



Australian
Competition &
Consumer
Commission

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

Draft Decision

Public Version

November 2008



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Abbreviations

2005 Undertakings	<i>Telstra, Telstra Access Undertaking to the Australian Competition and Consumer Commission under Division 5 of Part XIC of the Trade Practices Act 1974 (Cth), ULLS Monthly Charges 2006-2007, 23 December 2005.</i>
	<i>Telstra, Telstra Access Undertaking to the Australian Competition and Consumer Commission under Division 5 of Part XIC of the Trade Practices Act 1974 (Cth), ULLS Monthly Charges 2007-2008, 23 December 2005.</i>
2006 Final Decision	<i>ACCC, Assessment of Telstra's ULLS monthly charge undertaking – Final Decision, August 2006.</i>
2007 Undertaking	<i>Telstra, Telstra Ordinary Access Undertaking to the Australian Competition and Consumer Commission under Division 5 of Part XIC of the Trade Practices Act 1974 (Cth), 21 December 2007.</i>
2008 Undertaking	<i>Telstra, Telstra Ordinary Access Undertaking to the Australian Competition and Consumer Commission under Division 5 of Part XIC of the Trade Practices Act 1974 (Cth), 3 March 2008.</i>
2008 Pricing Principles	<i>ACCC, Unconditioned Local Loop Service Pricing Principles and Indicative Prices, June 2008.</i>
2008 Discussion Paper	<i>ACCC, Telstra's Access Undertaking for the Unconditioned Local Loop Service – Discussion Paper, June 2008.</i>
AAPT	AAPT Limited
ACCC	Australian Competition and Consumer Commission
ACT	Australian Competition Tribunal
CAM	Customer access module
CAN	Customer access network
CAPM	Capital asset pricing model
CCC	Competitive Carriers Coalition
CMUX	Customer multiplexer

COLR	Carrier of last resort
CRAI	CRA International
DA	Distribution area
DSL	Digital subscriber line
ERP	Equity risk premium
ESA	Exchange service area
FTTN	Fibre to the node
IDD	International Direct Dial
IEN	Inter-exchange network
IRIM	Integrated remote integrated multiplexer
LAN	Local area network
LAS	Local access switch
LCS	Local Carriage Service
LSS	Line sharing service
LTIE	Long Term Interests of End-users
Macquarie	Macquarie Telecom Pty Ltd
MJA	Marsden Jacob Associates
MJAEE	Marsden Jacob Associates and Europe Economics
MRP	Market risk premium
NECG	Network Economics Consulting Group
n/e/r/a	NERA Economic Consulting
NTP	Network termination point

O&M costs	Operational and maintenance costs
Ofcom	The Office of Communications (UK)
Optus	SingTel Optus Pty Ltd
PIE	PSTN Ingress and Egress model
POI	Point of interconnection
Primus	Primus Telecommunications Pty Ltd
PSTN	Public Switched Telephone Network
PSTN O/T	PSTN Originating and Terminating Access Services
RAF	Regulatory accounting framework
RBOC	Regional Bell Operating Company
RIM	Remote integrated multiplexer
RSS/RSU	Remote switching stage/ remote switching unit
SAOs	Standard Access Obligations
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
Telstra	Telstra Corporation Limited
Telstra Service	Service of a particular technical attribute as specified by Telstra in the 2008?? Undertaking
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

Glossary

Access Provider	Carrier or carriage service provider who supplies declared services to itself or other persons — see 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 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, *Access Pricing Principles – Telecommunications: A guide*, July 1997, and Australian Competition and Consumer Commission, *Unconditioned Local Loop Service, Pricing Principles and Indicative Prices*, June 2008.

Executive Summary

This document sets out the Australian Competition and Consumer Commission's (ACCC's) draft decision on Telstra's undertaking in respect of the unconditioned local loop service (ULLS) in band 2 areas.

On 3 March 2008, Telstra Corporation Limited (Telstra) lodged an access undertaking with the ACCC (2008 Undertaking). The 2008 Undertaking specifies certain terms and conditions under which Telstra undertakes to meet its standard access obligations (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 proposes a monthly charge of \$30 for Band 2 exchange service areas (ESAs). Monthly charges for the ULLS in areas other than Band 2 ESAs, ULLS connection charges and charges for operational aspects of the service are not included in the 2008 Undertaking.

In support of its 2008 Undertaking, Telstra submitted the Telstra Efficient Access Model (TEA Model). Telstra's 2008 ULLS Undertaking price of \$30 (Proposed Monthly Charge) is below version 1.2 of the TEA Model's estimate of \$47.86 in Band 2 ESAs. Telstra submits that the Proposed Monthly Charge of \$30 is limited to the term of the 2008 Undertaking. After the term of the undertaking, Telstra submits that ULLS prices can be increased to TSLRIC+ (estimated as \$47.86 by the TEA Model) either through commercial negotiation, arbitration or Telstra lodging another undertaking.¹

The ACCC released a discussion paper on Telstra's 2008 Undertaking on 4 June 2008 (the 2008 Discussion Paper), and has received several submissions from interested parties in response. Public versions of submissions in response to the 2008 Discussion Paper are available on the ACCC website.

Under Part XIC of the *Trade Practices Act 1974 (Cth)* (the TPA), the ACCC must consider undertakings submitted to it in relation to the proposed supply of declared services, and decide to accept or reject them. The statutory criteria that the ACCC is required to have regard to in deciding whether to accept or reject an undertaking is set out in section 4.2 of this draft decision. Based on the ACCC's assessment of the statutory criteria, the ACCC's draft decision is to reject the 2008 Undertaking.

In assessing the 2008 Undertaking, other than the statutory criteria, the ACCC has had regard to various information, including:

- TEA model underlying assumptions; and
- access prices for the ULLS internationally.

The ACCC's preliminary view is that, overall, the TEA model cost assumptions would lead to an over-estimation of the costs of providing the ULLS.

¹ Telstra Corporation Limited, *Telstra's ULLS Undertaking is Reasonable*, 4 April 2008, p. 4.

As a result, the monthly charge of \$47.86 which is produced by the TEA Model using Telstra's default input parameters is, in the ACCC's preliminary view, likely to represent an access price that is higher than that required by an efficient operator to recover costs of providing the ULLS in Australia.

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.² The ACCC has found that when the TEA model is run with other parameter values, the resulting range of monthly charge estimates are significantly less than \$30. This leaves the ACCC with significant doubt as to whether the Proposed Monthly Charge of \$30 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, when all submissions are taken into account, to be a reasonable price range.

The ACCC also considers there is significant discrepancy between the Proposed Monthly Charge and international benchmarks which indicates the Proposed Monthly Charge is higher than that required by an efficient operator in other comparable countries to recover costs of supplying an ULLS.

Submissions

The ACCC seeks comment from interested parties on this draft decision and the matters set out and relied upon in reaching its draft decision. The ACCC seeks submissions on this draft decision by **12 December 2008**.

Please forward written submissions to:

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Any queries on this draft decision should be directed to Kim Huynh on 03 9290 1960 or Heather Ridley on 03 9290 1983 in the first instance.

Once all submissions to this draft decision have been received, the ACCC will, after consideration of these submissions, make a final decision.

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

1 Introduction

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

On 3 March 2008, Telstra lodged the 2008 Undertaking with the ACCC. The 2008 Undertaking was lodged at the same time that Telstra withdrew its ULLS undertaking that had been lodged on 21 December 2007. The 2008 Undertaking specifies certain terms and conditions upon which Telstra undertakes to meet its SAOs for the supply of the ULLS and proposes a monthly charge of \$30 payable by access seekers for the ULLS in Band 2 ESAs. If accepted, the 2008 Undertaking will cover the period from the date of the ACCC's acceptance of the undertaking to 31 December 2010. The 2008 Undertaking does not include monthly charges for the ULLS in areas other than Band 2 ESAs, set a once-off connection charge, or a charge for operational aspects involved in providing the service and contains limited non-price terms and conditions.

