</sup> For example, ACCC, *Assessment of Telstra's ULLS monthly charge Undertaking – Final decision*, August 2006, p. 122.

<sup>952</sup> ACCC, *2008 ACCC Draft Decision*, November 2008, p. 110.

<sup>953</sup> Telstra, *WACC submission*, 4 April 2008, p. 45.

<sup>954</sup> I. Lee, S. Lochhead, J. Ritter and Q. Zhao, *The Costs of Raising Capital*, Journal of Financial Research, Spring 1996, p. 59-74.

<sup>955</sup> Telstra, *WACC submission*, 4 April 2008.

<sup>956</sup> Ovum, *TEA model (v1.0) economic review*, 6 August 2008, p. 41.

arbitration,<sup>957</sup> the ACCC did not include EIC in the WACC,<sup>958</sup> and concluded that EIC should be set to zero.<sup>959</sup>

Ovum notes that if equity issuance costs are allowed to be recovered in the WACC, a point estimate of 0.26 per cent would be acceptable.<sup>960</sup>

### **ACCC view**

As stated in its Draft Decision,<sup>961</sup> the ACCC accepts that EIC may be incurred by an entity when it raises equity capital. As such, when an entity incurs equity raising costs it may be appropriate for the entity to be able to recover these costs. However, the ACCC considers that equity raising costs should be recovered as a cash flow (operating cost) allowance and not in the WACC.

The ACCC notes that no further submissions were received on this issue, and the ACCC reaffirms its view that it is not equitable to compensate Telstra for costs it did not incur. Therefore, the ACCC remains of the view expressed in its Draft Decision<sup>962</sup> that it does not consider Telstra's argument for an allowance for equity raising costs in the WACC will lead to a fair estimate of Telstra's vanilla and pre-tax WACCs.

### **B.7.2 Reasonableness of Telstra's WACC point estimate**

Telstra has made two additional arguments about why their WACC estimate is reasonable even if significantly above the ACCC's estimate. These are:

- (1) a range of reasonable WACC estimates exist due to estimation error and/or framework error, and that this range is quite large; and
- (2) there is an asymmetry in social consequences from errors in setting the WACC. These arguments are discussed in turn below.

### **Reasonable range of WACC values**

Telstra submits that there are a range of reasonable WACC values. Telstra argues that this is due to two types of errors that exist when the WACC is estimated: estimation error due to uncertainty with respect to the estimation of different WACC parameters and other parameters associated with the CAPM; and framework error because of the uncertainty about whether the CAPM is a suitable framework for estimating the cost of equity as an input into the WACC. Telstra considers that as there is a reasonable range of values for many input parameters to the CAPM, there will be a range of

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<sup>957</sup> ACCC, *Unconditional Local Loop Service Access Dispute Between Telstra Corporation Limited (access provider) and PowerTel Ltd (access seeker)*, *Statement of Reasons for Final Determination*, March 2008.

<sup>958</sup> Ovum, *TEA model (v1.0) economic review*, 6 August 2008, p. 41.

<sup>959</sup> Ovum, *TEA model (v1.0) economic review*, 6 August 2008, p. 42.

<sup>960</sup> Ovum, *TEA model (v1.0) economic review*, 6 August 2008, p. 38.

<sup>961</sup> ACCC, *2008 ACCC Draft Decision*, November 2008, p. 111.

<sup>962</sup> ACCC, *2008 ACCC Draft Decision*, November 2008, p. 111.

estimates of the CAPM and the WACC. Telstra considers all estimates within this range are reasonable.<sup>963</sup>

Telstra submits that a number of studies have found that the CAPM does not accurately predict the fair cost of equity capital and that a number of adjustments to the CAPM could account for this. These include:

- the use of multi factor pricing models such as the Arbitrage Pricing Theory;
- adjustments for non-systematic risk that is not accounted for under the CAPM framework;
- adjustments for asymmetric regulatory risk due to access seekers using the asset only in good states of the world; and
- corrections for lost real options.<sup>964</sup>

Given this, Telstra argues that while it is difficult to quantify the amount to adjust the CAPM for framework error, many of the factors show that the CAPM systematically underestimates the required return on equity. Therefore, Telstra submits that the high end of the range of reasonable WACC values is greater than the CAPM estimates and that the ACCC should take these factors into account when determining if Telstra's proposed WACC is reasonable.<sup>965</sup>

#### *ACCC view*

As stated in its Draft Decision, the ACCC considers that generally there is a best point estimate for each given WACC input parameter. In addition, as there are a number of WACC input parameters, differences in estimates for individual parameters may, to a degree, cancel out such differences so that the overall WACC estimates of different parties' should be relatively close. Overall, even if there is some room for disagreement on the overall WACC, as stated in its Draft Decision the ACCC considers that this should be relatively small in magnitude in a competitive capital market because the bidding process for projects should not provide an incentive to over or under-estimate the cost of capital.<sup>966</sup>

As noted in its Draft Decision,<sup>967</sup> in terms of Telstra's proposed 'range of reasonable WACC values', the ACCC considers that Telstra's proposed WACC value is so far above from what, having regard to all submissions, is appropriate that it could not be within a reasonable range (if one exists). In particular, the ACCC notes Ovum's view that Telstra's proposed pre tax WACC of 16.46 per cent is very high.<sup>968</sup> This compares

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<sup>963</sup> Telstra, *WACC submission*, 4 April 2008, pp. 2-3.

<sup>964</sup> Telstra, *WACC submission*, 4 April 2008, p. 3.

<sup>965</sup> Telstra, *WACC submission*, 4 April 2008, p. 4.

<sup>966</sup> ACCC, *2008 ACCC Draft Decision*, November 2008, pp. 111-112.

<sup>967</sup> ACCC, *2008 ACCC Draft Decision*, November 2008, p. 112.

<sup>968</sup> Ovum, *TEA model (v1.0) economic review*, 6 August 2008, p. 51.

to Ovum's estimate of an average awarded ULLS WACC of 11.83 per cent for a number of European countries.<sup>969</sup> As noted above, the ACCC considers that any reasonable range (if it exists) would be extremely narrow in a competitive capital market.

In response to Bowman's statement that he has never encountered a range as small as 0.1 per cent, let alone 0.01 per cent,<sup>970</sup> the ACCC did not indicate it thought a range (if it existed) would be 0.01 per cent or that there will not be estimation error when estimating input parameters. However, the ACCC is of the view that firms in a competitive market must use their best unbiased estimate of their WACC when evaluating projects or they will not win the bidding for projects. Further, the ACCC is of the view that market participants will generally use commonly accepted methods to estimate their cost of capital or the cost of capital of a given firm. For this reason, the ACCC remains of the view that estimates would *normally* be expected to be relatively close together.

Overall, the ACCC is not of the view Telstra has estimated an unbiased estimate of its cost of capital. Telstra appears to have systematically estimated extreme values for its WACC input parameters in order to request the highest return possible. For example Telstra has submitted an equity beta of over 1 (the market average) for a regulated bottleneck asset with clear market power and lower proposed leverage than the market as a whole based on a range of highly dubious arguments. The ACCC has used a conservative estimate of Telstra's equity beta to assess Telstra's WACC and even this very conservative equity beta estimate was nearly 20 per cent less than Telstra's proposed value.

In response to Bowman's comment that the ACCC has not made a genuine attempt to evaluate Telstra's estimates, this is incorrect. It should be noted that the ACCC:

- has not ignored benchmarking;
- understands the difference between arithmetic and geometric averaging;
- has used what it considers is appropriate arithmetic mean MRP estimate for evaluating Telstra's WACC;
- has used a conservative benchmark estimate of the equity beta in its final evaluation;
- has clarified its position on first principles estimation; and
- has considered all the evidence on imputation credits including the arguments about marginal foreign investors.

In relation to the ACCC's use of a 40/60 debt to equity ratio, the ACCC notes that it is not material to their rejection of Telstra's proposed WACC. The ACCC also

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<sup>969</sup> Ovum, *TEA model (v1.0) economic review*, August 2008, pp. 23 & 25.

<sup>970</sup> R.G Bowman, *Comments on reports of Optus, Ovum and the ACCC Draft Decision*, 17 March 2009, p. 25.

remains of the view that it is an appropriate estimation of the efficient debt to equity ration for the CAN assets.

As stated in its Draft Decision,<sup>971</sup> the ACCC also rejects the need to compensate Telstra for any claimed lost real options. The ACCC consider that this is a claim for compensation over a fair WACC. In addition, the ACCC does not consider that Telstra has explained why an adjustment is fair or tried to quantify it.

Finally, Telstra suggests that other models exist that might account for risks Telstra claim the CAPM does not accommodate for (e.g. the Fama and French three factor model). However, Telstra has proposed the CAPM in support of their 2008 Undertaking. The ACCC reiterates its view expressed in its Draft Decision<sup>972</sup> that Telstra could have proposed a different model or shown that different models indicated a higher required return on Telstra stock but it has not chosen to do so. The ACCC's view on this is unchanged from its Draft Decision<sup>973</sup> in that its view is any adjustment to the domestic CAPM or any asset pricing model needs to be theoretically justified and not inconsistent with the pricing model proposed and supported by market practice and quantified. In response to Bowman's comments<sup>974</sup> on framework error, it should be noted that the ACCC is not stating that no framework errors exist, simply that adjustments for alleged errors must be shown to be theoretically sound in the context used, empirically justified and supported by market practice. However, Telstra has not provided the ACCC with sufficient reasoning for its adjustment in the CAPM in support of its 2008 Undertaking.

### **Asymmetry in social consequences**

Asymmetry in social consequences might occur for a regulatory decision when an error by the regulator in one direction produces an inefficient economic outcome (due to the error) that is different in economic magnitude to the economic outcome if the error is in the different direction.

### ***Submissions***

#### *Telstra*

Telstra submits that there is an asymmetry in social consequences from over or under estimating the WACC.<sup>975</sup>

Telstra contends that underestimating the true WACC will result in long term costs to society that are greater than the costs resulting from setting the WACC (and access prices) too high. Telstra considers that setting the WACC too high will impose a cost on consumers but that this is unlikely to have a detectable welfare effect on individual

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<sup>971</sup> ACCC, *2008 ACCC Draft Decision*, November 2008, p. 117.

<sup>972</sup> ACCC, *2008 ACCC Draft Decision*, November 2008, p. 113.

<sup>973</sup> ACCC, *2008 ACCC Draft Decision*, November 2008, p. 113.

<sup>974</sup> R.G Bowman, *Comments on reports of Optus, Ovum and the ACCC Draft Decision*, 17 March 2009, p. 27.

<sup>975</sup> Telstra, *Weighted Average Cost of Capital*, 4 April 2008, p. 5.

consumers. This will also give a service provider an incentive to invest in maintenance, innovation and improvement of the service. However, Telstra contends that setting the WACC too low, even by a small amount, can result in serious long-term economic consequences, including threatening the viability of the provision of the service. Therefore, Telstra submits the consequences of WACC estimation error are asymmetric and an uplift should be made to the WACC to reduce the risk of underestimating the true WACC of the regulated business.<sup>976</sup>

Telstra suggests that the ACCC must assess the degree to which it considers the risk of asymmetry of social consequences and make an uplift to the point estimate of the WACC in light of this assessment. Telstra contends that the greater the social consequences of underestimating the WACC relative to overestimating it, the greater the uplift should be. Telstra states that setting the allowed WACC one standard deviation above the point estimate will mean there is an 83 per cent chance that the allowed WACC will not lead to adverse social consequences. However, Telstra submits that the ACCC may wish to give a greater uplift to their WACC than one standard deviation.<sup>977</sup>

In response to access seekers, Telstra submits that the rationale for Telstra's point estimate for the WACC being above the mid-point was not due to a mark-up applied to off-set asymmetric consequences of mis-estimating the WACC. Rather, Telstra submits that the parameters have a central tendency above the mid-point of their individual recommended range.<sup>978</sup>

Telstra also reject Optus' argument that a large proportion of the network is sunk and that mis-estimating the WACC will not affect investment decisions, for that sunk asset. Telstra submits that this argument ignores the annual augmentation to the network to maintain effective operability of the CAN to which access seekers are interconnected. Telstra concludes that a downwards mis-estimation of the WACC would jeopardise network capability and be contrary to the LTIE.<sup>979</sup>

#### *Other parties*

Optus stated that the ACCC's 2008 ULLS pricing principles<sup>980</sup> do not make an allowance for asymmetric social consequences of underestimating the WACC. It contends that the WACC should be set no higher than the mid point of the range. Further, due to the sunk nature of the CAN network Optus argues that the investment decision is irreversible and the WACC will not affect the investment decision. In addition, it contends that small errors in the estimate of the WACC will not stop investors from providing funds.<sup>981</sup>

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<sup>976</sup> Telstra, *Weighted Average Cost of Capital*, 4 April 2008, pp. 5-6.

<sup>977</sup> Bowman, *Report on the appropriate WACC for services provided on the CAN*, May 2007, pp. 67-68.

<sup>978</sup> Telstra, *Response to Access Seekers*, 18 November 2008, p. 71.

<sup>979</sup> Telstra, *Response to Access Seekers*, 18 November 2008, p. 71.

<sup>980</sup> ACCC, *Unconditioned Local Loop Service Pricing Principles and Indicative Prices*, June 2008.

<sup>981</sup> Optus, *Response to the ACCC's discussion paper*, August 2008, p. 57.

### *ACCC view*

As stated in its Draft Decision,<sup>982</sup> the ACCC is not convinced there is an asymmetry in social consequences of over or under estimating the WACC. The ACCC does not agree that there is unlikely to be a detectable effect on individual consumers from setting the WACC too high or that this is in their long term interests. In addition, given the sunk nature of the investment in the CAN, the ACCC believes Telstra should have a strong incentive to continue investing in maintenance at least sufficient to provide the current ULLS service. This might imply that, in fact, any social consequences would be greater from overestimating the WACC than from underestimating it.

Further, under the ACCC's current application of TSLRIC+, the return on existing network (ULLS price) is intended to promote efficient build /buy decisions.<sup>983</sup> The ACCC believes that setting too high a return on an existing network may deter efficient decision-making under the TSLRIC+ approach.<sup>984</sup>

Overall, the ACCC is not satisfied that there will be asymmetric social consequences from setting too low a WACC versus setting too high a WACC. Bowman and Telstra have not provided sufficient evidence to satisfy the ACCC that any adjustment to the WACC is appropriate.

In assessing the 2008 Undertaking the ACCC has used a nominal vanilla WACC of 8.83 per cent, which equates to a implied nominal pre-tax WACC of 9.64 per cent.

### **B.7.3 International WACC estimates**

Ovum, as part of their Economic Review, examined the treatment of the WACC in a range of countries worldwide. In undertaking this comparison Ovum compared the pre-tax nominal WACC in selected countries and of individual parameters to those submitted by Telstra.<sup>985</sup>

Ovum notes in their Economic Review that Telstra's WACC of 16.46 per cent is the highest among the countries examined and significantly higher than the next highest country, Portugal, who has a WACC of 10.38 per cent. When applying a WACC of 10.38 per cent, *ceteris paribus*, the ULLS cost falls to \$36.02,<sup>986</sup> 73 per cent of the TEA models original value.<sup>987</sup> This demonstrates the effect a disproportionately high WACC can have on ULLS costs and that Telstra's WACC may be misleading as the benchmarked countries were chosen because of their resemblance with Australian conditions.

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<sup>982</sup> ACCC, *2008 ACCC Draft Decision*, November 2008, p. 114.

<sup>983</sup> ACCC, *2008 ACCC Draft Decision*, November 2008, p. 34.

<sup>984</sup> ACCC, *2008 ACCC Draft Decision*, November 2008, p. 51.

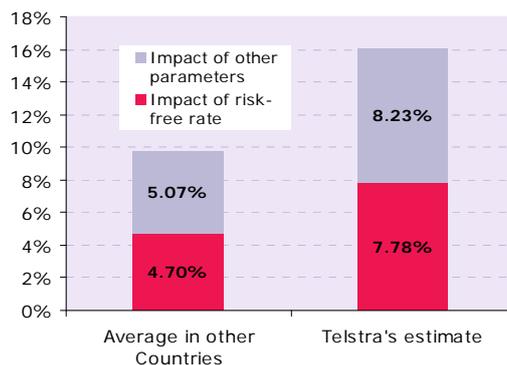
<sup>985</sup> Ovum, *Economic Review*, August 2008, p. 23.