In support of its 2008 Undertaking, Telstra submitted version 1.0 of the TEA model and accompanying documentation. Further, on 6 August 2008, Telstra submitted version 1.1 of the TEA model and revised documentation to the ACCC. On 10 September 2008, Telstra submitted version 1.2 of the TEA model and additional documentation to the ACCC.

In response to the 2008 Discussion Paper on the 2008 Undertaking, the ACCC received submissions from:

- Telstra
- Marsden Jacob Associates (MJA) on behalf of the Competitive Carriers Coalition (CCC)
- SingTel Optus Pty Limited (Optus)
- Adam Internet Pty Ltd , iiNet Limited/Chime Communications Pty Ltd and Agile Pty Ltd/Internode Pty Ltd (Adam Internet et al).
- Network Strategies Limited (Network Strategies) submitted on behalf of Optus.

For this process, the ACCC commissioned Ovum to prepare three reports on the TEA model (version 1.0), namely:

- *Review of the operability of the Telstra Efficient Access cost model, A report to the ACCC ('Operability Review Report');*
- *Review of the economic principles, capital cost and expense calculations of the Telstra Efficient Access cost model, A report to the ACCC ('Economic Review Report');* and
- *Review of the network design and engineering rules of the Telstra Efficient Access cost model, A report to the ACCC ('Engineering Review Report').*

Public versions of the submissions received by the ACCC, in addition to the Ovum reports are available on the ACCC 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.³

Once a service is declared, carriers and carriage service providers (CSPs) supplying the declared service to themselves or others are subject to the SAOs. These obligations constrain the manner in which those 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 supplying the declared service to themselves or others.

The terms and conditions upon which a carrier or CSP is to comply with 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. It can deal with any matter relating to access by the service provider to the declared service.⁴

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 undertaking becomes binding on the carrier or CSP. 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 accepted undertaking.⁵

2.2 The declared service

2.2.1 Unconditioned Local Loop Service

The current ULLS declaration generally describes the provisioning 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 customer access module (CAM).

³ ACCC, *Declaration inquiry for the ULLS, PSTN OTA, CLLS*, Final Determination, July 2006.

⁴ *Trade Practices Act 1974* (Cth), subsection 152CP(2).

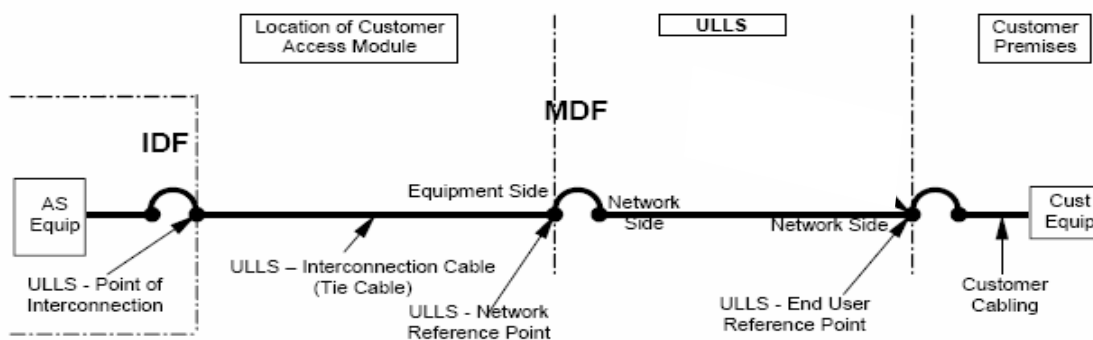
⁵ *Trade Practices Act 1974* (Cth), subsection 152CQ(5).

As shown in **figure 2.2.1**, ULLS interconnection is typically on the customer side of the intermediate distribution frame (IDF) in a Telstra local exchange. In other words, access seekers generally install their own interconnection equipment—typically a DSLAM—in an exchange which is ‘associated with’ a Telstra CAM.⁶

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 with 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 voice over IP and DSL technologies. Possible services include high speed Internet access, ‘tele-working’, distance learning, video-on-demand, remote local area network (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 follows a series of decisions made by the ACCC since 2003 on ULLS monthly charges.

⁶ 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.

On 9 January 2003 Telstra lodged an undertaking with the ACCC in relation to the supply of the ULLS (2003 Undertaking).

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 the 2003 Undertaking by way of submitting a replacement undertaking on 14 November 2003 (2003 Replacement Undertaking). 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 on 13 December 2004 (2004 Undertaking). 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.

On 23 December 2005, Telstra lodged ULLS monthly charge undertaking proposing a single (average) price of \$30 per month (2005 Undertaking). In August 2006, the ACCC rejected Telstra's 2005 Undertaking.⁷ 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.⁸

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 over 12 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.⁹ This determination includes indicative prices on ULLS monthly charges to apply until July 2009.

⁷ ACCC, *Assessment of Telstra's ULLS monthly charge undertaking - final decision*, August 2006.

⁸ *Telstra Corporation Limited (No 3)* [2007] ACompT 3 (17 May 2007).

⁹ ACCC, *Pricing Principles for Unconditioned Local Loop Service Amendment Determination 2008 (No.1)*.

3 Summary of the Telstra ULLS Undertaking

This section summarises 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.¹⁰

The 2008 Undertaking only deals with the monthly charge for Band 2 ESAs, which it proposes to set at \$30. Monthly charges for the ULLS in areas other than Band 2 ESAs, ULLS connection charges and charges for operational aspects of the service are not included in the 2008 Undertaking.

The term 'Band' has developed by Telstra in regards to different geographic areas within Australia, and Telstra state that a Band 2 area has more than 108.4 services in operation in a square kilometre area, which is not a Band 1 area.¹¹ The ACCC notes that this generally equates to metropolitan areas, outside of the central business districts of NSW, Victoria, South Australia Queensland and Western Australia and covers 67 per cent of services in operation (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.¹²

The 2008 Undertaking price of \$30 is below version 1.2 of the TEA model's estimate of \$47.86 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:

¹⁰ Telstra, *3 March 2008 Ordinary Access Undertaking for the Telstra Unconditioned Local Loop Service, Attachment Part B – Service Description*, p. 13.

¹¹ Telstra, *Service Quality Strategy*, 23 June 2006, p. 3.

¹² Based on analysis of ESA boundary information conducted by ACCC. The boundary information was purchased from MapInfo in the package, *ExchangeInfo*.

- uses actual data including customer locations, pillars, exchange locations and cable routes;
- does not include any cable duplication;¹³
- 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.¹⁴

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

¹³ 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.

¹⁴ Telstra Corporation Limited, *ULLS Undertaking, Telstra Efficient Access Model Overview*, 21 December 2007, p. 2.

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 point of interconnection (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 undertaking

Section 152BS of the TPA provides that an ordinary access undertaking submitted by a carrier or CSP to the ACCC must be 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 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.¹⁵

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

Section 152BV of the TPA sets out the matters in respect of which the ACCC must be satisfied before it can accept the undertaking. It applies where an ordinary access undertaking is given to the ACCC 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 provide:

- (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*

¹⁵ *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 section 152BV 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.

The ACCC published the 2008 Undertaking on its website (<http://www.accc.gov.au>) and invited parties to make submissions in response to its 2008 Discussion Paper.

The ACCC has posted electronic copies of parties' public submissions in response to the 2008 Discussion Paper on its website. Where parties have provided submissions in confidence or, where parts of submissions have contained confidential information, as claimed by submitters, these have not been included on the website.

With the release of this draft decision, the ACCC now invites parties to make further submissions on the 2008 Undertaking. After taking into account these additional submissions, the ACCC will form a final view on whether to accept or reject the 2008 Undertaking and publish the reasons for its decision.

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, if requested by a service provider, an access provider is required to, amongst other things:¹⁶

- supply the declared service;
- 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;
- 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;
- permit interconnection of its facilities with the facilities of the service provider;
- 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;
- 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;
- 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;
- if requested by the service provider, provide billing information in connection with matters associated with, or incidental to, the supply of the declared service; 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.

The ACCC's preliminary view on whether the 2008 Undertaking is consistent with the applicable SAOs is set out in section 5 of this paper.

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

Division 6 of Part XIC of the TPA provides that the Minister may make a written determination setting out principles dealing with price-related terms and conditions

¹⁶ *Trade Practices Act 1974* (Cth), section 152AR.

relating to the SAOs.¹⁷ 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 objective 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 objective of the telecommunications access regime is to promote the long term interests of end users (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.¹⁸

In addition to considering whether the 2008 Undertaking meets the objective 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:

- whether the terms and conditions promote the LTIE of carriage services or of services supplied by means of carriage services;

¹⁷ In section 152CH of the TPA “price-related terms and conditions” means terms and conditions relating to price or a method of ascertaining price.

¹⁸ *Trade Practices Act 1974* (Cth), subsection 152AB(2).

- the legitimate business interests of Telstra, and its investment in facilities used to supply the declared service;
- the interests of all 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.¹⁹

In addition, the ACCC may consider any other relevant matter.²⁰

The ACCC's preliminary view on the reasonableness of the terms and conditions contained in the 2008 Undertaking is set out in section 6 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 the terms and conditions, as opposed to one that adopts a set of model terms and conditions set out in the telecommunications access code, must specify the expiry time of the undertaking. Further, 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.

In the 2008 Undertaking, Telstra submits that the 2008 Undertaking will be valid from the date of the ACCC's acceptance of the 2008 Undertaking until the earlier to occur of:

- 31 December 2010;
- termination or withdrawal of this Undertaking in accordance with the TPA;
- the Telstra ULLS ceases to be service of a kind to which a declaration under section 152AL of the TPA applies, and
- a finding, order or declaration by a court of competent jurisdiction that Part XIC of the TPA is invalid as it relates to the Declared Service of that the Declared Service is not a service of a kind which a valid declaration under Part XIC is in force.²¹

¹⁹ *Trade Practices Act 1974* (Cth), subsection 152AH(1).

²⁰ 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.

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

4.3 Procedural matters

4.3.1 Confidentiality

In arriving at its draft 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.

Accordingly, 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.

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 timeliness of the provision of confidential information continues to be an ongoing issue of concern to the ACCC, given the substantial delays experienced throughout this process. On several occasions, the ACCC has expressed its concerns to Telstra that interested parties have been significantly limited in their ability to properly assess the TEA model and further confidential material in support of the 2008 Undertaking.²² The ACCC's concerns in relation to proper external review of the 2008 Undertaking and supporting material are discussed in further detail in Appendix B.1.

The ACCC notes that, 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.

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.

The ACCC made a formal request to Telstra for further information under subsection 152BT(2) on 28 March 2008. Telstra provided responses to the ACCC on 4 and 7 April 2008.

²² ACCC letter to Telstra, *Telstra's 2008 ULLS Undertaking – Confidentiality arrangements*, 14 May 2008.; ACCC, *Telstra's Access Undertaking for the Unconditioned Local Loop Service*, Discussion paper, June 2008, pp. 9-10.

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. The ACCC has also relied upon relevant information from sources other than submissions where it considers that the information facilitated its analysis. This relevant information includes previous ACCC reports; information the ACCC has obtained in the course of related regulatory processes; expert 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 draft 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.²³ This 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').²⁴ Further, the timeframe does not include the period of time from the date the ACCC makes a formal request for further information to the date that Telstra satisfies the request.²⁵ As noted above in section 4.4, the ACCC requested further information from Telstra on one occasion pursuant to section 152BT of the TPA. Furthermore, the ACCC may extend the six month timeframe in certain circumstances by a period of not more than three months.²⁶

²³ *Trade Practices Act 1974* (Cth), subsection 152BU(5).

²⁴ See paragraph 152BV(2)(a) of the TPA.

²⁵ *Trade Practices Act 1974* (Cth), subsection 152BU(6). The ACCC can request further information pursuant to section 152BT of the TPA.

²⁶ *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.

The purpose of paragraph 152BV(2)(b) is to ensure that an undertaking is only accepted by the ACCC when it is consistent with the SAOs applicable to the carrier or CSP for the declared services. This 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 ACCC finds it useful to consider whether the terms and conditions in an undertaking raise any inconsistencies 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 this draft 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 contain clauses that may be classified as non-price terms and conditions.

The Attachment to the 2008 Undertaking specifies the Telstra service description and possible non-price terms for the Telstra service. The service description encompasses terms on 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.

Non-exhaustive scope of the 2008 Undertaking

Telstra notes in the 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.

Any relevant matters that are not addressed in the 2008 Undertaking can be settled by commercial negotiation. Should the parties to a commercial negotiation be 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. However, the ACCC may consider the absence of particular terms and conditions of relevance when conducting its assessment of an undertaking under paragraph 152BV(2)(b) because in some circumstances the absence of particular terms and conditions may 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. Although the absence of terms and conditions is, of itself, not likely to be determinative of reasonableness in most circumstances, the ACCC is likely to have greater confidence in its assessment that an undertaking meets the reasonableness criteria, if the undertaking is comprehensive in setting out terms and conditions of access that any market participant would reasonably expect when gaining access to a regulated service.

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.²⁷ 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.²⁸

²⁷ Telstra, *Telstra's Ordinary Access Undertaking for the Unconditioned Local Loop Service: Response to the ACCC's Discussion Paper dated June 2008, (Response to Discussion Paper)* 12 August 2008, p.2.

²⁸ Ibid.

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.²⁹ Accordingly, Optus notes 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 Monthly Charge Undertaking* concluded that the Telstra service description appeared to be more limited than the ULLS Declaration.³⁰

Adam Internet et al submit that the main difference between the ULLS Declaration and the 2008 Undertaking description is that in the latter, Telstra does not state that the point of interconnection (POI) must be located on the end-user side of the customer access module.³¹

The ACCC notes that there is potential for uncertainty for access seekers about the scope of the 2008 Undertaking as the Undertaking 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 to be more limited than the declared service.

The ACCC is of the preliminary view that the price and non-price terms specified in the 2008 Undertaking only apply to the 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.

If the 2008 Undertaking was interpreted as specifying terms and conditions for all possible forms of the declared service then Telstra could – in accordance with the 2008 Undertaking – 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 given to the 2008 Undertaking the ACCC could not be satisfied that the 2008 Undertaking is consistent with the SAOs. 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 declared service.

The issue is whether the manner in which the Telstra Service is described would not actually cover all instances of the corresponding declared service, and therefore affect the ability of access seekers to gain access to the declared service. In coming to a preliminary view, the ACCC notes the following about the 2008 Undertaking:

- The Telstra Service will support a connection with DC continuity – there is no requirement for the Telstra Service to support any other service;

²⁹ Optus, *Optus Public Submission to Australian Competition and Consumer Commission on Telstra's Access Undertaking for the Unconditioned Local Loop Service: Response to Discussion Paper*, (Optus submission) August 2008, p. 11.

³⁰ Ibid, p. 12.

³¹ Adam Internet Pty Ltd, iiNet Limited/Chime Communications Pty Ltd and Agile Pty Ltd/Internode Pty Ltd, *Telstra's Access Undertaking for the Unconditioned Local Loop Service – Response to ACCC Discussion Paper Dated June 2008*, (Response to ACCC ULLS Discussion Paper) 2008, p.2.