<sup>986</sup> This is based on version 1.1 of the TEA model.

<sup>987</sup> Ovum, *TEA Model (v.1.0) economic review*, August 2008, p. 23.

Ovum acknowledges in its report that the WACC of the comparative countries included country specific elements such as inflation, interest rate risk and different MRPs. To neutralise the effect of country specific elements on the WACC, Ovum removed issuance costs (because it is not included in all WACC calculations and is country specific) from the WACC, and isolated the effects of risk-free rates in an comparison between Finland, Ireland, Spain, Sweden, UK, Denmark, France and Luxembourg. This brought the average WACC for these countries to 9.76 per cent, which is substantially lower than Telstra’s equivalent of 16.01 per cent.

**Figure B.7.1: Comparison of the impact of WACC parameters**



**Source:** Ovum, *TEA model (v.1.0) economic review*, 6 August 2008

Ovum also noted the difference between each individual parameter inputs provided by Telstra and the range in selected countries.

**Table B.7.2: Fixed Networks pre-tax Nominal WACC Parameters in selected countries**

WACC parameters	Range in selected countries	Telstra's estimates
Risk-Free Rate	3.40% - 4.75%	6.33%
Debt Risk Premium	0.50% - 1.55%	1.95%
Debt Issuance Cost	0%	0.15%
Cost of Debt	3.94% - 6.30%	8.43%
Market Risk Premium	3.75% - 6.7%	7%
Equity Risk Premium	3.75% - 6.70%	7.0%
Equity beta	0.560 - 1.380	1.028
Equity Issuance Cost	0%	0.40%
Cost of Equity	7.16% - 10.46%	13.93%
Debt Ratio	16.8% - 50.0%	30%
Tax	12.50% - 34.93%	30%
Imputation factor	0	0

**Sources:**

Ovum, *Telstra Efficient Access cost model – International WACC benchmark*, 28 January 2009  
 Telstra, *Telstra's Ordinary Access Undertaking for the Unconditioned Local Loop Service*, 23 December 2008  
 Ovum, *TEA model (v.1.0) economic review*, 6 August 2008

From the above, Ovum observes that the Telstra debt and equity risk premiums, and debt issuance costs are very high compared to other countries.

**Submissions**

*Telstra*

In response to Ovum's report, Telstra submit that despite recognising the issues with international comparisons Ovum makes no adjustments for country specific factors other than risk-free rate and issuance costs<sup>988</sup>. Telstra submit that Ovum's comparisons are simplistic and misleading.

Telstra submits that to meaningful comparisons adjustments should include, but are not limited to:

- neutralising the effect of international differences in corporate tax rates<sup>989</sup>

<sup>988</sup> Telstra, *Response to Ovum*, 5 December 2008, p. 28.

<sup>989</sup> Telstra, *Response to Ovum*, 5 December 2008, p. 28.

- standardising the risk-free rate which varies due to macro-economic and other country specific factors<sup>990</sup>
- standardising the MRP, which depends on market characteristics and varies across countries and <sup>991</sup>
- modifying the DRP to remove the effect of the internationalisation of the US sub-prime crisis. <sup>992</sup> This is because the WACC estimate is for assets valued as of 1 January 2008, before the unfolding of the event. The crisis should hence be irrelevant in the WACC estimates referenced by Ovum.

Telstra submits that following the adjustments outlined above being taken into account, Telstra's comparable WACC is just over 8 per cent and considers that its WACC estimate is reasonably close to international benchmarks<sup>993</sup>.

### *Ovum*

In response to Telstra's comments Ovum have provided an advisory note to the ACCC - International WACC Benchmark. In this advisory note, Ovum steps through each of Telstra's adjustments, but with what Ovum considers is correct data.<sup>994</sup>

Ovum has made five adjustments regarding:

- tax rates

Like Telstra, Ovum adjusted the vanilla WACC estimate to a post-tax WACC<sup>995</sup> of 11.52 per cent<sup>996</sup>. Ovum notes that to convert the comparator countries to a post-tax WACC they have used the tax rate considered in each regulatory decision, rather than the corporate tax rates sourced from the OECD, like Telstra used.

- issuance costs

Ovum notes that Telstra has adjusted the WACC estimates in order to exclude the impact of debt and equity issuance costs, as these have not been incurred in other countries benchmarked. Ovum notes that Telstra concludes that their WACC is

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<sup>990</sup> Telstra, *Response to Ovum*, 5 December 2008, p. 28.

<sup>991</sup> Telstra, *Response to Ovum*, 5 December 2008, p. 38.

<sup>992</sup> Telstra, *Response to Ovum*, 5 December 2008, p. 34.

<sup>993</sup> Telstra, *Response to Ovum*, 5 December 2008, p. 37.

<sup>994</sup> Ovum, *Telstra Efficient Access cost model – International WACC Benchmark*, 28 February 2009, p. 2.

<sup>995</sup> R.G Bowman, *Comments on Reports of Optus and Ovum and the ACCC Draft Decision*, 17 March 2009, p.2, paragraph 7-vanilla WACC is a form of post-tax WACC because the impact of interest expense is included in costs, rather than in the WACC formula.

<sup>996</sup> Ovum, *Telstra Efficient Access cost model – International WACC Benchmark*, 28 February 2009, p. 4.

reduced to 11.21 per cent when excluding issuance costs. Ovum notes that this is still substantially above comparator countries when only this input is changed<sup>997</sup>.

- risk-free rates

Ovum notes that Telstra submits that the government bond yields in Australia have been consistently higher than bond yields in most comparator countries. Telstra selected the year 2003 as the estimate they considered that Ovum used in its European Economics study authored in May 2004. Ovum notes however, that the European Economics study authored in May 2004 is not relevant to the benchmarking analysis as it considers a different data set to the one presented in for the risk-free rate. Ovum therefore has adjusted the risk-free rate of both Telstra and the comparator countries to use 2006 data as the benchmark year. Ovum notes that if Telstra were operating in Europe, their risk-free rate would be 3.8 per cent<sup>998</sup>. Accordingly, the WACC decreases to 8.93 per cent<sup>999</sup>.

- MRP

Ovum notes that the sample range for MRP in the benchmarked countries is between 3.75 and 6.70 per cent, with an average of 5.22 per cent. Ovum notes that if this average MRP is considered and applied to Telstra's WACC, it drops from 8.93 per cent to 7.64 per cent.<sup>1000</sup>

- DRP

Ovum notes Telstra's comments in relation to the DRP having potentially risen due to the US sub-prime mortgage market and the resulting credit crisis. However, Ovum notes that a forward-looking DRP may included the impact of the credit crunch when other recent regulatory decisions have not taken this into account.<sup>1001</sup>

Ovum also notes that unusual and temporary events should not be taken into account when calculating a forward looking value. Ovum notes that if Telstra's long term DRP has increased due to the recent financial crisis, then it should be adjusted downwards to make it comparable to the other benchmark countries.<sup>1002</sup> Ovum notes that this could be achieved if the DRP for Telstra was considered

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<sup>997</sup> Ovum, *Telstra Efficient Access cost model – International WACC Benchmark*, 28 February 2009, p. 9.

<sup>998</sup> Ovum, *Telstra Efficient Access cost model – International WACC Benchmark*, 28 February 2009, p. 6.

<sup>999</sup> Ovum, *Telstra Efficient Access cost model – International WACC Benchmark*, 28 February 2009, p. 6.

<sup>1000</sup> Ovum, *Telstra Efficient Access cost model – International WACC Benchmark*, 28 February 2009, p. 8.

<sup>1001</sup> Ovum, *Telstra Efficient Access cost model – International WACC Benchmark*, 28 February 2009, p. 8.

<sup>1002</sup> Ovum, *Telstra Efficient Access cost model – International WACC Benchmark*, 28 February 2009, p. 9.

equal to the average DRP for the other countries – thereby making it 1.03 per cent rather than 1.95 per cent.<sup>1003</sup> The adjusted WACC is therefore 7.45 per cent.<sup>1004</sup>

Ovum concludes by noting that by making these adjustments Telstra's WACC is still the highest among the comparators in Europe, but in this instance is reasonably close to international benchmarks.<sup>1005</sup> Ovum does caveat this result however, noting that this analysis has used international averages, meaning that the results will be driven closer to the international average WACC.<sup>1006</sup>

### ***ACCC view***

The ACCC notes the evidence both from Ovum and Telstra in relation to international comparisons. However, the ACCC does not consider the international comparisons of the WACC are material to the ACCC's view of whether the Telstra submitted WACC is reasonable or that it is in the LTIE.

## **B.7.4 Global Financial Crisis**

### **Submissions**

#### ***Telstra***

Bowman submits that the Global Financial Crisis (GFC) has had a significant impact on Australia in many dimensions, including for the determination of the costs of capital for all businesses. Parameters affected would be the risk free rate, DRP, issuance costs of debt and equity, gearing, MRP and system risk.<sup>1007</sup>

Bowman submits that because the WACC estimate for the CAN related assets is for assets valued as at 1 January 2008, before the GFC unfolded, that this crisis is irrelevant to the estimation of the WACC for the 2008 Undertaking.<sup>1008</sup>

### **ACCC view**

As the ACCC has noted previously, there has been a significant change in the economic conditions since Telstra lodge this Undertaking in March 2008. Where there is robust evidence to support a departure from previously supported parameters, the

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<sup>1003</sup> Ovum, *Telstra Efficient Access cost model – International WACC Benchmark*, 28 February 2009, p.9.

<sup>1004</sup> Ovum, *Telstra Efficient Access cost model – International WACC Benchmark*, 28 February 2009, p.9.

<sup>1005</sup> Ovum, *Telstra Efficient Access cost model – International WACC Benchmark*, 28 February 2009, p.10.

<sup>1006</sup> Ovum, *Telstra Efficient Access cost model – International WACC Benchmark*, 28 February 2009, p.10.

<sup>1007</sup> R.G Bowman, *Comments on reports of Optus and Ovum and the ACCC Draft Decision*, 17 March 2009, pp. 31-32.

<sup>1008</sup> R.G Bowman, *Comments on reports of Optus and Ovum and the ACCC Draft Decision*, 17 March 2009, pp. 31-32.

ACCC will consider this evidence. Accordingly, the ACCC has considered the 2008 Undertaking WACC parameters based on the current economic conditions, where there is evidence to support an adjustment to the input values.

## B.8 Depreciation

Depreciation, in a regulatory context, is the return of capital to the regulated firm. The return of capital can occur at any time over the life of the regulated asset. However, the return on capital and return of capital should be calculated consistently to ensure fair compensation over the life of the firm's assets.

In a forward-looking implementation of TSLRIC+, there are no incurred depreciation expenses as a separate explicit allowance because assets are valued at their replacement cost. However, in a regulatory context it is still necessary to spread the cost of an asset over a period of time, often over the economic life of the asset. Consequently, most TSLRIC models annualise the replacement cost of assets according to their expected economic life.

The ACCC notes that the TEA model uses straight line (accounting) depreciation.

The default asset values provided by Telstra are summarised in the table B.8.1 below.

**Table B.8.1 Summary of Telstra's default asset values**

Life	Capital asset
5 or less	Information Technology
	Software
	IEN Software
	Switching Software
6 - 20	Copper Cables-Distribution
	Copper Cables-Main
	Multiplexing Systems
	Radio Equipment-CAN
	Network Management
	Building Fitouts
	Power Systems
	Other Indirect (Fleet, etc.)
	SDH Transmission Equipment
	Radio Transmission
	Local Switching
	Radio Spectrum
Misc. Transmission	
21 - 30	Ducts & Pipes-Distribution
	Lead-Ins
	Support Structures
	Optical Fibre Cables
31 or longer	Ducts and Pipes-Main
	Network Buildings
	Buildings

Source: TEA model version 1.3

For the purpose of calculating the TSLRIC+ for a particular year or years, the TEA model annualises capital costs. This is achieved by ascertaining the capital cost factors by determining the depreciation (return of investment outlay) and return on capital (WACC return) for each year of the asset's life assuming straight line

depreciation. Following this, it is then converted into a flat annuity payment (the capital cost factors).

Telstra's adoption of a flat annual annuity assumes constant nominal cash flows over the life of the assets. A flat annuity is in effect a tilted annuity with a tilt of zero.

The flat annuity formula can be used to calculate the required annual annuity payment that will recover the present value of an asset's purchase price in equal annual sums over the life of the annuity. This will include compensation for both the return on capital (i.e. WACC) and a return of capital (i.e. depreciation).

For an ordinary (flat) annual annuity where payments are at the end of each year, the formula is:

$$PV_{\text{Ordinary Annuity}} = \frac{\text{Annual Payment}}{(1+r)^1} + \frac{\text{Annual Payment}}{(1+r)^2} + \dots + \frac{\text{Annual Payment}}{(1+r)^n} \quad (1)$$

$$= \text{Annual Annuity Payment} \times [1 - \frac{1}{(1+r)^n}] / r \quad (2)$$

In contrast, a tilted annual annuity calculates the present value of a stream of annual cash flows that increase at a fixed percentage per period (or tilt):

$$PV_{\text{Tilted Annuity}} = \frac{\text{First Annual Payment}}{(1+r)^1} + \frac{\text{First Annual Payment} \times (1+\text{tilt})^1}{(1+r)^2} + \dots + \frac{\text{First Annual Payment} \times (1+\text{tilt})^{(n-1)}}{(1+r)^n} \quad (3)$$

The tilted annuity formula can be used to calculate the correct initial annual payment that will increase at a fixed percentage per period to recover the present value of an asset's purchase price over the life of the annuity. Under the current regulatory framework where optimal asset values will be recalculated each time an undertaking is submitted, a tilted annuity can be used to account for the expected change in the asset value.

## Submissions

### *Methods of valuing assets over time*

#### *Telstra*

Telstra submits that because of the difficulties involved with measuring economic depreciation, straight line (accounting) depreciation should be considered reasonable under the statutory criteria for the following reasons:

- it is a common (if not universal) method of depreciation adopted by telecommunications firms in Australia;
- the ACCC considers straight-line depreciation appropriate in other industries such as aviation, electricity, gas, rail and water industries, for assets that are similar in nature to Telstra's ducts, pipes and copper cables;

- NERA in a report for the ACCC in 1999 commented that “straight line depreciation is a reasonable proxy for assets where there is little technical change...”,<sup>1009</sup>
- straight line depreciation is considered both reasonable and consistent with the legislative criteria according to Ergas in his report for Telstra;<sup>1010</sup>
- the Australian Government adjusted their methodology for calculating depreciation for tax purposes and has made it closer to economic depreciation, by allowing for further front loading of the profile; and
- straight line depreciation has the benefit that it is objective and verifiable as it does not rely on forecasts and predictions which other methods do.<sup>1011</sup>

Telstra submits that a flat annuity approach to calculating capital costs is reasonable, as it results in the present value of the annualised capital costs (properly excluding tax expenses) being equal to the initial investment cost. Hence, Telstra asserts there is no over or under recovery of investment costs using this methodology.<sup>1012</sup>

Telstra contends that a tilted annuity methodology in contrast requires applying economic values on main ducts and pipes requiring forecasts for copper price trends over the next forty years – which Telstra submits to be the life of those assets.<sup>1013</sup> Telstra, in response to the ACCC’s Draft Decision notes that, under a tilted annuity approach, the network cost component of ULLS prices would need to increase from \$9.81 to approximately \$68 per SIO per month towards the end of the ULLS assets’ lives. Telstra argues the regulatory risk inherent in such a heavily back-loaded depreciation profile is that long term deferral of cost recovery would create ‘great’ uncertainty as to whether that recovery will ever occur.<sup>1014</sup>

Telstra implies that the use of a tilted annuity results in low ULLS prices, and argues in response to the ACCC’s Draft Decision that the ACCC’s determination of low ULLS prices has caused facilities-based entry to stall, with firms preferring to use Telstra’s network rather than their own. Telstra also notes the ACCC’s recent pricing decisions have coincided with one facilities-based competitor going into liquidation, and is to some extent the effect of setting ULLS prices below the level that gives investors the expectation of financial capital maintenance.<sup>1015</sup>

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<sup>1009</sup> NERA, *Estimating the Long Run Incremental Cost of PSTN Access*, Final Report for ACCC, 1999.

<sup>1010</sup> Ergas H, *Depreciation – Prepared for Mallesons Stephen and Jaques*, Concept Economics, August 2008.

<sup>1011</sup> Telstra, *Response to Discussion Paper*, 12 August 2008, p. 38.

<sup>1012</sup> Telstra, *Response to Discussion Paper*, 12 August 2008, p. 37.

<sup>1013</sup> Telstra, *Response to Discussion Paper*, 12 August 2008, p. 37.

<sup>1014</sup> Telstra, *Response to Draft Decision*, 23 December 2008, pp. 12, 26-28.

<sup>1015</sup> Telstra, *Response to Draft Decision*, 23 December 2008, p. 28.

Telstra contends that the TEA model's straight line depreciation profile, where all network costs are levelled out, produces an average ULLS cost that is constant over time.<sup>1016</sup>

Telstra agrees with Ovum's view that tilted annuities alleviate the back-loading problem, provided that asset prices are decreasing over time. However, Telstra notes that the ACCC has assumed in a recent arbitration decision that CAN asset prices are increasing; and questions whether Ovum would support a tilted annuity if the tilt would aggravate the back-loading problem Ovum identified in its report. Telstra also queries the direction of the tilt that Ovum claim international regulators have applied.<sup>1017</sup>

In its response to the ACCC's Draft Decision, Telstra submits that the one and crucial difference between Telstra's and the ACCC's approach is that the ACCC favours a charging profile that increases significantly over the life of the asset,<sup>1018</sup> while Telstra believes the charging profile should remain flat.

Telstra submits that it has modelled the different approaches using the TEA model with Telstra's default input parameters over an asset life of 40 years. Under the ACCC's approach of a positive tilt, Telstra contends that the ULLS monthly price would rise to \$187.87 in year 40. The ACCC notes that Telstra has not advised the size of the tilt used in its modelling. Telstra submits that, even if the under-recovery is warranted for the first eight years of the underlying assets' lives, to defer increases further will amount to a generational subsidy from future ratepayers unaccompanied by any societal benefit accruing from the shift in the burden of cost recovery.<sup>1019</sup>

In response to the ACCC's Draft Decision, Telstra submits that the charging profile resulting from the tilt would not be seen in a competitive market, because no new entrant would defer recovery of its investment to the distant future. Telstra argues that if the profile were to be seen in reality, it would imply that ULLS providers are not expected to face any competition by the end of the assets' life. Telstra submits that it already faces competitive bypass from the prospective NBN rollout, the Optus HFC network, broadband wireless networks and a number of alternative fixed and fixed-wireless networks. Telstra also submits that continuing reductions in the number of CAN fixed lines means that the ACCC's approach would require even higher prices because the deferred costs would have to be recovered from fewer subscribers.<sup>1020</sup>

In a letter to the ACCC, Telstra have questioned how under-compensation during previous regulatory periods should be addressed in current and future undertakings,<sup>1021</sup>

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<sup>1016</sup> Telstra, *Response to Discussion Paper*, 12 August 2008, p. 38.

<sup>1017</sup> Telstra, *Response to Ovum*, 5 December 2008, pp. 21-22.

<sup>1018</sup> Telstra, *Response to Draft Decision*, 23 December 2008, p. 107.

<sup>1019</sup> Telstra, *Response to Draft Decision*, 23 December 2008, pp. 108-109.

<sup>1020</sup> Telstra, *Response to Draft Decision*, 23 December 2008, pp. 109-110.

<sup>1021</sup> Telstra, *Letter to the ACCC*, 2 December 2008, p. 9.

and claims that it is at significant financial risk from a tilted annuity because it will not be able to recover the full cost of the assets required to provide the ULLS.<sup>1022</sup>

Telstra submits that the reason relied on by the ACCC for applying a tilt (to prevent an abnormal return from anticipated upwards revaluation of assets) may be baseless because indications are that recent increasing price trends have now been reversed. Telstra maintains that this will result in the need for a reverse tilt to be applied to its de-valued asset base. Telstra considers that this will result in ULLS customers being charged an “absurdly high price” instead of an “unreasonably low one”.<sup>1023</sup>

Overall, Telstra submits that the ACCC approach is neither economically correct nor consistent with real world outcomes. In economic terms, Telstra argues that an asset’s value is determined by the revenue it generates, and in practical terms, regulated and private assets are valued on the basis of efficiently incurred expenditure and not in response to short term cost trends.<sup>1024</sup>

Telstra reiterated its views in its response to access seekers’ submissions to the Draft Decision.<sup>1025</sup>

In response to the ACCC’s Draft Decision, Telstra notes that the ACCC has claimed that its assessment of the WACC is based in part on Telstra’s ability to gain benefit from accelerated depreciation. Telstra submits however, that by adopting a tilted annuity, the ACCC has negated these benefits.<sup>1026</sup>

Ergas in a report prepared for Telstra, suggests that economic depreciation profiles, if they could be derived at all, reflect the opportunity cost of holding the relevant assets over time, assuming second-hand markets existed for the assets at issue.<sup>1027</sup> Ergas contrasts this with straight line depreciation which makes no sophisticated assumptions about regulated prices, future market trends or efficiency trends and simply assumes that these factors combine to reduce the value of the underlying asset by an equal increment in each year.<sup>1028</sup>

Accordingly, Ergas submits that given the complexities in deriving economic depreciation profiles and the correspondingly likely scope for regulatory error and dispute, Telstra’s straight line depreciation approach is reasonable and consistent with the TPA.<sup>1029</sup>

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<sup>1022</sup> Telstra, *Response to Draft Decision*, 23 December 2008, p. 111.

<sup>1023</sup> Telstra, *Response to Draft Decision*, 23 December 2008, p. 112.

<sup>1024</sup> Telstra, *Response to Draft Decision*, 23 December 2008, p. 113.

<sup>1025</sup> Telstra, *Response to Access Seeker Submissions on the ACCC’s Draft Decision*, 1 April 2009, p. 44.

<sup>1026</sup> Telstra, *Response to Draft Decision*, 23 December 2008, p. 113.

<sup>1027</sup> Ergas H, *Depreciation – Prepared for Mallesons Stephen and Jaques*, Concept Economics, August 2008.

<sup>1028</sup> Ergas H, *Depreciation – Prepared for Mallesons Stephen and Jaques*, Concept Economics, August 2008.

<sup>1029</sup> *Trade Practices Act 1974*, subsection 152AH(1) and subsection 152AB(2).

Ergas notes that, in the past, the ACCC has used a tilted annuity approach as a method of valuing Telstra's ULLS assets. Ergas suggests that this approach back-loads the depreciation profile for ULLS assets meaning that a substantial portion of the costs of those assets may never be recovered. Ergas contends that even in the absence of periodic asset revaluation, a back-loaded depreciation profile increases the risk that Telstra will not be able to recover the costs of its assets.<sup>1030</sup>

Ergas submits that the depreciation profile inherent in the ACCC's tilted annuity approach is not an 'economic' one.<sup>1031</sup> Ergas contends that the asset price changes, such as those implied by the ACCC's tilted annuity approach may only be justified on the expectation of a significant rise in the future earnings associated with the asset. Ergas submits that, in his experience, this has not occurred in relation to the relevant service.<sup>1032</sup>

Ergas submits that an alternative method of compensating financial risks to shareholders arising from the back-loading of capital recovery would be to offset those risks by a higher allowed rate of return. However, he notes that this would be a departure from the CAPM, the preferred method of regulatory pricing in Australia.<sup>1033</sup>

In a submission dated 15 April 2009, Ergas submits that the ACCC has not applied a time-consistent tilted annuity to ULLS prices. He submits that by constantly restarting the clock, the ACCC has reduced its TSLRIC of ULLS in Band 2 areas from \$35/service/month to \$13.90/service/month in nominal terms. As a result, eventual cost recovery is constantly being deferred.<sup>1034</sup>

Ergas submits that the overall pattern of reduction (and therefore the departure from the pattern of prices implied by the tilted annuity) does not follow a normal distribution that would be expected if depreciation in a forward-looking cost model is set on a fair basis. Ergas states that the ACCC's application of the tilted annuity has meant that "...costs largely decrease, often sharply, but there are only exceptionally moderate rises."<sup>1035</sup>

Drs Harris and Fitzsimmons—on behalf of Telstra—submit in their assessment of the TEA model that the ACCC's tilted annuity approach increases the risk that Telstra will not be able to recover its costs because there is no guarantee that Telstra will be able to increase its ULLS price in a competitive environment for fear of accelerating

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<sup>1030</sup> Ergas H, *Depreciation – Prepared for Mallesons Stephen and Jaques*, Concept Economics, August 2008.

<sup>1031</sup> Ergas H, *Depreciation – Prepared for Mallesons Stephen and Jaques*, Concept Economics, August 2008, p. 55.

<sup>1032</sup> Ergas H, *Depreciation – Prepared for Mallesons Stephen and Jaques*, Concept Economics, August 2008.

<sup>1033</sup> Ergas H, *Depreciation – Prepared for Mallesons Stephen and Jaques*, Concept Economics, August 2008, p. 55.

<sup>1034</sup> Ergas H, *Time Consistency in Regulatory Price Setting: An Australian Case Study*, Concept Economics, August 2008. Forthcoming in the Review of Network Economics, 2009, p. 7.

<sup>1035</sup> Ergas H, *Time Consistency in Regulatory Price Setting: An Australian Case Study*, Concept Economics, August 2008. Forthcoming in the Review of Network Economics, 2009, p. 7.

loss of market share. To counter this, Drs Harris and Fitzsimmons consider a greater portion of cost recovery would need to come from revenue bearing access lines in the future. However, they believe this is unlikely to be possible given the “rapid substitution of fibre for copper world-wide”. With a tilted annuity approach, they conclude that Telstra may be pushed into a spiral of higher prices and lower market shares exacerbated if access seekers rollout their own customer access facilities.<sup>1036</sup>

NERA’s TSLRIC+ assessment—submitted on behalf of Telstra—notes that it is common for TSLRIC+ models to make adjustments to “straight line and annuity depreciation for changes in asset prices”, but less so “to take account of changes in output and operating costs” as would be required in a model that measures economic depreciation. NERA defines economic depreciation as the change in the value of an asset when measured by the change in the Net Present Value (NPV) of future cash flows.<sup>1037</sup> NERA submits that most fixed network models use accounting methods of depreciation (including straight line, tilted straight line, sum of year’s digits, annuity and tilted annuity) as proxies for economic depreciation because of the practical difficulties in measuring it.<sup>1038</sup>

Notwithstanding these difficulties, NERA states it has built an economic depreciation model which it has used to compare the performance of the five main methods of accounting depreciation in approximating economic depreciation of the four main assets comprising the ULLS.<sup>1039</sup> NERA claims the TEA model uses an annuity approach.

NERA concludes that the annuity methodology applied in the TEA model provides:

- a very good approximation for economic depreciation for main ducts;
- a good approximation for distribution ducts and cable, albeit with some tendency to understate economic depreciation; and
- a poor approximation for main cable with a pronounced tendency to understate economic depreciation.

NERA explains the poor approximation for main cable is because the method generally understates depreciation of assets with an asset life of 10 years or less, which includes main cable.<sup>1040</sup>

NERA submits that “an annuity more closely approximates depreciation” for all the main CAN assets than a tilted annuity because a tilted annuity “fails to take account of declining output over an asset’s life” due to obsolescence, increases in operating

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<sup>1036</sup> Dr Robert G Harris and Dr William Fitzsimmons. *Assessment of TEA Model*, 4 November 2008, pp. 45-47.

<sup>1037</sup> NERA, *TSLRIC+ Assessment*, 16 January 2009, p. 13.

<sup>1038</sup> NERA, *TSLRIC+ Assessment*, 16 January 2009, pp. 14-15.

<sup>1039</sup> NERA, *TSLRIC+ Assessment*, 16 January 2009, pp. 42-44.

<sup>1040</sup> NERA, *TSLRIC+ Assessment*, 16 January 2009, pp. 24-25.

costs, and “asset stranding from loss of market share or changing customer locations.”<sup>1041</sup>

NERA concludes that the depreciation methodology used in the TEA model closely resembles an annuity, which produces a slightly higher “levelised” capital cost factor. The difference is due to the choice of discount rate in the levelisation of the annual capital cost factors. Accordingly, NERA submits that the TEA model can be seen as conservative.<sup>1042</sup>

### *Other parties*

Optus submits that a tilt is placed in the annuity calculation to mimic the price path for an asset that might be expected in a competitive market.<sup>1043</sup> In this regard Optus suggests that the recovery of capital should reflect the following factors:

- the level of competition in the market;
- expectations of new technologies; and
- changes in the replacement cost of relevant assets.

Optus submits that a tilt is normally incorporated in the annuity function to reflect the expected price trends of assets that are being valued and allow regulators to replicate the cost recovery conditions that would be faced by a firm in a competitive market.<sup>1044</sup>

Optus submits that the price trends and methodology previously used by the ACCC in making a final determination of the access price in the access dispute between Telstra and Optus is acceptable, as these trends were based upon publicly available ABS data, were verifiable and used a sound methodology.<sup>1045</sup>

Optus supports the ACCC Draft Decision to reject the application of a zero tilt on the basis that Telstra will be over-compensated each regulatory period the network is revalued unless an appropriately tilted annuity ensures that the net present value of returns is equal to the initial investment.<sup>1046</sup> Optus also submits that the problem of under- or over-compensation is mitigated by the inclusion of the equity beta used in the CAPM and the periodic revaluation of the assets to minimise the potential for significant variation between forecast and actual price movements.<sup>1047</sup>

An issues paper prepared by Network Strategies on the ACCC’s Draft Decision notes that at least eight other telecommunications regulatory agencies have adopted or

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<sup>1041</sup> NERA, *TSLRIC+ Assessment*, 16 January 2009, p. 25.

<sup>1042</sup> NERA, *TSLRIC+ Assessment*, 16 January 2009, p. 36.

<sup>1043</sup> Optus, *Response to the ACCC’s Discussion Paper*, August 2008, p. 57.

<sup>1044</sup> Optus, *Response to the ACCC’s Discussion Paper*, August 2008, p. 57.

<sup>1045</sup> Optus, *Response to the ACCC’s Discussion Paper*, August 2008, p. 42.

<sup>1046</sup> Optus, *Response to the ACCC’s Draft Decision*, December 2008, p. 27.

<sup>1047</sup> Optus, *Response to the ACCC’s Draft Decision*, December 2008, footnote 69, p. 29, and Appendix A, pp. 2-3.

support a tilted annuity approach, as a proxy for more complicated economic depreciation methodologies. In particular, Network Strategies notes the Swedish regulator has the support of the incumbent operator, TeliaSonera for a tilted annuity and the Irish regulator, ComReg, claimed consensus was reached on the use of a tilted annuity depreciation methodology.<sup>1048</sup>

MJA in its report on behalf of CCC, submits that they do not support the simple annuity formula as it does not reflect an asset's price trends. MJA suggests that the tilt should reflect forward looking price trends for an asset. MJA notes that historic price trends could be used as a proxy for ascertaining future price trends, but only where there is an expectation that such a trend will continue.<sup>1049</sup>

Optus and MJA submit that the rationale for the tilt is that:

- when input prices are falling, a potential new entrant will in the future have a lower cost base. As a result, incumbent operators will only invest in the market today if they can recover more of their capital in the early periods;<sup>1050</sup>  
or
- when input prices are rising, a potential new entrant will in the future have a higher cost base. As a result, future returns on the asset will be protected.<sup>1051</sup>

MJA submits that the TEA model should allow for price changes at the appropriate cost category level which captures the price trends of equipment and labour. MJA also submits that trends in minor input costs should be inputted separately, rather than combining composite trends. This would improve the TEA model's transparency.<sup>1052</sup>

MJA notes that they expect asset prices to decrease for telecommunications equipment as a result of technological change and improved efficiencies in the manufacturing process. However, for labour intensive inputs such as trenching and ducting, prices would expect to increase over time. MJA also notes the rapid sustained increases in the price of copper over the past 10 years may be indicative of a slight future upward trend.<sup>1053</sup>

In addition to accounting for the change in input prices, MJA submits that a tilt accounts for the likely expectation that the assets may be under-utilised or only fully utilised for part of the asset's life.<sup>1054</sup>

MJA submits that both these factors (input price and asset utilisation) change the value of the installed equipment of an operator today and need to be taken into

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<sup>1048</sup> Network Strategies, *Draft Decision Issues Paper*, 19 December 2008, pp. 11, 12, 14.