- 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 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 above points suggest that the Telstra Service, while different in description to the Declaration, would not constrain the ability of access seekers to gain access to the declared service.

The ACCC, however, is concerned 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.

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 that 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.³²

Optus suggests that Telstra (in general) 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 in the areas of time frames for supply of new customers; capacity

³² Telstra, *Response to Discussion Paper* (public version), 12 August 2008, p.3.

thresholds on daily ULLS cutovers (for supply of new customers); copper quality and fault handling.³³

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. Nor does the 2008 Undertaking contain provisions on the commencement, refusal, suspension or termination of supply. Absence of these conditions, however, does not necessarily make the ULLS 2008 Undertaking inconsistent with the standard access obligations. Rather, Telstra has not specified all aspects of how these obligations will be satisfied for the Telstra Service.

The ACCC considers that, should agreement not be reached on matters of supply, quality and fault handling - any disagreement could be resolved via the arbitration process under Part XIC of the TPA.

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.

The Attachment: Part A to the 2008 Undertaking defines the POI between Telstra's network and a service provider's network. The Attachment: Part A 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.

The definition specifies that the POI will be at an agreed point between Telstra and the service provider 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. These issues have been included as terms in previous undertakings and no concern has previously arisen about such terms being inconsistent with the SAOs.³⁴

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.³⁵ Optus also 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 'potential POI'.³⁶ Optus suggests that a potential point of interconnection provides multiple possible points of interconnection, but an agreed point of interconnection is limited to those locations to which Telstra is willing to

³³ Optus, *Optus submission*, August 2008, p. 13.

³⁴ Telstra, *Response to Discussion Paper*, 12 August 2008, pp. 4-5.

³⁵ Optus, *Optus submission*, August 2008 p. 16.

³⁶ *Ibid.*, p. 16.

supply; it may also be a means by which Telstra can avoid reaching an agreement with an access seeker for supply of the ULLS.³⁷ Optus suggests that the POI described in the 2008 Undertaking disadvantages access seekers and is not consistent with the SAO to permit interconnection to facilities.³⁸

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.³⁹

In response to Optus' submission that the service description in the 2008 Undertaking is narrower as one of the POIs is an 'agreed point of interconnection' whilst the ULLS Declaration refers to a 'potential POI', the ACCC considers that if parties are unable to agree on a POI, they have recourse to notify the ACCC of such a dispute.

The ACCC also notes that issues around interconnection of facilities are addressed in the revised model non-price terms and conditions, but are not addressed in the 2003 model non-price terms and conditions. In particular, some of the concerns raised by submissions in this process have been considered in the revised model non-price terms and conditions. As the ACCC is required to have regard to model terms and conditions in an arbitration pursuant to section 152AQB of the TPA, the publication of such model terms and conditions should provide greater certainty to industry and encourage access negotiations to conclude more quickly.

Overall, the ACCC considers that the 2008 Undertaking, which does not provide specific terms about facilities access is not inconsistent with the SAOs relating to interconnection of facilities. While Telstra has chosen not to specify in the 2008 Undertaking all the terms concerning interconnection of facilities, the ACCC does not believe that this makes the 2008 Undertaking inconsistent with the SAO to permit interconnection of facilities. The ACCC also notes that the revised model non-price terms and conditions which address interconnection of facilities may provide certainty to industry in access negotiations.

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 must be given at such times and in a manner ascertained in accordance with the *Trade Practices Regulations 1974*. Regulation 28S provides that billing information must be given in a manner and form, and at the times, agreed by the access provider and service provider. It also sets out the type of billing information that must be given.

³⁷ Ibid, p. 17.

³⁸ Ibid.

³⁹ Adam Internet et al, *Response to ACCC ULLS Discussion Paper*, p. 5.

As noted above, Telstra submits that to the extent that the 2008 Undertaking incorporates terms with respect to billing – such terms have not been objected to by the ACCC in previous undertakings assessments.

Optus' submission notes that access seekers need to be provided by Telstra 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.

The ACCC concludes that the absence of billing terms in the 2008 Undertaking does not mean that the 2008 Undertaking is inconsistent with the billing information SAOs. The ACCC also notes that the revised model non-price terms and conditions which address billing issues may provide certainty to industry in access negotiations.

The ACCC's view

The ACCC's view is that the 2008 Undertaking is not inconsistent with Telstra's SAOs in relation to the ULLS.

The ACCC also 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 also notes that it has recently issued draft revised model non-price terms and conditions under section 152AQB of the TPA in relation to the core services (PSTN OTA, LCS and ULLS). As the ACCC is required to have regard to a model terms and conditions 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.

The ACCC notes that the draft of the model non-price terms and conditions address additional matters that were not addressed in 2003 including interconnection of facilities.

6 ACCC's preliminary conclusions on the reasonableness of the terms and conditions in the Telstra ULLS Undertaking

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 objective 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 objective of the 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
- encouraging the economically efficient use of, and the economically efficient investment in, the infrastructure by which telecommunications services are supplied.⁴⁰

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 all 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

⁴⁰ *Trade Practices Act 1974* (Cth), subsection 152AB(2).

- the economically efficient operation of a carriage service, a telecommunications network or a facility.

In addition, the ACCC may consider any other relevant matter.⁴¹

In terms of assessing price terms in an undertaking, the ACCC has provided guidance to industry on pricing principles that would generally be appropriate in the pricing of regulated services. These are detailed in the ACCC's *Access Pricing Principles - Telecommunications, a guide*⁴² and more recently in the ACCC's *Pricing Principles for Unconditioned Local Loop Service, Pricing Principles and Indicative Prices*.⁴³

The issue of the appropriate methodology to price the ULLS was raised in several submissions in response to the 2008 Discussion Paper. In this regard, the ACCC considers it worthwhile to outline its approach to assessing price terms in an undertaking or in arbitration.

6.1 Approach to assessing access prices

The ACCC is not likely to accept a price in an undertaking or determine a price in an arbitration that it considers:

- is not based on the cost of providing the service;
- discriminates in a way which reduces efficient competition in dependent markets;
- is inflated to reduce competition in dependent markets;
- is predatory.⁴⁴

When assessing whether the price terms in an undertaking are consistent with the legislative criteria, in particular that the terms of the undertaking are reasonable under section 152AH of the TPA, the ACCC has generally relied on various sources of information that may assist it in determining whether the proposed undertaking price is cost-based and likely to satisfy the legislative criteria the ACCC must consider. Such information may include, for example, comparing the proposed price term with the access provider's internal transfer price, with the retail price, with other international benchmarking prices. Cost model estimates are another source of information that has been useful in assessing the reasonableness of price terms in an undertaking.

⁴¹ 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.

⁴² ACCC, *Access Pricing Principles - Telecommunications, a guide*, 1997.

⁴³ ACCC, *Pricing Principles for Unconditioned Local Loop Service, Pricing Principles and Indicative Prices*, June 2008.

⁴⁴ ACCC, *Access Pricing Principles - Telecommunications, a guide*, 1997, p. 19.

The concept of TSLRIC

The Total Service Long Run Incremental Cost (TSLRIC) is the total incremental or additional cost a firm incurs in the long term 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 represents the costs a firm necessarily incurs in providing a service and captures the value of society's resources used in its production. The application of TSLRIC relates to the appropriate allocation over time of capital expenditures associated with providing a service, the operating and maintenance costs the firm incurs in providing a service, and a normal commercial return on capital.