<sup>1049</sup> MJA, *Review of the TEA model*, 12 August 2008, p. 10.

<sup>1050</sup> MJA, *Review of the TEA model*, 12 August 2008, pp. 10-12.

<sup>1051</sup> Optus, *Response to the ACCC's Discussion Paper*, August 2008, p. 58

<sup>1052</sup> MJA, *Review of the TEA model*, 12 August 2008, p. 11.

<sup>1053</sup> MJA, *Review of the TEA model*, 12 August 2008, p. 11.

<sup>1054</sup> MJA, *Review of the TEA model*, 12 August 2008, p. 11.

account in pricing decisions. MJA notes that advanced cost models do apply economic depreciation to account for such price changes and asset utilisation; although MJA suggests that this approach suffers from limitations.<sup>1055</sup> MJA does not provide details as to the limitations it refers to. MJA suggests that a tilted annuity approach based on price trends is a suitable method to account for price trends that are experienced by the asset.<sup>1056</sup>

In response to the ACCC's Draft Decision, CCC submits that the depreciation profile of assets should not be easily changed if fair compensation is to be achieved. The only adjustments that should be made are those that ensure the expected cash flows over the life of the asset equal the invested value of the network. By changing to a flat annuity "midstream", the CCC submits that Telstra is asking the ACCC to accept an (unwarranted) increase in the annual depreciation allowance.<sup>1057</sup>

Ovum submits that in most bottom-up LRIC models, the chosen depreciation methodology is the annuity method. The advantage of an annuity calculation is that it takes account of the discount rate (cost of capital), which generally suggests that it is rational to delay depreciation payments to some extent.<sup>1058</sup>

Ovum submits that tilted annuity depreciation recovers both the depreciation charge and the cost of capital and revalues assets at their modern equivalents. Ovum submits that this is consistent with an efficient network and is also consistent with the preferred approach to telecommunications regulations by a number of regulators internationally, such as the Commerce Commission in New Zealand, Post and Telecom Agency (PTS) in Sweden and Telestyrelsen in Denmark.<sup>1059</sup>

Ovum submits that the method of determining annualised capital costs in the TEA model could potentially over compensate Telstra if the values of assets are increasing. Alternatively, it may under compensate Telstra in the event that asset values are decreasing.<sup>1060</sup>

Ovum has reviewed Telstra's responses to other parties and to the ACCC's Draft Decision, and maintains that a tilted annuity is the preferred method for preventing under- or over-compensation. As part of its review, Ovum has applied a zero tilt through an annuity approach to the TEA model and found that the monthly price per line increases slightly. Ovum notes that Telstra uses a levelisation approach in the TEA model, which converts the straight-line depreciation and cost of capital into an approximate annuity rate. Accordingly, Telstra's current charge is slightly lower than an annuity calculation. Ovum also notes that an annuity charge will produce the same rate as a zero-tilted annuity.<sup>1061</sup>

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<sup>1055</sup> MJA, *Review of the TEA model*, 12 August 2008, p. 11.

<sup>1056</sup> MJA, *Review of the TEA model*, 12 August 2008, p. 11.

<sup>1057</sup> Competitive Carriers Coalition, *CCC's Submission*, 15 December 2009, p. 5.

<sup>1058</sup> Ovum, *TEA model (v1.0), economic review*, 6 August 2008, p. 19.

<sup>1059</sup> Ovum, *TEA model (v1.0), economic review*, 6 August 2008, p. 19.

<sup>1060</sup> Ovum, *TEA model (v1.0), economic review*, 6 August 2008, p. 19.

<sup>1061</sup> Ovum, *Economic Issues - Advisory Note*, 5 February 2009, pp. 14-15.

In response to the ACCC's Draft Decision, Unwired submits that the ACCC is correct in its analysis that re-estimating the forward-looking cost of the network each year will ultimately overprice the network. However, it advocates that the solution is to "choose a base year and then use either (new) actual costs or a reasonable index to set forward prices."<sup>1062</sup>

### *Network component asset lives*

#### **Submissions**

##### *Telstra*

Telstra has responded to the Optus and Ovum claims of possible errors by noting that the asset life dependencies have been fixed in version 1.2 of the TEA model.<sup>1063</sup> Telstra also notes that the TEA model reflects the economic lives of the assets, rather than the asset lives Telstra has published in its Annual Reports, and that this is common practice in TSLRIC+ models.<sup>1064</sup> In its response to the ACCC's Draft Decision, Telstra notes that the use of the longer asset lives reported in its Annual Reports does not make the resulting price reasonable, even if it does lead to lower costs.<sup>1065</sup>

In a letter to the ACCC, Telstra questioned whether the ACCC considers the economic life of assets to be a less appropriate measure than the physical life of the assets, and why the ACCC believed that next generation technology would not affect the operational lives of assets.<sup>1066</sup> Telstra submits that its criteria for setting asset lives are those which determine economic asset lives, which the ACCC has endorsed in its Statement of Reasons in the PowerTel Final Determination.<sup>1067</sup>

Drs Harris and Fitzsimmons argue that the economic lives of CAN assets are necessarily shortened by the impact of the competitive process, including the achievement of public policy objectives by the promotion of innovation and investment in new technologies.<sup>1068</sup>

In response to the ACCC's Draft Decision, Telstra contends that it is only the copper cable asset life that is contentious and maintains that the life of 20 years used in the TEA model is consistent with the distribution cable life used by the ACCC in determinations of previous access disputes.<sup>1069</sup> Telstra also responded to Optus' criticism of the main cable asset life, noting that Optus' sources generally do not

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<sup>1062</sup> Unwired, *Response to the ACCC's Draft Decision*, 16 January 2009, p. 3.

<sup>1063</sup> Telstra, *Response to Ovum*, 5 December 2008, p. 22.

<sup>1064</sup> Telstra, *Response to Ovum*, 5 December 2008, p. 22.

<sup>1065</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, pp. 115-116.

<sup>1066</sup> Telstra, *Letter to the ACCC*, 2 December 2008, p. 7.

<sup>1067</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 115.

<sup>1068</sup> Dr Robert G Harris and Dr William Fitzsimmons, *Assessment of TEA Model*, 4 November 2008, pp. 44-45.

<sup>1069</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 111.

distinguish between main and distribution cables in discussion of service life, and that Optus' preferred asset life of 15 years for main cable is very close to the weighted average of 14.5 years for copper and distribution cable in the TEA model.<sup>1070</sup>

In response to the ACCC's December 2008 section 152BT request for further information, Telstra submits that forward-looking, economic asset lives are relevant, and that these are subject to different technological, economic and market circumstances that are likely to be very different to those of the past.<sup>1071</sup>

#### *Other parties*

Optus submits that the TEA model is insensitive to changes in asset lives and notes that changing a network component asset life should have a significant impact on the monthly ULLS charge output. Optus also notes that the treatment of cost inputs in the TEA model is also reasonably different to Telstra's previous PIE II model. Accordingly, Optus submits that the model appears to be intrinsically flawed.<sup>1072</sup>

Optus notes that in the past the ACCC has accepted the asset lives proposed by Telstra and while recognising this may increase the monthly ULLS cost, it was counter-balanced through the use of a tilted annuity. Optus contends that the ACCC should analyse Telstra's proposed asset lives in greater depth.<sup>1073</sup>

To this end, Optus notes that Telstra's 2001 submission to the Productivity Commission's draft report on telecommunications regulation stated that at least 50 per cent of Telstra's CAN was built before 1980, 30 per cent before 1970 and a significant proportion before 1960.<sup>1074</sup> Optus uses this information to argue that Telstra has fully recovered the cost of a substantial portion of the various CAN assets at least once and conceivably up to four times over and that it is unreasonable for the ACCC to accept the 2008 Undertaking on the basis of the asset lives on which it is based.<sup>1075</sup>

Optus contends that the asset life proposed in the TEA model of 10 years for main copper cable is too short and as a result the capital costs of the CAN are significantly over-recovered. Optus notes that in the ACCC's recent Pricing Principles Determination the ACCC considered an asset life of 12 years for the main cable. However, Optus submits that an asset life of 15 years for main copper cable is more appropriate and is consistent with international standards.<sup>1076</sup> Optus cites reports from PWC<sup>1077</sup> and Ernst & Young<sup>1078</sup> which indicate economic lives of copper cable beyond

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<sup>1070</sup> Telstra, *Response to access seekers submissions*, 18 November 2008, pp. 75-76.

<sup>1071</sup> Telstra, *Response to section 152BT Request*, 13 March 2009.

<sup>1072</sup> Optus, *Response to the ACCC's Discussion Paper*, August 2008, p. 59.

<sup>1073</sup> Optus, *Response to the ACCC's Discussion Paper*, August 2008, p. 59.

<sup>1074</sup> Optus, *Response to the ACCC's Draft Decision*, December 2008, p. 9.

<sup>1075</sup> Optus, *Response to the ACCC's Draft Decision*, December 2008, pp. 10-12.

<sup>1076</sup> Optus, *Response to the ACCC's Discussion Paper*, August 2008, p. 60.

<sup>1077</sup> PriceWaterhouseCoopers, *Telco Network Service Lives*, March 1999, p. 5, as cited in Optus, *Response to Discussion Paper*, August 2008, p. 61.

that of 10 years, while also submitting that Ofcom in the UK adopted an asset life of 18 years for main cable provided by BT.<sup>1079</sup> Optus also notes that Telstra's own statements from 2006 indicate an asset life of beyond 10 years for copper main cable. The Telstra 2006 Financial Report also lists the service life of main cable as between five and 25 years, implying a service life mid-point of 17.5 years.<sup>1080</sup>

MJA observes that Telstra have included a shortened asset life for the main network copper cable.<sup>1081</sup> MJA contends that this is logical if there is an expectation of replacement of copper in the relevant part of the network, i.e. migration to 'fibre to the node'. MJA contends however, that this approach indicates that a copper network is unlikely to be optimal and other technology should be considered on a forward looking basis.<sup>1082</sup>

MJA contends that an appropriate solution, when strictly applying TSLRIC, is that modelling of a more efficient technology should be undertaken, but notes that the TEA model does not allow for this as the choice of technology is restricted to copper.<sup>1083</sup> MJA submits that because of this the TEA model fails the basic test inherent in the TSLRIC concept of being forward looking and suggests that in comparison Telstra's previous model PIE II is actually better as it encompassed a series of technology options.<sup>1084</sup>

The CCC, in response to the ACCC's Draft Decision, submits that one of the primary difficulties in a forward-looking TSLRIC model is time consistency. Even where asset values are observable, errors made in the choice of asset lives will not result in the achievement of fair compensation. Using the example of copper cable, CCC notes that the TEA model uses an asset life of 10 years. However, the CCC claims that anecdotal evidence suggests that some copper is over 30 years old and that other evidence presented to the ACCC suggests that the average life is at least 15 years. As a result, the CCC contends that using a figure of 10 years compensates Telstra for costs it is not incurring and is not truly expecting to incur.<sup>1085</sup>

Like Optus, Ovum submits that the TEA model is insensitive to changes in asset lives. Given the inoperability of the model to change particular input component asset lives, Ovum suggests that the model—in its current form—lacks transparency and may contain a modelling error.<sup>1086</sup>

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<sup>1078</sup> Ernst & Young, *Global Telecom Depreciation Survey*, October 2002, p. 9, as cited in Optus, *Response to Discussion Paper*, August 2008, p. 61.

<sup>1079</sup> Optus, *Response to the ACCC's Discussion Paper*, August 2008, p. 61.

<sup>1080</sup> Telstra, *Telstra Financial Reports*, 30 June 2006, p. 16, as cited in Optus, *Response to Discussion Paper*, August 2008, p. 64.

<sup>1081</sup> MJA, *Review of the TEA model*, 12 August 2008, p. 5.

<sup>1082</sup> MJA, *Review of the TEA model*, 12 August 2008, p. 5.

<sup>1083</sup> MJA, *Review of the TEA model*, 12 August 2008, p. 5.

<sup>1084</sup> MJA, *Review of the TEA model*, 12 August 2008, p. 5.

<sup>1085</sup> Competitive Carriers Coalition, *CCC's submission*, 15 December 2008, pp. 4-5.

<sup>1086</sup> Ovum, *TEA model (v1.0), economic review*, 6 August 2008, p. 22.

Ovum submits that the asset lives used in the TEA model do not match the asset lives reported in Telstra's Annual Report. Ovum suggests that if the asset lives reported in Telstra's Annual Report were inputted in the model, and maintaining all other variables constant, the ULLS charge would decrease by 2-3 per cent.<sup>1087</sup> Ovum also submits that asset lives should be re-valued to their economic lives.<sup>1088</sup>

### *Annualisation and unitisation*

#### **Submissions**

##### *Telstra*

Telstra submits that it has adopted a building block approach to calculating annualised capital costs.<sup>1089</sup> This involves applying straight line depreciation to determine the return of capital and applying a standard WACC to determine the return on capital.

The TEA model levels out the annual costs derived from the building block approach over the life of the relevant assets.<sup>1090</sup> Telstra submits that levelising annual costs eliminates any variability in the total annual costs over time and ensures recovery, not just over the 2008 Undertaking period, but in the long run. Telstra contends that its methodology to ascertain annualised costs is reasonable and does not under or over recover investment costs.<sup>1091</sup>

Telstra submits that the approach used to unitise costs, namely, to use all current active lines, is conservative and will understate unit ULLS costs over time as the number of ULLS active lines is forecast to fall by **[begin c-i-c]** [REDACTED] **[end c-i-c]** per cent every year over the period of the undertaking.<sup>1092</sup> Telstra submits that given a large proportion of the costs of the CAN are fixed, a decline in active lines will result in higher unit costs.<sup>1093</sup>

NERA reviewed the implementation of the steps performed in the model to develop the 'levelised' annuity and concludes that the depreciation methodology produces a slightly higher annual capital cost factor, but is a reasonable proxy for, economic depreciation.<sup>1094</sup>

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<sup>1087</sup> Ovum, *TEA model (v1.0), economic review*, 6 August 2008, p. 21.

<sup>1088</sup> Ovum, *TEA model (v1.0), economic review*, 6 August 2008, p. 21.

<sup>1089</sup> Telstra, *Response to the ACCC's Discussion Paper*, 12 August 2008, p. 37.

<sup>1090</sup> Telstra, *Response to the ACCC's Discussion Paper*, 12 August 2008, p. 37.

<sup>1091</sup> Telstra, *Response to the ACCC's Discussion Paper*, 12 August 2008, p. 37.

<sup>1092</sup> Telstra, *Response to the ACCC's Discussion Paper*, 12 August 2008, p. 37.

<sup>1093</sup> Telstra, *Response to the ACCC's Discussion Paper*, 12 August 2008, p. 37.

<sup>1094</sup> NERA, *TSLRIC+ Assessment*, 16 January 2009, p. 36.