The application of TSLRIC+ ('+' refers to the addition of common and indirect costs) 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 and therefore faced the threat of being displaced as a supplier through the possibility of bypass. Such an access price could potentially promote efficient 'build or buy' decisions, such that an access seekers' decision to build by-pass infrastructure would be based on the relative resource cost of doing so. 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's final 2007 ULLS Pricing Principles conclude that a TSLRIC+ pricing principle should be applied to the ULLS.⁴⁵ It must, of course, be an application of TSLRIC+ that satisfies the statutory criteria of reasonableness. One key reason this pricing principle has been adopted in the past has been the ACCC's concern to promote efficient build/buy decisions - in particular, building by-pass infrastructure, where efficient. In some respects, TSLRIC+ has been a generous approach to pricing, and has probably overestimated the potential for infrastructure-based competition. However, the ACCC acknowledges that the past rationale of promoting efficient build/buy decisions through the application 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. If the rolling out of fibre closer to the customer makes the prospects of efficient duplication more remote, then some of the key rationales for a TSLRIC+ approach to pricing will be less relevant.

The ACCC has always been open to considering other approaches of pricing regulated services. Whilst the concept of TSLRIC+ can be consistent with the legislative criteria the ACCC must consider, there are other pricing approaches which are also likely to be consistent with the criteria. For instance, the ACCC has previously determined that other pricing approaches such as the retail minus retail cost methodology used to price the wholesale line rental service is consistent with the legislative criteria.

⁴⁵ see ACCC, *Pricing Principles for Unconditioned Local Loop Service Amendment Determination 2008 (No.1)*, p.5.

The ACCC is also aware of the limitations in the application of TSLRIC+ outside its original focus for PSTN assets in that the TSLRIC+ concept revalues the network assets in each regulatory period such that it does not take account of depreciation in the value of the assets. This limitation is particularly apparent in the case of enduring assets such as trenches which are likely to be less susceptible to bypass. The ACCC also notes that under Part XIC it is open to parties to put forward their preferred pricing approaches, and Telstra has consistently proposed TSLRIC principles. However, it is also open to parties to adopt new and/or different applications of these principles in different regulatory matters, including by revaluing assets. This can create considerable uncertainty for access seekers.

Distinguishing between the TSLRIC+ concept and its implementation

While the ACCC considers that the TSLRIC+ as a broad theoretical economic concept may be an appropriate pricing methodology for certain services, of relevance to the ACCC is whether implementation of that concept satisfies the legislative criteria the ACCC must consider. In effect, this means that not all implementations of TSLRIC+ will necessarily meet the legislative criteria that the ACCC must consider.

The ACCC notes that it has always been open to considering various ways of implementing TSLRIC+ as this gives parties the flexibility to propose new and different ways of pricing regulated services. What is of relevance is that any proposed pricing approach, and implementation of that approach, must satisfy the legislative criteria the ACCC must consider, in particular, 'reasonableness'.

There are a variety of methods that can be used to derive TSLRIC estimates 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 may provide little meaning to costs that would be incurred currently by an efficient supplier of a service. Using these costs as the basis for pricing decisions can therefore distort consumption and investment decisions. For instance, historic costs guarantee a normal commercial return to the access provider independent of the quality of its investment decisions which may reward/penalise the access provider for poor/good investment decisions. This does not create appropriate incentives for the access provider 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, and can again not provide appropriate incentives for providers.

Another method to estimate TSLRIC is through the application of an optimised cost model using forward-looking costs. These costs are those that a hypothetical efficient supplier would incur in the longer term using the most efficient means possible and commercially available. This methodology focuses on the costs an efficient supplier would incur over time so that the errors or distorted decisions such a supplier may have incurred in the past are set aside and hence the opportunity cost of the services to be provided is reflected.

Forward-looking costs are usually applied in a TSLRIC framework. In principle, the application of fully forward-looking costs would value all existing assets at the cost of a modern equivalent asset (MEA). A MEA is the lowest cost asset with the latest

available and proven technology to provide the same service potential. In general, the forward-looking approach is more compatible with the competitive standard of efficiency, since in a competitive market, prices would be 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 would not be compensated for cost incurred through inefficiency. However, the general principles of TSLRIC can be implemented in quite different ways in practice, each of which requires trade-offs and matters of judgement to be exercised.

Pragmatic implementation of TSLRIC

The ACCC has been willing to accept a more pragmatic application of a fully forward-looking application of the TSLRIC approach than using the purest 'MEA'. In recognition of actual circumstances, the ACCC has generally accepted the following simplifications to the fully forward-looking TSLRIC approach:

- certain key features of an existing network such as exchanges and pillars are kept constant. This is often referred to as the scorched node approach where the location of particular nodes are assumed to be fixed;
- rather than use the assumption of 'best available technology', the ACCC has generally accepted the assumption of the best technology in widespread use. This means that there is less speculation about future evolving technologies or substantially altered network design. A fully forward-looking approach to TSLRIC would apply the most efficient technology for the provision of services on the ULLS – this might mean wireless loops and fibre delivering the same service potential. The ACCC also notes that there is a significant degree of uncertainty as to how to apply the most efficient technology assumption when modelling a legacy network, especially when it may soon be replaced; and
- not all assets assumed to deployed in a forward-looking model of the network would be re-optimised. In actual circumstances, even in a competitive market, firms do not instantaneously replace all of their facilities with every improvement in technology. Therefore, even the most efficient carrier's network will reflect a mix of new and older technology at any given time.

Combined, these simplifications mean that a more pragmatic interpretation of the fully forward-looking assumption has generally been taken when modelling the fixed network. In this regard, the ACCC considers that a pragmatic approach to modelling the fixed network is not necessarily truly reflective of the most efficient means to provide the ULLS. A key implication from recognition of a pragmatic application of TSLRIC is that while estimates of costs in such models provide important information, they cannot be considered conclusive in determining an appropriate access price that meets the reasonableness criteria. Thus, the ACCC has generally relied on various sources of information, including cost model estimates and international benchmarks in assessing whether the terms and conditions of an undertaking are reasonable. This information may include comparing the proposed access price with the access provider's (actual or implied) internal transfer price for a similar service, with the retail price, and/or with international prices.

When assessing an undertaking, of relevance to the ACCC is whether the cost estimation chosen to support the undertaking (in this case, a TSLRIC+ methodology) has been implemented in a fashion that would be considered reasonable under the legislative criteria set out in section 152AH of the TPA. The ACCC would expect Telstra - which has strongly argued for a pragmatic approach to access pricing in the past - to adopt such an approach in relation to its estimation of efficient costs. In this regard, the ACCC will rely on a variety of sources of evidence to assess whether the undertaking price is reasonable.

6.2 Assessment of price terms in the 2008 Undertaking

Telstra has proposed a \$30 ULLS monthly access charge per SIO within Band 2 ESAs. The Proposed Monthly Charge does not include all costs relating to the provision of the service.

Submissions

The Proposed Monthly Charge

Telstra has relied on version 1.2 of the TEA model as evidence to support the reasonableness of its 2008 Undertaking. In a letter dated 28 March 2008, the ACCC 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 \$50.⁴⁶ In response, Telstra stated that:

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.⁴⁷

Telstra also submits that the Proposed Monthly Charge is reasonable based on the results of the TEA model, the commercial asking price of the ULLS and the fact that it is geographically de-averaged.⁴⁸

⁴⁶ ACCC letter to Telstra titled "Telstra's March 2008 ULLS Undertaking for Band 2: Request for further information", 28 March 2008.

⁴⁷ Telstra letter to ACCC, titled "Telstra's March 2008 ULLS Undertaking for Band 2: Request for further information", 7 April 2008.

⁴⁸ Telstra Corporation Limited, *Telstra's ULLS Undertaking is Reasonable*, 4 April 2008, p.2.