### *Other parties*

Optus contends that Telstra's methodology to calculate annualised and unitised network costs is not appropriate and suggests that a tilted annuity approach should be adopted, as has been the case with the indicative prices for the ULLS.<sup>1095</sup>

Accordingly, Optus submits that the cost estimates produced by the TEA model do not reflect the forward-looking efficient costs of supply of the ULLS according to the TSLRIC+ pricing principle.<sup>1096</sup>

As noted in the previous section, MJA contends that the approach adopted by Telstra, which it refers to as the 'standard annuity' does not take into account the two developments which would occur over the economic life of an asset: (1) asset prices change over time; and (2) for part of the assets life it is likely to be under-utilised. Both of these factors can influence the value of assets, although MJA concedes that this second factor is likely to be less pronounced for the ULLS.<sup>1097</sup>

### **ACCC view**

#### *Use of a tilted annuity*

The ACCC considers that the application of a positive tilt to the regulated cash flows in a TSLRIC+ model for the purposes of this undertaking is appropriate for fair compensation. The ACCC considers that assets should be re-valued periodically to reflect a current hypothetically efficient network under TSLRIC+ in each regulatory period. Therefore, as the ACCC considers that the CAN replacement cost for ducts and pipes are likely to increase by slightly more than inflation during the undertaking period - this should be reflected in the forward-looking cost of the CAN. By positively tilting the annuity, costs can be recovered later than if a simple annuity approach is used. The ACCC applied a three per cent tilt to ducts and pipes and copper cables in its own scenario run of the TEA model, which reflects forecasted inflation from December 2008 to December 2010 - this time period is as consistent with the period of the undertaking as possible.<sup>1098</sup>

The ACCC notes that Telstra proposes a flat (zero tilt) annuity approach in its implementation of TSLRIC+. The ACCC considers that, if a zero tilt is applied, Telstra may receive an abnormal return when capital inputs used to provide the ULLS are re-valued upwards in future regulatory periods in response to price trends. The ACCC notes that it expressed its preference for this approach in the ACCC's *Pricing*

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<sup>1095</sup> Optus, *Response to the ACCC's Discussion Paper*, August 2008, pp. 57-58.

<sup>1096</sup> Optus, *Response to the ACCC's Discussion Paper*, August 2008., p. 58.

<sup>1097</sup> MJA, *Review of the TEA model*, 12 August 2008, p. 11.

<sup>1098</sup> see [http://www.rba.gov.au/PublicationsAndResearch/StatementsOnMonetaryPolicy/Aug2008/list\\_of\\_tables.html#table\\_17](http://www.rba.gov.au/PublicationsAndResearch/StatementsOnMonetaryPolicy/Aug2008/list_of_tables.html#table_17)

*Principles for Unconditioned Local Loop Service, Pricing Principles and Indicative Prices.*<sup>1099</sup>

The ACCC notes that Telstra's main arguments for a flat annuity are that:

- a positive tilt is not justified as recent asset prices are not increasing;
- the tilted annuity approach will result in a significant back-loaded depreciation profile. This approach may mean that Telstra may not be able to recover its costs of providing the ULLS; and
- Telstra faces significant competitive bypass such that a continuing fall in the number of CAN fixed lines means future higher ULLS prices so it may recover its costs.

Each of these issues is discussed, in turn, below. In summary, the ACCC considers that, having regard to all submissions, the ACCC is not satisfied that a flat annuity is a reasonable assumption.

*Are the costs of ducts and pipes likely to increase over the undertaking period?*

Telstra argues that the reason relied on by the ACCC for applying a tilt in its Draft Decision (to prevent an abnormal return from anticipated upwards revaluation of assets) may be baseless because indications are that recent increasing price trends have now been reversed. Telstra maintains that this will result in the need for a reverse tilt to be applied to its de-valued asset base. Telstra considers that this will result in ULLS customers being charged an “absurdly high price” instead of an “unreasonably low one”.<sup>1100</sup>

The ACCC does not agree with Telstra's submission, and considers that the cost of ducts and pipes are likely to increase in a forward-looking replacement CAN. The ACCC notes that Telstra is inconsistent in its view as to whether the replacement cost of the CAN is increasing over time. In particular, the ACCC notes that the TEA model estimate of the cost of ducts and pipes at [begin c-i-c] [redacted] [end c-i-c]<sup>1101</sup> reflects a significant periodic increase in the value of these assets, compared to their value in Telstra's PIE II model submitted as part of its 2005 Undertaking, which valued those assets at [begin c-i-c] [redacted] [end c-i-c].<sup>1102</sup>

*Would the tilted annuity approach result in a significant back-loaded depreciation profile such that Telstra may not be able to recover its costs of providing the ULLS?*

Telstra argues that the consequence of the back-loaded depreciation profile due to the tilted annuity approach is that the long term deferral of cost recovery would create uncertainty as to whether that recovery will ever occur. Similarly, Ergas submits that

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<sup>1099</sup> ACCC, *Pricing Principles for Unconditioned Local Loop Service Amendment Determination 2008 (No.1)*, p.5.

<sup>1100</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 112.

<sup>1101</sup> Telstra, *O&M and indirect cost factor study*, 7 April 2008.

<sup>1102</sup> ACCC, *2006 ACCC final decision*, August 2006, p. 69.

when a positive tilted annuity approach is applied, a substantial portion of the costs of those assets may never be recovered. Ergas contends that, even in the absence of periodic asset revaluation, a back-loaded depreciation profile increases the risk that Telstra will not be able to recover the cost of its assets.<sup>1103</sup>

Telstra argues and provides analysis to show that the tilt proposed by the ACCC in earlier decisions means that its ULLS price will rise to nearly \$188 in year 40 for it to recover its costs, assuming no other changes during the intervening period.<sup>1104</sup>

The ACCC does not agree with Telstra's views for the following reasons:

- the ACCC notes that the application of a positive tilt of three per cent reflects its expectation of an increase in inputs used in the replacement of ducts and pipes *over the regulatory period*. The ACCC is not suggesting that this price trend would continue over a 40 year period - what Telstra has assumed in its analysis. The ACCC notes that in a periodic asset revaluation such as when an undertaking is submitted, it will review its forecast of the expected price trends of CAN assets;
- the ACCC notes that Telstra's entire analysis that the ULLS price will rise to \$188 in year 40 is based on a set of misleading assumptions:
  - Telstra's derivation of \$188 in year 40 is based on nominal dollars. This is a significant assumption, as in real terms, the increase required for Telstra to recover its costs over time are much less significant than Telstra claims;
  - it would also appear that Telstra has applied a tilt of about 4.3 per cent on overall ULLS prices in its analysis (and not the ACCC's tilt of 3 per cent on capital asset prices);<sup>1105</sup>
  - Telstra incorrectly applies the starting ULLS price in year one of between \$35-37, when the starting price should be \$14-16 - the ULLS indicative price currently in place;
  - the ACCC considers that the application of a three per cent tilt is not particularly significant in real terms as it reflects a 0.5 per cent increase above the mid-point in the RBA's long term target inflation level of 2.5 per cent.<sup>1106</sup> The ACCC also considers that the assets (ducts and pipes and copper cables) which the positive tilt is applied to are those unlikely to achieve the same productivity gain as other type of capital assets, given the limited dynamic growth in these assets. In this regard, it would be expected that prices for these assets to be above average inflation;

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<sup>1103</sup> Ergas H, *Depreciation – Prepared for Mallesons Stephen and Jaques*, Concept Economics, August 2008.

<sup>1104</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, Figure 6, p. 108.

<sup>1105</sup>  $r = ((188/35)^{(1/40)}) - 1 = 0.0429$

<sup>1106</sup> The RBA has *recently* reiterated its support for this inflation target: [http://www.rba.gov.au/MonetaryPolicy/statement\\_conduct\\_mp\\_4\\_06122007.html](http://www.rba.gov.au/MonetaryPolicy/statement_conduct_mp_4_06122007.html)

- therefore, the ACCC's estimate of the nominal ULLS price in year 40 using a starting price of \$14 and a tilt of 3 per cent is \$45.67;<sup>1107</sup> and
- the ACCC has considered NERA's assessment of the TEA model's approximation of economic depreciation, but notes it is not clear what assumptions NERA has used for the assessment of the subject accounting methodologies, particularly the size of the tilt used in the assessment of the tilted annuity method.

In response to Ergas' submission of 15 April 2009, the ACCC notes that Ergas seems to suggest that the ACCC has applied a time-inconsistent tilted annuity 'by constantly restarting the clock'. The ACCC notes that revaluing network assets in each regulatory period is consistent with TSLRIC. The ACCC also notes a positive tilted annuity is applied when a positive price trend is *expected* over the regulatory period, therefore, an *ex-post* ULLS price may not reflect *ex-ante* prices. Further, the ACCC notes that Ergas' statement that the overall trend in the change in ULLS prices does not follow a normal distribution, relies on only nine data points - such a small sample size cannot be relied on to make valid conclusions about the characterisation of the distribution for prices.

The ACCC considers that, in principle, an access price based on a recovery of the network asset value using either a tilted annuity or a flat annuity can be reasonable in circumstances where the term of the proposed undertaking matches the life of the assets or where the price trend for the network asset is flat.

The assets which make up the CAN clearly have a lifespan which will exceed both the proposed undertaking period and the maximum legislated regulatory period length, and the efficient and forward looking valuation of the network asset will change through time (in an upward direction based on current trends).

Therefore, in the absence of a zero price trend or an undertaking which covers a period that reflects the life of the underlying network assets, the ACCC cannot be satisfied that a flat annuity approach would be reasonable – as periodic asset revaluation would lead to expected cash flows over the life of the asset with a present value greater than the cost of the asset and therefore expected *ex-ante* over-recovery of the network capital costs. However, Telstra's proposed undertaking is only for a two year period, and the TPA<sup>1108</sup> does not allow the ACCC to accept an undertaking which has a term exceeding three years.

*Does Telstra face significant competitive bypass such that a continuing fall in the number of CAN fixed lines means future higher ULLS prices so it may recover its costs?*

Telstra submits that it already faces competitive bypass from various alternative infrastructure - the prospective NBN rollout, the Optus HFC network, wireless broadband networks and a number of alternative fixed and fixed-wireless networks. Telstra submits that continuing reductions in the number of CAN fixed lines means

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<sup>1107</sup>  $45.67 = 14 * (1 + 0.03)^{40}$

<sup>1108</sup> *Trade Practices Act 1974*, paragraph 152BV(2)(e).

that the ACCC's approach would require even higher prices because the deferred costs would have to be recovered from fewer subscribers.<sup>1109</sup>

Telstra also argues that it is at significant financial risk where a positive tilted annuity is applied because it will not be able to recover the full cost of the assets required to provide the ULLS.<sup>1110</sup>

NERA also submits a tilted annuity "fails to take account of declining output over an asset's life" due to obsolescence, increases in operating costs, and "asset stranding from loss of market share or changing customer locations."<sup>1111</sup>

The ACCC does not agree with Telstra and NERA's views. In particular, the ACCC notes that:

- the number of CAN fixed lines may not fall in the near future as ADSL is still used widely which may continue for some time;
- as noted previously, Telstra's analysis to support its statement that it may never recover its costs is premised on the regulatory period extending beyond the statutory undertaking period of three years, which is unknown;
- Telstra has not quantified the effect of the 'financial risk' it believes it would bear from costs recovered later in the regulatory period, therefore, the ACCC is unable to determine the materiality of this risk; and
- the ACCC is not persuaded by NERA's argument that an assessment of economic depreciation should take account of asset stranding. The ACCC considers that the TEA model accounts for changes in operating costs, however loss of monopoly market share is not considered relevant to regulatory pricing. This would be inconsistent with the legislative criteria the ACCC must consider when assessing an undertaking. For instance, compensating the incumbent for loss of monopoly profits would not promote competition in related markets.

### ***Asset lives***

The ACCC notes that the decline in the economic value of an asset (the depreciation schedule) is determined by a range of factors including its expected operational life and expectations concerning technological obsolescence.<sup>1112</sup>

In terms of taking account of technological obsolescence, the ACCC notes comments by Optus and MJA that Telstra have included a shortened asset life for the main network copper cable.<sup>1113</sup> MJA notes that this approach indicates that a copper

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<sup>1109</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, pp. 109-110.

<sup>1110</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, p. 111.

<sup>1111</sup> NERA, *TSLRIC+ Assessment*, 16 January 2009, p. 25.

<sup>1112</sup> ACCC, *Access Pricing Principles - Telecommunications: a guide*, July 1997, p. 45.

<sup>1113</sup> MJA, *CCC Review*, 12 August 2008, p. 5.

network is unlikely to be optimal and other technology should not be considered on a forward looking basis but that the TEA model restricts the choice of technology to copper.<sup>1114</sup>

The ACCC agrees with MJA's comments that Telstra is inconsistent in its assumption of the technology platform that would exist in an efficient forward-looking network. While Telstra's implementation of TSLRIC+ has assumed a replication of Telstra's copper network, the asset life it has applied to main copper cables (10 years) does not appear to be based on the expected decline in the economic value of copper. Rather, the main copper cable asset life appears to be shortened to take account of technological obsolescence. The ACCC also notes that Drs Harris and Fitzsimmons also suggest that the economic lives of CAN assets are necessarily shortened by the impact of the competitive process, including the achievement of public policy objectives by the promotion of innovation and investment in new technologies.<sup>1115</sup>

The ACCC notes that the asset lives proposed by Telstra corresponds to its accounting department's view of the appropriate amortisation, which includes the replacement of assets possibly by advanced non-copper (next generation) technologies.

Therefore, the ACCC reiterates its view from its Draft Decision that Telstra's default asset life value for main copper cable is not reflective of its economic life if copper is assumed as the best-in-use technology in a hypothetical network. Instead, Telstra appears to assume that the copper network will be replaced with a non-copper network in 10 years time. The ACCC notes that it considers that asset lives need to primarily be determined by their expected operational (physical) life. As such, while the regulatory asset lives might be less than the physical asset lives, they should not be substantially less.

The ACCC also notes comments from Ovum that the asset lives used in the TEA model do not match the asset lives reported in Telstra's Annual Report. Ovum suggests that if the asset lives reported in Telstra's Annual Report were inputted into the model, and maintaining all other variables constant, the ULLS charge would decrease by 2-3 per cent.

In terms of the effect of extending asset lives, in its Draft Decision, the ACCC noted that extending the assets lives in the TEA model has a limited impact. The ACCC notes Optus and Ovum's comments that the TEA model is insensitive to changes in asset lives and notes that changing a network component asset life should have a significant impact on the monthly ULLS charge output. The ACCC notes that the effect on the TEA model cost estimate from extending an asset's life depends on the proportion that asset value has on the total CAN value.

Overall, the ACCC is not satisfied that Telstra's assumptions regarding the economic decline of CAN assets are appropriate; in particular, the ACCC is not satisfied that a flat annuity represents the economic value of CAN assets for an efficient forward-looking hypothetical network. The ACCC also notes that the shortened asset life

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<sup>1114</sup> MJA, *CCC Review*, 12 August 2008, p. 5.

<sup>1115</sup> Dr Robert G Harris and Dr William Fitzsimmons, *Assessment of TEA Model*, 4 November 2008, pp. 44-45

Telstra has applied to the main copper cable is inconsistent with the expected physical life of the copper cable. However, the ACCC notes that it does not have significant concerns with the other asset lives Telstra has applied in the TEA model.

## Appendix C Section 152CGA Specification of Documents

For the purposes of section 152CGA, the documents that the ACCC examined in the course of making its decision are specified in this section.

Below is a list of submissions that have been submitted to the ACCC and were examined by the ACCC as part of this undertaking assessment.<sup>1116</sup>

Many of these documents contain confidential information. Where this is the case, the document title has been marked with an asterisk (\*). In most cases, public versions of documents are available and confidential versions may be accessed, subject to appropriate confidentiality undertakings with the owner of the information.