Telstra submits that the TEA model produces reasonable TSLRIC+ cost estimates having regard to the criteria in section 152AH of the Act.⁴⁹ In Telstra's submission, such prices:

- promote competition;
- encourage the economically efficient use of infrastructure;
- encourage the economically efficient investment in infrastructure;
- promote Telstra's legitimate business interests; and
- protect the interests of access seekers.⁵⁰

Optus however notes in its submission that the Proposed Monthly Charge is significantly higher than the rate of \$14.30 determined by the ACCC in its most recent arbitration and the rate of \$16.00 set out in the ACCC's most recent pricing principles for the ULLS.⁵¹ Optus submits that it has formed business plans and has made DSLAM investments, based on the assumption that monthly charges will stay at similar rates.⁵² Accordingly, Optus believes the proposed increase will strand investments, deter efficient investment in infrastructure and constitutes expropriation of the value of sunk investments in both infrastructure such as DSLAMs and of the value of investments made by end users (for example Optus submits that end users make sunk investments based on the availability of competitively priced communication services).⁵³ In relation to the relevant legislative criteria, these effects:

- would not be in the interests of persons who have a right to use the declared service,
- would not promote efficient investment in telecommunications infrastructure, and
- would not promote the efficient use of telecommunications infrastructure.⁵⁴

Chime's submission reiterates that the proposed increase in the monthly charge is significantly higher than the price determined in arbitrations. Chime argues that as the actual input costs for Telstra providing ULLS will not increase, Telstra will be in a position where they can offer lower prices to users in downstream markets in order to damage, rather than promote competition.⁵⁵

⁴⁹ Telstra, *Response to Discussion Paper*, 12 August 2008, p. 8.

⁵⁰ Telstra Corporation Limited, *Telstra's ULLS Undertaking is Reasonable*, 4 April 2008, p.4.

⁵¹ Optus, *Optus submission*, August 2008, p. 30.

⁵² *Ibid.*, p. 31.

⁵³ *Ibid.*, pp. 30 & 31.

⁵⁴ *Ibid.*, p. 31.

⁵⁵ Adam Internet et al, *Response to ACCC ULLS Discussion Paper*, p. 7.

Chime submits that a competitive ULL environment is relied upon in other telecommunications areas. For example Telstra's current LCS and WLR exemption relies on reasonable levels of competition between ULL providers. As well as being an important contributor to whether a service is exempt from declaration, Chime notes that competition is essential to ensure that innovative products – such as Naked DSL – continue to be offered to end users.⁵⁶

Chime submits that if Telstra is compensated for the sunk costs of building the network, this would constitute overcompensation and would not be in the legitimate interests of Telstra.⁵⁷ Furthermore, Chime notes that it is unreasonable to include unincurred costs in the monthly charge and the inclusion of such costs would constitute manipulation of the TSLRIC methodology.⁵⁸

Existing and future demand

Whilst the TEA model does not take into account forecast decline in demand, Telstra submits this approach is conservative.⁵⁹ Telstra submits that this is because the number of active lines is predicted to fall, and as the CAN is predominantly made up of fixed costs, this would increase unit costs.⁶⁰ In addition, Telstra notes that the future cost of constructing a network would be expected to rise due to the increasing costs of labour and copper.⁶¹

Network Strategies submits that while the TEA model looks at a fixed point in time, it is accepted that future demand may be adequately taken into account as cable fill factors of less than 100 per cent are used.⁶² As such Network Strategies indicated that this aspect of the model does not mean it is unreasonable.⁶³ Yet, Optus submits that the TEA model's ability to produce reasonable TSLRIC+ results is limited, because a fixed point in time is modelled which means future demand is not taken into account.⁶⁴

Components of the ULLS monthly charge

Telstra acknowledges that the 2008 Undertaking relates only to network costs, and submits that this does not prevent the ACCC accepting the 2008 Undertaking.⁶⁵

Network Strategies submits that a correct TSLRIC calculation requires all costs specific to the ULLS to be included.⁶⁶ In addition, Optus submits that in order to achieve

⁵⁶ Ibid., p. 8.

⁵⁷ Ibid.

⁵⁸ Ibid., p. 7.

⁵⁹ Telstra, *Response to Discussion Paper*, 12 August 2008, p. 8.

⁶⁰ Ibid., p. 9.

⁶¹ Ibid.

⁶² Network Strategies, *Report for Optus*, 5 September 2008, p. 66.

⁶³ Ibid.

⁶⁴ Optus, *Optus submission*, August 2008, p. 33

⁶⁵ Telstra, *Response to Discussion Paper*, 12 August 2008, p. 10.

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.⁶⁷

The ACCC's Views

The ACCC has had regard to the following information to assist it in assessing whether the price terms in the 2008 Undertaking are reasonable:

- TEA model underlying assumptions;
- access prices for the ULLS internationally;

TEA model underlying assumptions

The ACCC has assessed the TEA Model as summarised below.

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 the TEA model is broadly based on best practice engineering rules and practices.

However, the ACCC is not satisfied that the TEA model reflects efficiency savings. The ACCC notes that Telstra has provided material to show that the TEA model network design is more efficient than Telstra's actual network but no evidence is provided to show the likely efficiency savings were the TEA model compared with a fully optimised network.

Cost assumptions

The ACCC has made the following assessments in **Appendix B** in relation to network cost assumptions:

- the value of equipment costs and vendor prices are overestimated;
- the inclusion of lead-in costs and entrance facility costs result in an overestimation of network costs. These costs are not legitimate costs incurred in providing the ULLS;

⁶⁶ Network Strategies, *Report for Optus*, 5 September 2008, p. 66.

⁶⁷ Optus, *Optus submission*, August 2008, p. 33.

- the capital indirect overheads mark-up in the TEA model appears acceptable;
- the inclusion of surface barriers as a component of the network asset value would compensate Telstra for costs it did not incur;
- Telstra's preferred trench sharing value of 1 per cent in new estates is underestimated;
- 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 (or zero tilt) annuity will result in over compensation to Telstra.

The ACCC notes that, overall, these cost assumptions are not reasonable and would lead to an over-estimation of the costs of providing the ULLS.

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. The ACCC has found that when the TEA model is run with other parameter values, the resulting range of monthly charge estimates are significantly less than \$30. This leaves the ACCC with significant doubt as to whether the Proposed Monthly Charge of \$30 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, when all submissions are taken into account, to be a reasonable price range.

In particular, the ACCC applied the following assumptions to the TEA model in its scenario run:

- trenching of turf only;
- Ovum's pre-tax WACC of 9.22, post-tax WACC of 8.58;
- tilt to the ducts and pipes of 3 per cent;⁶⁸ and
- \$0 for lead-ins rather than the TEA model assumption of \$282.91.

In combination, these assumptions result in the monthly charge for the ULLS being significantly less than \$30. It also relevant to note that adjustments to the O&M and indirect cost assumptions were not included in this scenario run of the TEA model as

⁶⁸ 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

this requires significant data manipulation. In this regard, an additional further decrease in the estimated monthly charge would be expected.

International benchmarks

In the past, the ACCC has generally placed less weight on the use of international benchmarks when comparing ULLS prices due to 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 when assessing the 2008 Undertaking against the reasonableness criteria. As such, the ACCC has examined Ovum benchmarking reports to determine appropriate international benchmarks for assessing the Proposed Monthly Charge.⁶⁹

Figure 6.1 International comparison of ULLS Monthly charge in AUD for second quarter of 2008.

<i>Country</i>	<i>No PPP</i>	<i>PPP</i>	<i>Population per sq km</i>
Norway	21.19	15.00	12
Finland	19.96	15.39	16
Sweden	15.40	11.71	20
Ireland	29.25	21.77	59
Spain	17.31	15.38	86
Austria	16.61	13.81	99
France	16.54	13.40	111
Portugal	16.01	15.06	114
Italy	13.60	11.31	195
Denmark	17.31	9.97	126
Germany	18.69	15.34	232
United Kingdom	15.45	13.83	248
Belgium	16.54	13.75	341
Netherlands	14.24	11.69	393
Australia			967.5 (Band 2)
Average	17.72	14.10	

Source: Stefano Nicoletti, Matthew Howett, Charice Wang, Ovum, *Europe & Americas additional benchmarks tables and charts – benchmarking period Q2 2008*, July 2008; United Nations, *The United Nations World Population Prospects: The 2006 Revision*, <http://data.un.org/Data.aspx?d=PopDiv&f=variableID%3a14>

The ULLS charge averaged for all international countries is significantly below the Proposed Monthly Charge. In particular, the Proposed Monthly Charge is about 40.9 per cent (assuming no PPP) higher than the ULLS charge averaged for all international countries when purchasing power parity (PPP) is not assumed, and 53 per cent higher when PPP is assumed. It is also observed that the Proposed Monthly Charge is higher,

⁶⁹ Stefano Nicoletti, Matthew Howett, Charice Wang, Ovum, *Europe & Americas additional benchmarks tables and charts – benchmarking period Q2 2008*, July 2008.

and significantly so, when compared to ULLS prices in each of the international countries in the Ovum report.

When considering the population density of the countries along with the ULLS prices, the ACCC notes that it would expect ULLS prices generally to fall as population density increases. Therefore, the ACCC considers that it would be difficult to conclude that the Proposed Monthly Charge of \$30 can be justified in Band 2 which has high population density, especially when compared to the significantly lower ULLS prices in other population dense countries, which are not even as densely populated as Band 2.

Trends in ULLS pricing in Australia

In June 2008, the ACCC made ULLS pricing principles and indicative prices based on its own preferred cost assumptions applied to the PIE II model.⁷⁰ In that pricing principles determination, the ACCC indicated that monthly access charges of \$12.30 for 2005/06; \$13.70 for 2006/07; \$14.30 for 2007/08 and \$16.00 for 08/09 are appropriate and consistent with the prices set in arbitration in March 2008 for band 2.

The Proposed Monthly Charge is 47 per cent higher than the ACCC's most recent indicative ULLS price for Band 2.⁷¹

ULLS past and present pricing

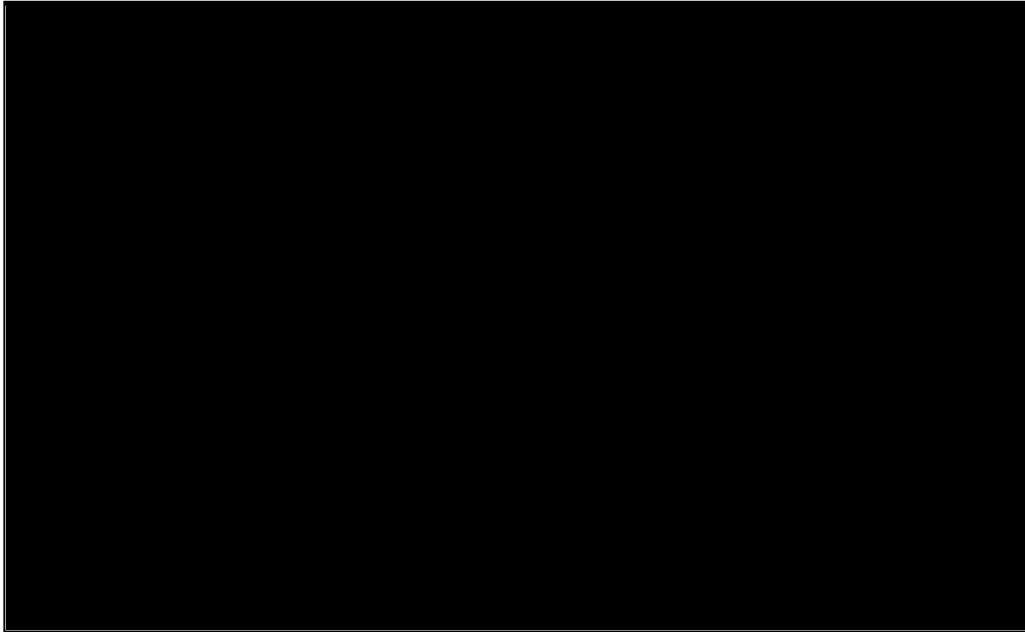
The ACCC notes the divergence between the current indicative prices for the ULLS and the \$30 Proposed Monthly Charge and that this may lead to a significant risk and uncertainty in the market, potentially reducing the ability for competitors to effectively compete.

[Begin c-i-c] 

⁷⁰ ACCC, *Pricing Principles for Unconditioned Local Loop Service Amendment Determination 2008 (No.1)*

⁷¹ Ibid.

Figure 6.2 Total ULLS uptake from September 2007 – June 2008



[End c-i-c]

Source: ACCC analysis of Telstra's Customer Access Network Record Keeping and Reporting Rules (2008)

6.3 Do the price terms reflect the costs of supply for an efficient forward-looking operator?

As noted previously, the ACCC considers that Telstra's application of its TEA Model over-estimates network costs. In particular, the ACCC considers that the monthly charge of \$47.86 which is produced by the TEA Model using Telstra's default input parameters is likely to represent an access price that is higher than that required by an efficient operator to recover costs of providing the ULLS in Band 2.

The ACCC has also found that when the TEA model is run with other parameter values, the resulting range of monthly charge estimates are significantly less than the Proposed Monthly Charge of \$30. 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, when all submissions are taken into account, to be a reasonable price range for Band 2.

In this regard, while the TEA model can provide some guidance on the estimated forward-looking costs of providing the ULLS, it is not the only source that the ACCC has relied on in assessing the undertaking. In particular, the ACCC has examined international prices for the ULLS.

The ACCC considers the discrepancy between the Proposed Monthly Charge and international benchmarks indicates that the Proposed Monthly Charge is higher than

that required by an efficient operator in other countries to recover costs of supplying an ULLS.

The ACCC has also attempted to compare network costs estimated using historic and current cost data from the Regulatory Accounting Framework, and using the TEA model (see section 6.8).

6.4 Assessment of non-price terms in the 2008 Undertaking

Telstra's 2008 Undertaking includes a limited number of non-price terms and conditions.

Submissions

Telstra

Telstra submits 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.⁷²

It notes 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.⁷³

Optus

Optus submits 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.⁷⁴

In this regard, Optus submits that Telstra does not provide equivalent access to Telstra exchange buildings (TEBA) to access seekers as it does to itself. It claims that, while access seekers are prevented from accessing racks in "capped exchanges", where capacity is constrained, these "caps" do not apply to Telstra. [begin c-i-c]

[end c-i-c] Also, 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.⁷⁶

⁷² Telstra, *Response to Discussion Paper*, 12 August 2008, p. 41.

⁷³ Ibid.

⁷⁴ Optus, *Optus submission*, August 2008, p 67.

⁷⁵ Optus, *Optus submission – confidential version*, August 2008, p 68

⁷⁶ Optus, *Optus submission*, August 2008, pp. 67-68.

Optus submits 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 the 2008 Undertaking less than reasonable in terms of the reasonableness criteria set out in section 152AH.⁷⁷

Adam Internet et al, in their joint submission, submit 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 raise 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.⁷⁸

The ACCC's 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 terms are the same in 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. Further, Telstra cannot rely on past ACCC views and assume knowledge of the ACCC's position, particularly as circumstances change.

The ACCC notes the concerns raised by Optus, 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.

In its assessment of whether the 2008 Undertaking terms and conditions are consistent with the SAOs, the ACCC concluded that access seekers have recourse to arbitration and other means to address matters that are not covered by an undertaking. It is similarly minded to conclude that an undertaking should not be considered less than reasonable simply because a term or matter is not covered in an undertaking and where that matter can, potentially, be addressed by recourse to arbitration or commercial negotiation.

The ACCC notes that the revised non-price model terms and conditions of access to the core services, including the ULLS has been made. This determination 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. Section 152AQB of the TPA states the ACCC must make an instrument that specifies model terms and conditions of access to the core services (PSTN OTA, LCS and ULLS). An instrument of this type expires after five years unless sooner revoked. Such an instrument was made in October 2003 and hence expires in October 2008.