Doc No	Details	Author	Party who submitted document	Date			*
				D	M	Y	
1	Statement of [begin c-i-c] [redacted] [end c-i-c] (including attachments).	[begin c-i-c] [redacted] [end c-i-c]	Telstra	13	3	2009	*
2	Statement of [begin c-i-c] [redacted] [end c-i-c] (including attachments and annexures).	[begin c-i-c] [redacted] [end c-i-c]	Telstra	11	8	2008	*
3	Statement of [begin c-i-c] [redacted] [end c-i-c] (including attachments).	[begin c-i-c] [redacted] [end c-i-c]	Telstra	8	4	2009	*
4	Statement of [begin c-i-c] [redacted] [end c-i-c] (including attachments).	[begin c-i-c] [redacted] [end c-i-c]	Telstra	16	4	2009	*
5	Statement of [begin c-i-c] [redacted] [end c-i-c] (including attachments).	[begin c-i-c] [redacted] [end c-i-c]	Telstra	12	8	2008	*
6	Statement of [begin c-i-c] [redacted] [end c-i-c] (including attachments).	[begin c-i-c] [redacted] [end c-i-c]	Telstra	19	12	2008	*
7	Statement of [begin c-i-c] [redacted] [end c-i-c] (including attachments).	[begin c-i-c] [redacted] [end c-i-c]	Telstra	17	12	2008	*
8	Statement of [begin c-i-c] [redacted] [end c-i-c] (including attachments).	[begin c-i-c] [redacted]	Telstra	11	8	2008	*
9	Statement of [begin c-i-c] [redacted] [end c-i-c] (including attachments).	[begin c-i-c] [redacted] [end c-i-c]	Telstra	11	8	2008	*

<sup>1116</sup> These submissions may refer to other submissions to prior undertaking assessments or model price determinations. Although not necessarily listed here, public versions of these documents are likely to be available on the ACCC's website.

Doc No	Details	Author	Party who submitted document	Date			*
				D	M	Y	
10	Statement of [begin c-i-c] [redacted] [end c-i-c] (including attachments).	[begin c-i-c] [redacted] [end c-i-c]	Optus	19	12	2008	*
11	Statement of [begin c-i-c] [redacted] [end c-i-c] (including attachments).	[begin c-i-c] [redacted] [end c-i-c]	Telstra	13	3	2009	*
12	Statement of [begin c-i-c] [redacted] [end c-i-c] (including attachments).	[begin c-i-c] [redacted] [end c-i-c]	Telstra	26	3	2009	*
13	Statement of [begin c-i-c] [redacted] [end c-i-c] (including attachments).	[begin c-i-c] [redacted] [end c-i-c]	Telstra	26	3	2009	*
14	Statement of [begin c-i-c] [redacted] [end c-i-c] (including attachments).	[begin c-i-c] [redacted] [end c-i-c]	Optus	12	12	2008	*
15	Second Statement of [begin c-i-c] [redacted] [end c-i-c] (including attachments)	[begin c-i-c] [redacted] [end c-i-c]	Telstra	8	4	2008	*
16	Statement of [begin c-i-c] [redacted] [end c-i-c] (including attachments).	[begin c-i-c] [redacted] [end c-i-c]	Telstra	12	8	2008	*
17	Statement of [begin c-i-c] [redacted] [end c-i-c] (including attachments).	[begin c-i-c] [redacted] [end c-i-c]	Telstra	12	8	2008	*
18	Statement of [begin c-i-c] [redacted] [end c-i-c], (including attachments).	[begin c-i-c] [redacted] [end c-i-c]	Telstra	12	8	2008	*
19	Statement of [begin c-i-c] [redacted] [end c-i-c] (including attachments).	[begin c-i-c] [redacted] [end c-i-c]	Optus	19	12	2008	*
20	Statement of [begin c-i-c] [redacted] [end c-i-c] (including attachments).	[begin c-i-c] [redacted] [end c-i-c]	Telstra	11	8	2008	*
21	Statement of [begin c-i-c] [redacted] [end c-i-c]	[begin c-i-c] [redacted]	Telstra	12	12	2008	*
22	Statement of [begin c-i-c] [redacted] [end c-i-c] (including attachments).	[begin c-i-c] [redacted] [end c-i-c]	Telstra	8	8	2008	*
23	Statement of [begin c-i-c] [redacted] [end c-i-c] (including attachments).	[begin c-i-c] [redacted] [end c-i-c]	Telstra	18	11	2008	*
24	Statement of [begin c-i-c] [redacted] [end c-i-c] (including attachment).	[begin c-i-c] [redacted] [end c-i-c]	Telstra	19	3	2009	*
25	Statement of [begin c-i-c] [redacted] [end c-i-c] (including attachments).	[begin c-i-c] [redacted] [end c-i-c]	Telstra	11	8	2008	*
26	Australian Commodities	ABARE			6	2008	
27	Building Activity Survey – catalogue No. 8752.	ABS				1993	
28	Internet Activity Survey.	ABS			3	2007	
29	Internet Activity Survey.	ABS			12	2007	
30	Internet Activity Survey.	ABS			6	2008	

Doc No	Details	Author	Party who submitted document	Date		
				D	M	Y
	<i>Year Book Australia: Underutilised Labour.</i> <a href="http://www.abs.gov.au/ausstats/ABS/.nsf/7d12b0f6763c78caca257061001cc588/B3E86B3B58FAFCF4CA2573D20010F230?opendocument">http://www.abs.gov.au/ausstats/ABS/.nsf/7d12b0f6763c78caca257061001cc588/B3E86B3B58FAFCF4CA2573D20010F230?opendocument</a>	ABS	Telstra	2	7	2008
31	<i>Cat No 4102, Australian Social Trends, Data Cube</i>	ABS	Telstra	23	7	2008
32	<i>Discussion Paper: 2003 review of the Draft Statement of Principles for the Regulation of Transmission Revenues.</i>	ACCC				
33	<i>Access Pricing Principles – Telecommunications, a guide</i>	ACCC			7	1997
34	<i>Access Arrangement by Transmission Pipelines Australia, Final Decision.</i>	ACCC			10	1998
35	<i>Draft Statement of Principles for the Regulation of Transmission Revenues</i>	ACCC		27	5	1999
36	<i>Assessment of Telstra's Undertaking for Domestic PSTN Originating and Terminating Access – Final Decision.</i>	ACCC			6	1999 *
37	<i>Telecommunications services— declaration provisions: a guide to the declaration provisions of Part XIC of the Trade Practices Act.</i>	ACCC			7	1999
38	<i>Declaration of local telecommunications services.</i>	ACCC			7	1999
39	<i>NSW and ACT Transmission Network Revenue Caps 1999/00-2003/04 – Decision.</i>	ACCC		25	1	2000
40	<i>A Report on the Assessment of Telstra's Undertaking for the Domestic PSTN Originating and Terminating Access Services.</i>	ACCC			7	2000
41	<i>Melbourne Airport Multi-user Domestic Terminal, New Investment Decision.</i>	ACCC			8	2000
42	<i>Sydney Airports Corporation Ltd Aeronautical Pricing Proposal: Draft Decision.</i>	ACCC			2	2001
43	<i>Pricing of unconditioned local loop services (ULLS), Final Report.</i>	ACCC				2002
44	<i>Pricing of Unconditioned Local Loop Service (ULLS)-Final Report.</i>	ACCC		1	3	2002
45	<i>Decision, Access Undertaking, Australia Rail Track Corporation.</i>	ACCC			5	2002

Doc No	Details	Author	Party who submitted document	Date		
				D	M	Y
46	<i>Draft Greenfield guideline for gas transmission pipelines.</i>	ACCC		6	2002	
47	<i>Final Decision on GasNet Australia Access Arrangement Revisions for the Principal Transmission System.</i>	ACCC		13	11	2002
48	<i>Final Determination for model price terms and conditions of the PSTN, ULLS and LCS services.</i>	ACCC				2003
49	<i>Review of the Draft Statement of Principles for the Regulation of Transmission Revenues, Discussion Paper.</i>	ACCC		28	8	2003
50	<i>Final Determinations for Model Price Terms and Conditions for the PSTN, ULLS and LCS Services.</i>	ACCC			10	2003 *
51	<i>Final Determination—Model Non-Price Terms and Conditions.</i>	ACCC			10	2003
52	<i>Section 152ATA Digital Pay TV Anticipatory Individual Exemption Application lodged by Foxtel Management Pty Limited.</i>	ACCC			12	2003
53	<i>A report on the assessment of the Analogue pay TV Access Undertaking proffered by Telstra Multimedia Limited on 23 December 2003.</i>	ACCC			3	2004
54	<i>Telecommunications Market Indicator Report 2002-03.</i>	ACCC	Telstra		6	2004
55	<i>Media release re: ACCC to appeal Australian Competition Tribunal's decision on the Moomba to Sydney pipeline.</i>	ACCC		4	8	2004
56	<i>Draft Statement of Principles for the Regulation of Electricity Transmission Revenue.</i>	ACCC		18	8	2004
57	<i>Assessment of Telstra's undertakings for PSTN, ULLS and LCS – Draft Decision.</i>	ACCC			10	2004 *
58	<i>Assessment of Telstra's undertakings for PSTN, ULLS and LCS – Final Decision.</i>	ACCC			12	2004 *
59	<i>Decision: Statement of Principles for the Regulation of Electricity Transmission Revenues-Background Paper.</i>	ACCC		8	12	2004
60	<i>Telstra's Undertakings for the Unconditioned Local Loop Service—Discussion Paper.</i>	ACCC			1	2005
61	<i>ACCC Telecommunications reports 2003-04.</i>	ACCC			3	2005

Doc No	Details	Author	Party who submitted document	Date		
				D	M	Y
62	<i>NSW and ACT transmission network revenue cap Energy Australia 2004-05 to 2008-09.</i>	ACCC		27	4	2005
63	<i>NSW and ACT transmission network revenue cap TransGrid 2004-05 to 2008-09.</i>	ACCC		27	4	2005
64	<i>Telecommunications Infrastructure in Australia 2004.</i>	ACCC			6	2005 *
65	<i>Assessment of Telstra's ULLS and LSS Monthly Charge Undertakings—Draft Decision.</i>	ACCC			8	2005 *
66	<i>Assessment of Telstra's ULLS and LSS Monthly Charge Undertakings—Final Decision.</i>	ACCC			12	2005 *
67	<i>A strategic review of the regulation of fixed network services—an ACCC Discussion paper.</i>	ACCC			12	2005
68	<i>Current Cost Accounting Report Relating to Accounting Separation of Telstra for the Half Year to June 2005.</i>	ACCC			12	2005
69	<i>ACCC Telecommunications reports 2004-05.</i>	ACCC			6	2006
70	<i>Declaration inquiry for the ULLS , PSTN OTA and CLLS — Final Determination.</i>	ACCC			7	2006
71	<i>Local Services Review—final decision.</i>	ACCC			7	2006
72	<i>Declaration inquiry for the ULLS , PSTN OTA and CLLS — Final Determination.</i>	ACCC			7	2006
73	<i>Assessment of Telstra's ULLS monthly charge undertaking - Final Decision.</i>	ACCC		1	8	2006
74	<i>Broadband Snapshot</i>	ACCC		1	9	2006
75	<i>Access dispute between Services Sydney Pty Ltd and Sydney Water Corporation , Arbitration Report.</i>	ACCC		19	7	2007
76	<i>Telecommunications Market Indicator Report 2005-2006</i>	ACCC		1	8	2007
77	<i>Telstra Customer Access Network Record Keeping and Reporting Rules - Section 151BU Trade Practices Act 1974.</i>	ACCC			9	2007
78	<i>Media release re: High Court overturns ACCC decision on access to the Moomba to Sydney pipeline.</i>	ACCC		28	10	2007
79	<i>Unconditioned Local Loop Service (ULLS) Final Pricing Principles.</i>	ACCC		1	11	2007

Doc No	Details	Author	Party who submitted document	Date		
				D	M	Y
80	<i>ACCC Infrastructure Record Keeping Rule.</i>	ACCC		12	2007	
81	<i>ULLS Access dispute between Telstra Corporation Limited and Primus Telecommunications Pty Ltd (monthly charges), Statement of Reasons for Final Determination.</i>	ACCC		12	2007	
82	<i>Letter re: Telstra's March 2008 Undertaking for Band 2: Request for further information.</i>	ACCC		28	3	2008
83	<i>Unconditioned Local Loop Service Access Dispute Between Telstra Corporation Limited (access Provider) and PowerTel (access seeker), Statement of reasons for the final decision.</i>	ACCC			3	2008
84	<i>ULLS Access dispute between Optus Network Pty Limited and Telstra Corporation Limited - Final Determination.</i>	ACCC			3	2008
85	<i>Draft decision, interstate Rail Network, Australia Rail Track Corporation.</i>	ACCC			4	2008
86	<i>Pricing Principles for Unconditioned Local Loop Service Amendment Determination 2008 (No.1)</i>	ACCC		1	6	2008
87	<i>Telstra's Access Undertaking for the Unconditioned Local Loop Service - Discussion Paper.</i>	ACCC			6	2008
88	<i>Unconditioned Local Loop Service - Pricing Principles and Indicative Prices.</i>	ACCC			6	2008
89	<i>Australian Rail Track Corporation Access Undertaking – Interstate Rail Network: Final Decision.</i>	ACCC		1	7	2008
90	<i>Media release re: Revised timelines for the provision of advice to the Minister for Climate Change and Water under the Water Act 2007.</i>	ACCC		12	8	2008
91	<i>Final Determination - Model Non-price terms and conditions.</i>	ACCC		1	11	2008
92	<i>Assessment of Telstra's Unconditioned Local Loop Service Band 2 monthly charge undertaking, Draft Decision.</i>	ACCC		1	11	2008
93	<i>Telstra's exemption Application in respect of the HFC network, Final decision.</i>	ACCC		1	11	2008

Doc No	Details	Author	Party who submitted document	Date		
				D	M	Y
94	Letter re: <i>Request for further information: Telstra's Band ULLS undertaking.</i>	ACCC		16	12	2008
95	<i>Analysys Cost Model Discussion Paper.</i>	ACCC		1	12	2008
96	<i>Imputation Testing and Non-Price Terms and Conditions Report relating to the Accounting Separation of Telstra for the September Quarter 2008.</i>	ACCC		1	12	2008
97	<i>Changes in the prices paid for telecommunications services in Australia 2007-2008.</i>	ACCC				2009
98	Letter re: <i>Request for further information: Telstra's Band ULLS undertaking.</i>	ACCC		23	1	2009
99	<i>Communications Infrastructure and Services Availability in Australia 2008.</i>	ACMA				2008
100	<i>Fixed-mobile convergence and fixed-mobile substitution in Australia.</i>	ACMA		.	7	2008
101	<i>Communications Infrastructure and Services Availability in Australia 2006-07.</i>	ACMA				2009
102	<i>Communications Infrastructure and Services Availability in Australia.</i>	ACMA-ACCC				2008
103	<i>Joint Infrastructure Report.</i>	ACMA-ACCC			6	2009
104	<i>Telstra's Access Undertaking for the Unconditioned Local Loop Service – Response to ACCC Discussion Paper Dated June 2008.</i>	Adam Internet et al	Adam Internet et al.		8	2008
105	<i>Telstra's Band 2 Monthly Charge Access Undertaking For The Unconditioned Local Loop Service – Response To ACCC Draft Decision Dated November 2008.</i>	Adam Internet et al	Adam Internet et al	23	12	2008
106	<i>Further submission from Adam Internet Chime and Agile.</i>	Adam Internet et al	Adam Internet et al	19	1	2009
107	<i>December 2008 WACC Review Explanatory Statement.</i>	AER				2008
108	<i>Electricity network distribution service providers: Post-tax revenue model handbook.</i>	AER			6	2008
109	<i>Electricity Transmission and Distribution Network Service Providers, Review of the weighted average cost of capital (WACC) parameters.</i>	AER		1	12	2008

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				D	M	Y
110	<i>Debt and Equity Raising Transaction Costs report to the Australia Competition and Consumer Commission.</i>	Allen Consulting Group				2004
111	<i>Telecoms infrastructure access – sample survey of duct access.</i>	Analysys Mason	Telstra	3	3	2009
112	<i>White Paper: Investment in Next Generation Networks and Wholesale Telecommunications Regulation.</i>	Aron DJ, Crandall RW	Telstra			
113	<i>Sydney Airports Corporation Ltd (2000) 156 FLR 10.</i>	Australian Competition Tribunal				2000
114	<i>Telstra Corporation Limited (No 1 and 2) [2000] ACompT.</i>	Australian Competition Tribunal				2000
115	<i>Re East Australian Pipeline Limited [2004] ACompT 8.</i>	Australian Competition Tribunal	Telstra	8	7	2004
116	<i>Seven Network Limited (No 4) [2004] ACompT 11.</i>	Australian Competition Tribunal	Telstra	23	12	2004
117	<i>Telstra Corporation Limited (No 1) [2006] ACompT 4</i>	Australian Competition Tribunal		2	6	2006
118	<i>Optus Mobile Pty Ltd &amp; Optus Networks Pty Ltd (No 3) [2006] ACompT 8.</i>	Australian Competition Tribunal	Telstra	22	11	2006
119	<i>Vodafone Network Pty Ltd and Vodafone Australia Limited (No 4) [2006] ACompT 1.</i>	Australian Competition Tribunal		11	1	2007
120	<i>Telstra Corporation Limited (No 3) [2007] ACompT 3.</i>	Australian Competition Tribunal		17	5	2007
121	<i>Application by ElectraNet Pty Limited (No 3) [2008] ACompT 3.</i>	Australian Competition Tribunal	Telstra	30	9	2008
122	Letter re: <i>The Treasury Bond Yield as a proxy for the CAPM risk-free rate.</i> <a href="http://www.aer.gov.au/content/index.php/itemId/714612">www.aer.gov.au/content/index.php/itemId/714612</a>	Australian Government Treasury		7	8	2007
123	<i>Telecom 2000: An Exploration of the Long-Term Development of Telecommunications in Australia, Melbourne.</i>	Australian Telecommunications Commission	Telstra	.	12	1975
124	<i>Federal Legal Gazette for the Republic of Austria (English version).</i> <a href="http://www.rtr.at/en/tk/TKG2003/TKG_2003_eng.pdf">http://www.rtr.at/en/tk/TKG2003/TKG_2003_eng.pdf</a>	Austrian government	Telstra	19	8	2003
125	<i>Decision no. 00-1171 of the Autorité de Régulation des Télécommunications dated 31 October 2000 in application of article D. 99-24 of the Post and Telecommunications Code .</i>	Autorité de Régulation des Télécommunications	Telstra	31	10	2000

Doc No	Details	Author	Party who submitted document	Date		
				D	M	Y
126	<i>On the Proper Cost Tests for Natural Monopoly in a Multi-product Industry</i> , American Economic Review.	Baumol WJ				1977
127	<i>The Market Arbitrage of Cash Dividends and Franking Credits</i> , The Economic Record, vol 82 no 258.	Beggs D, Christopher S			9	2006
128	<i>Unbundling of the Local Loop in Austria (final version)</i> . <a href="http://www.rtr.at/de/komp/Fachpublikationen/UnbundlingLocalLoop.pdf">http://www.rtr.at/de/komp/Fachpublikationen/UnbundlingLocalLoop.pdf</a>	Belfin R, Lukanowicz M, Pisjak P, Schnepfleitner R, Schrems A	Telstra		8	1999
129	<i>Capital Market Equilibrium with Restricted Borrowing</i> , The Journal of Business, Volume 45, No 3.	Black F				1972
130	<i>The cost structure of Australian telecommunications</i> , The Economic Record, Volume 239, Issue 77.	Bloch H, Madden G, Coble-Neal G	Telstra			2001
131	<i>Review of the taxation treatment of off-market share buybacks</i> .	Board of Taxation				
132	<i>Report on the Appropriate Weighted Average Cost of Capital for ULLS and SSS Prepared for Telstra</i> .	Bowman RG	Telstra		12	2005 *
133	<i>Report on the Appropriate Weighted Average Cost of Capital for the ULLS Network, Prepared for Telstra</i> .	Bowman RG	Telstra	1	12	2005
134	<i>Report on the Appropriate Weighted Average Cost of Capital for the LSS</i> .	Bowman RG	Telstra		5	2007 *
135	<i>Report on the Appropriate Weighted Average Cost of Capital for the Services provided over the CAN</i> .	Bowman RG	Telstra		5	2007
136	<i>Report on Telstra's Weighted Average Cost of Capital for the CAN-related assets used in the Provision of the ULLS</i> .	Bowman RG	Telstra	30	7	2008
137	<i>A Re-examination of the Historical Equity Premium in Australia Accounting and Finance</i> .	Brailsford T, Handley J, Maheswaran K			3	2008
138	<i>Description of Analytical Cost Model</i> . <a href="http://www.bundesnetzagentur.de/enid/8bb4af2e6084a9c7900aa96d8c21375a,0/Telecoms_Regulation/Analytical_Cost_Model_17h.html#local_loop">http://www.bundesnetzagentur.de/enid/8bb4af2e6084a9c7900aa96d8c21375a,0/Telecoms_Regulation/Analytical_Cost_Model_17h.html#local_loop</a>	Bundesnetzagentur	Telstra	22	6	2005

Doc No	Details	Author	Party who submitted document	Date		
				D	M	Y
139	<i>Regulatory Risk and the Cost of Capital: Determinants and Implications for Rate Regulation</i> , Birkhäuser. <a href="#">Regulatory risk and the cost of ... - Google Book Search</a>	Burkhard P	Telstra			2006
140	<i>Cable and Wireless Submission to the Productivity Commissions Review of the Telecommunications Regulatory Regime.</i>	Cable and Wireless Optus	Optus			2000
141	<i>Accounting for Regulation in UK Utilities</i> , ICAEW.	Carey A., Duncan R, Houston G, Langford K				1994
142	<i>Cox joins the DOCSIS 3.0 party.</i>	CedMagazine.com	Telstra	1	4	2009
143	<i>An Introduction to Efficiency and Productivity Analysis.</i>	Coelli T, Prasada Rao D.S and Battese G	Telstra			2002
144	<i>Consultation on Proposals for Local Loop Unbundling Pricing Methodologies.</i> <a href="http://www.comreg.ie/fileupload/publications/ComReg0856.pdf">http://www.comreg.ie/fileupload/publications/ComReg0856.pdf</a>	Commission for Communications Regulation	Telstra	10	7	2008
145	Article entitled <i>Vodafone Resilient to Credit Crunch.</i>	Communications Day	Telstra	4	2	2009
146	<i>Efficient Operator Benchmark: Report for Optus.</i>	Competition Economists Group	Telstra	1	9	2008
147	<i>Assessing the likely effects of Asymmetric Access Regulation in Australia – Telstra’s Proposed HFC Exemption.</i>	Competition Economists Group		14	10	2008
148	<i>Telstra ULL Price Undertaking.</i>	Competition Economists Group			11	2008
149	<i>CCC Submission on Draft Decision.</i>	Competitive Carriers Coalition		15	12	2008
150	<i>NBN: Analysts industry divided on consortium speculation.</i>	Computerworld	Telstra	23	1	2009
151	<i>Depreciation – Prepared for Mallesons Stephen Jacques</i>	Concept Economics	Telstra		8	2008
152	<i>Telstra’s Weighted Average Cost of Capital for the CAN-related Assets for the provision of ULLS: Comments on Reports of Optus and Ovum and the ACCC draft decision, Prepared for Telstra.</i>	Concept Economics	Telstra	17	3	2009
153	<i>Response to Optus Supplementary Submission on Investment Incentive, Draft Decision on Telstra’s access undertaking for ULLS.</i>	Concept Economics	Telstra	20	3	2009
154	<i>WACC for the Fixed Telecommunications net in Sweden.</i>	Copenhagen Economics		26	10	2007
155	<i>Continuing Tax Reform</i>	Costello, P		9	5	2006

Doc No	Details	Author	Party who submitted document	Date		
				D	M	Y
156	<i>Housing census statistics.</i> <a href="http://www.dst.dk/HomeUK/Statistics/focus_on/focus_on_show.aspx?sci=1009">http://www.dst.dk/HomeUK/Statistics/focus_on/focus_on_show.aspx?sci=1009</a>	Danmarks Statistik	Telstra	1	6	2008
157	<i>Extracts from the Evaluation Report for the Request for Proposals to Roll-out and operate a National Broadband Network for Australia.</i>	DBCDE			1	2009
158	<i>National Broadband Network: Regulatory Reform for 21<sup>st</sup> Century Broadband, Discussion Paper.</i>	DBCDE			4	2009
159	<i>National Broadband Network Policy Brochure.</i>	DBCDE			4	2009
160	<i>Applications of Duality Theory, Frontiers of Quantitative Economics, Volume 2, Intriligator.</i>	Diewert, W. E	Telstra			1974
161	<i>Global Evidence on the Equity Risk Premium, Journal of Applied Corporate Finance, 15 (4).</i>	Dimson E, Marsh P, Staunton M				2003
162	<i>The worldwide equity premium: a smaller puzzle.</i>	Dimson E, Marsh P, Staunton M		7	4	2006
163	<i>FiOS Kills Copper (Or Does It?): Verizon clarifies treatment of POTS old copper.</i>	DSL Reports	Telstra	9	7	2007
164	<i>Vodafone , Verizon Both Eyeing 100Mbps LTE.</i>	DSL Reports	Telstra	20	9	2007
165	<i>Global Telecom Depreciation Survey.</i>	Ernst & Young			10	2002
166	<i>Institutional Aspects of Climate Change Policies (forthcoming in The Australian Journal of Agricultural and Resource Economics).</i>	Ergas H	Telstra			2009
167	<i>Time Consistency In Regulatory Decision-Making (forthcoming in The Review of Network Economics).</i>	Ergas H	Telstra			2009
168	<i>In the Dark , The Review (supplement to the Australian Financial Review).</i>	Ergas H	Telstra	9	2	2009
169	<i>Statement of Henry Ergas (including attachments).</i>	Ergas H	Telstra		4	2009 *
170	<i>Expert Report on Recovery of ULLS Specific Costs, CRA International.</i>	Ergas, H.			5	2005 *
171	<i>Expert Report on Access Deficit, CRA International.</i>	Ergas, H.			5	2005
172	<i>Pricing methodologies for Unbundled Access to the Local Loop.</i>	Europe Economics	Optus			2004

Doc No	Details	Author	Party who submitted document	Date			*
				D	M	Y	
173	<i>Pricing Principles for the Unconditioned Local Loop Service (ULLS) in Australia , The Conceptual Framework, Final Report for Optus.</i>	Europe Economics	Optus	26	3	2009	*
174	<i>Commission Communication on interconnection pricing in a liberalized telecommunications market (98/C 84/03) .</i>	European Commission	Telstra	8	1	1998	
175	<i>Federal-State Joint Board on Unversal Services, CC Docket No. 96-45.</i>	Federal Communications Commission					
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183	<i>Geographically averaged rates in the context of Local Loop Unbundling (version 2.1).</i> <a href="http://www.rtr.at/de/komp/Fachpublikationen/GeographicallyLocalLoop.pdf">http://www.rtr.at/de/komp/Fachpublikationen/GeographicallyLocalLoop.pdf</a>	Groebel A, Schnepfleitner R	Telstra	1	8	2000	
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187	<i>Verizon's FiOS: A Smart Bet or a Big Mistake?</i> , New York Times.	Hansell S	Telstra	19	8	2008
188	<i>Use of the TEA model in ULLS costing and pricing.</i>	Harris RG	Telstra	21	12	2007
189	<i>An Assessment of Telstra's TEA Cost Model for Use in the Costing and Pricing of Unconditioned Local Loop Services (ULLS).</i>	Harris RG, Fitzsimmons W	Telstra	4	11	2008
190	<i>Comparison of household saving ratios: Euro area/United States/Japan.</i> <a href="http://www.oecd.org/dataoecd/53/48/32023442.pdf">http://www.oecd.org/dataoecd/53/48/32023442.pdf</a>	Harvey R	Telstra		6	2004
191	<i>Australia Risk Premium</i> , Capital Research	Hathaway N			1	2005
192	Investor Presentation <i>SingTel: Asia's Leading Communications Company.</i>	Heng F	Telstra	8	1	2008
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194	<i>Full Year 2007 Annual Results.</i>	iiNet				2007
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200	<i>Commentary on the use of international benchmarking in setting interconnection rates, A report from the Ingenious Consulting Network.</i>	Ingenius Consulting Network	Telstra	1	12	2008
201	<i>Response to Ovum's report 'Telstra ULLS Undertaking – ULLS International Benchmarking'.</i>	Ingenius Consulting Network	Telstra	1	3	2009
202	Press release entitled <i>Forecast 2008-2009.</i>	International Copper Study Group	Telstra	8	10	2008
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211	<i>Review of the TEA model – A report prepared for Competitive Carriers Coalition.</i>	Marsden Jacob Associates	CCC	12	8	2008
212	<i>Comments on Discussion Paper—Telstra's Undertaking in Relation to the Unconditioned Local Loop Service.</i>	Marsden Jacob Associates and Europe Economics		3	5	2006
213	Paper entitled <i>General Data.</i>	Ministry of Housing, Spatial Planning and the Environment ,				
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227	<i>Glossary: Consumer Price Indices.</i> <a href="http://stats.oecd.org/mei/default.asp?lang=e&amp;subject=8">http://stats.oecd.org/mei/default.asp?lang=e&amp;subject=8</a>	OECD	Telstra			
228	<i>Glossary: Unemployment.</i> <a href="http://stats.oecd.org/mei/default.asp?lang=e&amp;subject=10">http://stats.oecd.org/mei/default.asp?lang=e&amp;subject=10</a>	OECD	Telstra			
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233	<i>Developments in Local Loop Unbundling</i>	OECD	Telstra	10	9	2003
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235	<i>Glossary: Gini Index.</i> <a href="http://stats.oecd.org/glossary/detail.asp?ID=4842">http://stats.oecd.org/glossary/detail.asp?ID=4842</a>	OECD	Telstra	16	2	2006
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240	<i>The value of imputation tax credits, Update 2004.</i>	Officer R, Hathaway N			11	2004
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249	<i>Telstra's Access Undertaking for the Unconditioned Local Loop Service: Response to Draft Decision.</i>	Optus	Optus	1	12	2008	*
250	<i>Supplementary Submission to TEA costing model: A response to the ACCC's request for information.</i>	Optus	Optus		1	2009	*
251	<i>Letter re: Telstra Band 2 Undertaking – Optus 'New Approach' to Confidentiality – Different Versions of Optus Submissions.</i>	Optus	Optus	28	1	2009	*
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258	<i>Supplementary Submission to the TEA model costing: A response to the ACCC's request for further information</i>	Optus	Optus	23	3	2009	*
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263	<i>Review of the network design and engineering rules of the Telstra Efficient Access Cost Model: A Report to the ACCC.</i>	Ovum	Ovum	6	8	2008	
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265	<i>Review of the operability of the Telstra Efficient Access cost model.</i>	Ovum	Ovum	6	8	2008	*
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268	<i>Telstra ULLS Undertaking – ULLS International Benchmarking.</i>	Ovum	Ovum	26	2	2009	*
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275	Letter re: <i>Comments on NERA Report concerning the Commonwealth Government bond market.</i> <a href="http://www.aer.gov.au/content/index.php/itemId/714612">www.aer.gov.au/content/index.php/itemId/714612</a>	Reserve Bank of Australia		9	8	2007
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277	<i>2007 Annual Report.</i> <a href="http://www.servicestream.com.au/upload/2007-09-24%20Service%20Stream%2007%20Annual%20Report%20FINAL.pdf">http://www.servicestream.com.au/upload/2007-09-24%20Service%20Stream%2007%20Annual%20Report%20FINAL.pdf</a> .	Servicestream				
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279	<i>The reliability of empirical estimates.</i>	SFG		15	12	2008
280	<i>The Theory of Natural Monopoly,</i> Cambridge, UK, Cambridge University Press.	Sharkey WW	Telstra			1982
281	<i>Description of Silcar Telepower operations.</i> <a href="http://www.silcar.com.au/html/OP_E_TP.htm">http://www.silcar.com.au/html/OP_E_TP.htm</a>	Silcar Telepower				
282	<i>Optical Access Networks.</i>	Silva H	Telstra	1	3	2005
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286	<i>The Worldwide Equity Premium: A smaller Puzzle, Revised.</i>	Staunton M		14	4	2009
287	<i>Verizon (FiOS) begins overbuilding AT&amp;T (U-verse) in Texas , OneTrak, Real Time Communications Intelligence.</i>	Stump M		9	6	2008
288	<i>Sydney Airport Draft Aeronautical Pricing Proposal.</i>	Sydney Airports Corporation Limited			12	1999
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290	<i>Comcast broadens reach of DOCSIS 3.0, 50Mbps connections.</i>	Technica	Telstra	1	10	2008
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292	<i>Annual Report 1995.</i>	Telstra	Telstra			
293	<i>Annual Report 2000.</i>	Telstra	Telstra			
294	<i>Annual Report 2001/02.</i>	Telstra	Telstra			
295	<i>Submission in support of the Undertaking for Domestic PSTN Originating and Terminating Access – Part A: Economic Submission.</i>	Telstra		6	5	1998
296	<i>Productivity Commission's Draft Report on Telecommunications Competition Regulation.</i>	Telstra		1	7	2001
297	<i>Telstra's detailed submission in support of its PSTN OTA and LCS undertaking dated 9 January 2003.</i>	Telstra		31	7	2003
298	<i>Telstra's Submission in Support of the ULLS Connection Charges Undertaking dated 13 December 2004.</i>	Telstra			2	2005 *
299	<i>Submission in Response to the Australian Competition and Consumer Commission's Discussion Paper in Respect of ULLS Received March 2005.</i>	Telstra		27	5	2005 *
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303	<i>Submission to the Australian Competition and Consumer Commission—Response to the ACCC proposal—A strategic review of the regulation of fixed network services.</i>	Telstra	Telstra		2	2006
304	<i>Telstra Financial Reports.</i>	Telstra		30	6	2006
305	<i>Telstra's submission in response to the Local Services Review.</i>	Telstra			4	2006
306	<i>Service Quality Strategy.</i>	Telstra		23	6	2006
307	<i>Submission to the Australian Competition and Consumer Commission—Response to the ACCC position paper on a strategic review of the regulation of fixed network services.</i>	Telstra	Telstra		7	2006
308	<i>Media Release: Telstra selects three service industry leaders.</i>	Telstra		3	9	2007
309	<i>Telstra's Efficient Access Model (TEA) Overview.</i>	Telstra	Telstra	21	12	2007
310	<i>Letter re: Telstra's March 2008 Undertaking for Band 2: Request for further information.</i>	Telstra	Telstra	7	1	2008
311	<i>Telstra's Efficient Access Model, Model Documentation.</i>	Telstra	Telstra	3	3	2008
312	<i>Telstra's Efficient Access Model, User Guide.</i>	Telstra	Telstra	3	3	2008
313	<i>Access Network Modelling Costing information.</i>	Telstra	Telstra	3	3	2008
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315	<i>Telstra's ULLS Undertaking is Reasonable.</i>	Telstra	Telstra	4	4	2008
316	<i>Factor Calculation (Microsoft Excel spreadsheet).</i>	Telstra	Telstra	11	4	2008
317	<i>Weighted Average Cost of Capital.</i>	Telstra	Telstra	4	4	2008
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319	<i>Operations and Maintenance and Indirect Cost Factor Study.</i>	Telstra	Telstra	7	4	2008
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322	<i>Letter re: Telstra's ULLS Undertaking.</i>	Telstra	Telstra	15	7	2008
323	<i>Our Customer Terms – Basic telephone service section, Part A – General, 19 July 2008.</i> <a href="http://telstra.com.au/customerterms/docs/fixed_general.pdf">http://telstra.com.au/customerterms/docs/fixed_general.pdf</a>	Telstra		19	7	2008
324	<i>Telstra's Ordinary Access Undertaking for the Unconditioned Local Loop Service: Response to the ACCC's Discussion Paper dated June 2008.</i>	Telstra	Telstra	12	8	2008
325	<i>Letter re: Lightning Protection Costs in the TEA model.</i>	Telstra	Telstra	14	8	2008 *
326	<i>Letter re: Telstra's ULLS Undertaking and Telstra Efficient Access (TEA) model.</i>	Telstra	Telstra	6	8	2008
327	<i>Letter re: Telstra's ULLS Undertaking and Telstra Efficient Access (TEA) Model.</i>	Telstra	Telstra	6	8	2008
328	<i>Telstra's Efficient Access Model, Model Documentation</i>	Telstra	Telstra	6	8	2008
329	<i>Telstra's Efficient Access Model, Model Documentation: Addendum.</i>	Telstra	Telstra	6	8	2008
330	<i>Modifications included in TEA Version 1.1.</i>	Telstra	Telstra	6	8	2008
331	<i>Measure of TEA Efficiency</i>	Telstra	Telstra	8	9	2008
332	<i>Telstra's Ordinary Access Undertaking for the Unconditioned Local Loop Service: Modifications in v1.2 of the TEA model.</i>	Telstra	Telstra	10	9	2008
333	<i>Measure of TEA Efficiency.</i>	Telstra	Telstra	8	9	2008
334	<i>Telstra's Ordinary Access Undertaking for the Unconditioned Local Loop Service: Response to Access Seeker Submissions.</i>	Telstra	Telstra	18	11	2008
335	<i>Letter re: Telstra's Band 2 ULLS undertaking.</i>	Telstra	Telstra	18	11	2008 *
336	<i>Telstra's 2008 ULLS undertaking – Use/Disclosure of Optus material file in MTAS dispute.</i>	Telstra	Telstra	18	11	2008
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339	<i>CANRKR Masterfile.</i>	Telstra		1	12	2008	*
340	<i>Letter re: Telstra's Band 2 ULLS undertaking</i>	Telstra	Telstra	2	12	2008	
341	<i>Telstra's Band 2 ULLS Undertaking – Submissions of Draft Decision issued 13 November 2008 – Request for extension.</i>	Telstra	Telstra	5	12	2008	
342	<i>Letter re: Telstra's Band 2 ULLS undertaking.</i>	Telstra	Telstra	10	12	2008	
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344	<i>Letter re: Telstra's Band 2 ULLS undertaking.</i>	Telstra	Telstra	23	12	2008	*
345	<i>Telstra's Ordinary Access Undertaking for the Unconditioned Local Loop Service: Response to the ACCC's Draft Decision.</i>	Telstra	Telstra	23	12	2008	
346	<i>Letter re: Telstra's Band 2 ULLS undertaking.</i>	Telstra	Telstra	2	12	2008	
347	<i>Telstra's Band 2 ULLS Undertaking – Confidentiality claim on the TEA model route optimisation process report and witness statement.</i>	Telstra	Telstra	13	1	2009	
348	<i>Telstra's 2008 ULLS undertaking – Use/Disclosure of Optus material file in MTAS dispute.</i>	Telstra	Telstra	14	1	2009	
349	<i>Letter re: Telstra's Band 2 ULLS Undertaking – Optus' 'New Approach' to Confidentiality.</i>	Telstra	Telstra	30	1	2009	
350	<i>Letter re: Telstra Band 2 ULLS Undertaking – NERA Report.</i>	Telstra	Telstra	19	1	2009	
351	<i>Letter re: Telstra's ULLS Undertaking and Telstra Efficient Access (TEA) Model.</i>	Telstra	Telstra	22	1	2009	
352	<i>Letter re: TEA version 1.3</i>	Telstra	Telstra	8	1	2009	
353	<i>Letter re Telstra's ULLS Undertaking and Telstra Efficient Access (TEA) Model</i>	Telstra	Telstra	22	1	2009	

Doc No	Details	Author	Party who submitted document	Date		
				D	M	Y
354	Letter re: <i>Telstra's Band 2 ULLS Undertaking – Confidentiality Claim on TEA Model Route Optimisation Process report and witness statement.</i>	Telstra	Telstra	13	1	2009
355	<i>Factor Calculation</i> (Microsoft Excel spreadsheet).	Telstra	Telstra	18	2	2009
356	Letter re: <i>Telstra's ULLS Undertaking and Telstra Efficient Access (TEA) Model.</i>	Telstra	Telstra	4	2	2009 *
357	Letter re: <i>Telstra's ULLS Undertaking Telstra Efficient Access (TEA) Model.</i>	Telstra	Telstra	4	2	2009
358	<i>Telstra's Band 2 ULLS Undertaking – Request for access to NERA Model.</i>	Telstra	Telstra	26	2	2009
359	Letter re: <i>Queries on ULLS Undertaking Draft Decision.</i>	Telstra	Telstra	17	2	2009
360	Letter re: <i>Cost Factor Study: TEA model v1.3.</i>	Telstra	Telstra	18	2	2009
361	Letter Re: <i>Telstra's ULLS Undertaking and Telstra Efficient Access (TEA) Model</i>	Telstra	Telstra	4	2	2009
362	<i>Response to ACCC's request for further information on Telstra's Band 2 ULLS undertaking made pursuant to s152BT of Trade Practices Act dated 23 January 2008.</i>	Telstra	Telstra	13	3	2009
363	<i>Supplementary Submission: Competing infrastructure in Band 2 area: the implications of SingTel Optus HFC network for ULLS pricing.</i>	Telstra	Telstra	20	3	2009 *
364	<i>Response to ACCC's request for further information on Telstra's Band 2 ULLS undertaking made pursuant to s152BT of Trade Practices Act dated 16 December 2008.</i>	Telstra	Telstra	13	3	2009 *
365	<i>Supplementary Submission – Competing infrastructure in Band 2 areas: the implications of SingTel Optus' HFC network for ULLS pricing.</i>	Telstra	Telstra	20	3	2009 *
366	<i>Telstra's Ordinary Access Undertaking for the Unconditioned Local Loop Service: Materiality testing (with attachments).</i>	Telstra	Telstra	23	3	2009
367	Letter re: <i>Telstra's Band 2 ULLS Undertaking – Further submissions.</i>	Telstra	Telstra	24	3	2009

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368	<i>Telstra's Band 2 ULLS Undertaking – Further Submissions.</i>	Telstra	Telstra	24	3	2009
369	<i>Letter re: Telstra's Band 2 ULLS Undertaking – Trench Sharing in New Estates</i>	Telstra	Telstra	30	3	2009
370	<i>Telstra's Ordinary Access Undertaking for the Unconditioned Local Loop Service (Band 2): Response to Optus and iiNet Submissions on Profitability Analysis.</i>	Telstra	Telstra	11	3	2009
371	<i>Telstra's Band 2 ULLS Undertaking – Request for access to NERA Model.</i>	Telstra	Telstra	23	3	2009
372	<i>Telstra's Ordinary Access Undertaking for the Unconditioned Local Loop Service: Materiality Testing, Draft Version.</i>	Telstra	Telstra	23	3	2009
373	<i>Telstra's Ordinary Access Undertaking for ULLS – The impact of Distribution Area Design on Customer access network investment costs.</i>	Telstra	Telstra	9	3	2009
374	<i>Measure of TEA Model Efficiency: ULLS Band 2 - version 2.</i>	Telstra	Telstra	9	3	2009
375	<i>Telstra's Ordinary Access Undertaking for the Unconditioned Local Loop Service: Response to Ovum Advisory Notes.</i>	Telstra	Telstra	8	4	2009
376	<i>Summary of Telstra's Submission to the ACCC</i>	Telstra	Telstra	17	4	2009 *
377	<i>Telstra's Ordinary Access Undertaking for the Unconditioned Local Loop Service: Response to Access Seeker Submissions on the ACCC's draft decision.</i>	Telstra	Telstra	1	4	2009 *
378	<i>Letter re: Telstra's Band 2 ULLS Undertaking – Response to Access Seeker Submission on the ACCC's Draft Decision.</i>	Telstra	Telstra	1	4	2009 *
379	<i>Letter re: Telstra's Band 2 ULLS Undertaking – Responses to Ovum and Europe Economics Report.</i>	Telstra	Telstra	8	4	2009
380	<i>Letter re: Telstra's Band 2 ULLS Undertaking – Responses to Ovum and Europe Economics Report.</i>	Telstra	Telstra	8	4	2009

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381	Letter re: <i>Telstra's Band 2 ULLS Undertaking – Responses to Ovum and Europe Economics Report.</i>	Telstra	Telstra	9	4	2009
382	Letter re: <i>Telstra's Band 2 ULLS Undertaking – Responses to Ovum and Europe Economics Report.</i>	Telstra	Telstra	9	4	2009
383	Letter re: <i>Telstra's Band 2 ULLS Undertaking – Response to Europe Economics Report.</i>	Telstra	Telstra	16	4	2009
384	Letter re: <i>Telstra's Band 2 ULLS Undertaking – Summary of Submissions.</i>	Telstra	Telstra	17	4	2009
385	Letter re: <i>Telstra's Band 2 ULLS Undertaking.</i>	Telstra	Telstra	16	4	2009
386	<i>Cost of Capital and Capital Budgeting Practice in Australia.</i>	Truong G, Partington G, Peat M				2006
387	<i>Competitive Neutrality-Regulating Interconnection Disputes In the Transition to Competition.</i>	Tye WB			7	2002
388	Tables entitled 'S049 Dwelling type and accommodation type by tenure (households and dwellings)' and 'UV51 Number of people living in households'. <a href="http://www.statistics.gov.uk/StatBase/Expodata/Spreadsheets/D7520.xls">http://www.statistics.gov.uk/StatBase/Expodata/Spreadsheets/D7520.xls</a>	UK Statistics Authority	Telstra			2008
389	<i>Voice , Video and Broadband: The Changing Competitive Landscape and Its Impact on Consumers: Report.</i>	United States Department of Justice	Telstra	1	11	2008
390	<i>Submission in response to Assessment of Telstra's Unconditioned Local Loop Service Band 2 monthly charge undertaking- Draft Decision November 2008 and Draft MTAS Pricing Principles Determination November 2008.</i>	Unwired	Unwired	16	1	2009
391	Project description for Visionstream project entitled <i>Nextgen Build &amp; O&amp;M.</i> <a href="http://www2.visionstream.com.au/projectlistingtemplate.php?id=42">http://www2.visionstream.com.au/projectlistingtemplate.php?id=42</a>	Visionstream	Telstra			*
392	Project description for Visionstream project entitled <i>Reef Networks.</i> <a href="http://www2.visionstream.com.au/projectlistingtemplate.php?id=45">http://www2.visionstream.com.au/projectlistingtemplate.php?id=45</a>	Visionstream	Telstra			

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393	Project description for Visionstream project entitled <i>DSLAM</i> . <a href="http://www2.visionstream.com.au/projectlistingtemplate.php?id=41">http://www2.visionstream.com.au/projectlistingtemplate.php?id=41</a>	Visionstream	Telstra			
394	<i>Comcast Details Its First DOCSIS 3.0 Deployment</i> .	Voice of Network Convergence		4	4	2008
395	<i>Costing Principles</i> .	Westnet Rail	Telstra		9	2007
396	<i>The Economics of Next Generation Access – Final Report</i> .	Wik Consult	Optus	10	9	2008
397	<i>Mobile Termination Cost Model for Australia</i> .	Wik-Consult		1	1	2007
398	<i>More disturbing numbers for Telcos , TelephonyOnline</i> .	Wilson S	Telstra	13	5	2008
399	<i>Clearwire , Xohm Combo Officially Cleared</i> .	Wireless Week	Telstra	1	12	2008
400	<i>Australian Telecommunication Industry Survey – Volume 5</i> .				3	2005
401	<i>Copper Price Update</i> .			17	11	2008
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403	<i>Bloomberg Data Service</i> .			16	4	2009
405	<i>Bloomberg Data Service</i> .			17	4	2009
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410	<a href="http://www.scb.se/templates/Publication_193443.asp">http://www.scb.se/templates/Publication_193443.asp</a>		Telstra			
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412	<a href="http://www.scb.se/templates/tableOrChart_237370.asp">http://www.scb.se/templates/tableOrChart_237370.asp</a>		Telstra			
413	<a href="http://www.rba.gov.au/MonetaryPolicy/statement_conduct_mp_4_06122007.html">http://www.rba.gov.au/MonetaryPolicy/statement_conduct_mp_4_06122007.html</a>					
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415	<a href="http://telstra.com.au/moving_home/newhome.cfm">http://telstra.com.au/moving_home/newhome.cfm</a>			30	9	2008