The revised non-price model terms and conditions address matters that have been considered contentious in access negotiations, and hence are either matters that have

⁷⁷ Ibid, pp. 68-69.

⁷⁸ Adam Internet et al, *Response to ACCC ULLS Discussion Paper*, p.5.

previously been raised in arbitrations or are matters that are likely to arise in future arbitrations. Issues were also prioritised based on material bearing on the timeliness and quality of access. Also, the revised model non-price terms and conditions address matters not addressed in the 2003 instrument, such as issues around exchange capping.

6.5 Does the 2008 Undertaking promote the long-term interests of end-users (LTIE) of carriage services or of services supplied by means of carriage services: 152AH(1)(a)

The ACCC has published a guide explaining what it understands is meant by the phrase ‘long-term interests of end-users’ in the context of its declaration responsibilities (although there have been amendments to the TPA definition of the LTIE since that guide was published).⁷⁹ The ACCC’s view is that a similar interpretation as set out in the declaration guidelines is appropriate in the context of assessing access undertakings.

In determining whether the terms and conditions of the 2008 Undertaking promote the LTIE, subsection 152AB(2) of the TPA requires the ACCC to have regard to whether the terms and conditions are likely to result in the achievement of three specific objectives. In assessing whether the 2008 Undertaking is in the LTIE the ACCC is limited to these three objectives alone⁸⁰. These objectives are:⁸¹

- the objective of promoting competition in markets for carriage services and services supplied by means of carriage services (listed services);
- the objective of achieving any-to-any connectivity in relation to carriage services that involve communication between end-users;
- the objective of encouraging the economically efficient use of, and economically efficient investment in:
- the infrastructure by which listed services are supplied;⁸² and
- any other infrastructure by which listed services are, or are likely to become, capable of being supplied.⁸³

The ACCC considers that ULLS access prices that reflect the efficient (as opposed to actual) cost of supplying the ULLS will best promote the LTIE. The preliminary conclusion of the ACCC is that the price terms of the 2008 Undertaking do not reflect

⁷⁹ ACCC, *Telecommunications Services – Declaration Provisions: a Guide to the Declaration Provisions of Part XIC of the Trade Practices Act*, July 1999.

⁸⁰ *Trade Practices Act 1974* (Cth), subsection 152AB(3).

⁸¹ *Trade Practices Act 1974* (Cth), subsection 152AB(2).

⁸² *Trade Practices Act 1974* (Cth), subparagraph 152AB(2)(e)(i).

⁸³ *Trade Practices Act 1974* (Cth), subparagraph 152AB(2)(e)(ii).

the efficient forward-looking costs of supply. The ACCC's LTIE analysis in relation to the price terms is set out below.

In relation to non-price terms, the ACCC's general position is that the LTIE will be promoted by access terms that facilitate access seekers gaining access to the ULLS at a standard that is equivalent to the service that the access provider supplies to itself, in terms of technical and operational quality of services and the manner and timing of access.

Promoting competition in markets for telecommunications services

In determining the extent to which the 2008 Undertaking is likely to result in the achievement of promoting competition in markets for listed services, the TPA obliges the ACCC to have regard to the extent to which the 2008 Undertaking will remove obstacles to end-users of listed services gaining access to listed services.⁸⁴ 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 listed services.

The ULLS is an input to 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 internet access. As such in assessing whether particular terms and conditions will promote competition in the supply of ULLS, the ACCC consider that it is relevant to consider the markets in which DSL and voice services are supplied (retail and/or wholesale) and whether the 2008 Undertaking will remove obstacles to end-users gaining access to these services

The ACCC considers that prices that reflect efficient forward-looking costs of supply will best promote effective competition in the supply of fixed-line voice services and broadband/DSL services in the present environment. This is because such prices best enable access seekers to compete on an equal footing with other suppliers, including the access provider, in the supply of downstream voice and DSL services.

As noted previously, the ACCC considers that Telstra's application of the TEA model results in an estimated access price that does not reflect efficient forward-looking costs. Further, the ACCC's preliminary view is that the TEA model network cost assumptions would result in an over-estimation of the cost of providing the ULLS. As a consequence the ACCC does not consider that the TEA Model is able to support a conclusion that the Proposed Monthly Charge reflects the efficient forward-looking costs of providing the ULLS.

The ACCC also considers that the 2008 Undertaking does not provide certainty to access seekers, potentially affecting their ability to compete in telecommunications markets. In particular, the ACCC notes that the 2008 Undertaking does not include all the relevant costs in the monthly charge such that access seekers will need to negotiate with Telstra on other aspects of the monthly charge. The contemporaneous nature of the undertaking assessment also adds uncertainty to the regulatory environment as it is

⁸⁴ *Trade Practices Act 1974* (Cth), subsection 152AB(4).

unclear when, and if, all aspects of the monthly charge would come into operation. Further, the ACCC notes the lack of industry operators with access to the full version of the TEA model - insufficient external review of the full version of the TEA model does not generate confidence in the reasonableness of the undertaking. As noted previously, the ACCC also considers the incomplete nature of the undertaking (absence of key terms and conditions in the undertaking) may create a degree of uncertainty amongst market participants although this, of itself, is not likely to be determinative of reasonableness in most circumstances. Both access providers and access seekers have argued the need for long-term regulatory certainty to promote investment. While the TPA does not contemplate that all terms and conditions will be set out in an undertaking, the ACCC notes that it is likely to have less confidence in the reasonableness of an undertaking when terms and conditions in the undertaking which a market participant would reasonably expect when gaining access to a regulated service, are absent.

For the above reasons, the ACCC does not presently consider that the Proposed Monthly Charge in the 2008 Undertaking would promote competition in markets for telecommunications services.

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

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.

The ACCC considers that the terms of access in the 2008 Undertaking do not directly affect the objective of achieving any-to-any connectivity.

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' requires 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 is likely to result in the achievement of the objective of encouraging efficient use of an 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 the ability of the supplier or suppliers of the services, including the ability of the supplier or suppliers to exploit economies of scale and scope.
- The incentives for investment in:⁸⁵
 - 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 (section 152AB(7)).

In assessing whether the 2008 Undertaking encourages the economically efficient use of and investment in infrastructure the relevant consideration is the 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).

The ACCC considers that an access price that reflects efficient, forward-looking costs best meet the objective of encouraging the economically efficient use of and investment in infrastructure. This is because such prices:

⁸⁵ 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.

- 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.

The ACCC's view is that where access prices are based on costs that are not the costs of a fully optimised and efficient network, the resulting access prices may not reflect the efficient costs of providing the service and will not encourage appropriate build/buy decisions. On this basis the ACCC considers that the objective of promoting efficient investment is not achieved when costs of providing the ULLS are based on a network which has not been fully optimised and does not use forward looking and efficient cost values.

As discussed above, the ACCC does not consider that the TEA Model is able to support a conclusion that the Proposed Monthly Charge reflects efficient forward-looking costs of providing the ULLS. The ACCC considers that access prices should be set so as to allow more efficient sources of supply to displace less efficient sources of supply in dependent markets. At an inflated access price, access seekers will look to build and not buy, when it may be more efficient to buy.

The ACCC considers that a significant, unanticipated rate increase may also reduce the incentive for access seekers and potential new entrants to make infrastructure-based investment such as in DSLAMs.

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.

Conclusion on LTIE

The ACCC concludes overall that the Proposed Monthly Charge price term is not in the LTIE based on the conclusions that it would discourage competition and economically efficient use of and investment in infrastructure as:

- the Proposed Monthly Charge does not reflect the efficient forward-looking costs of supplying the ULLS and
- there is a large discrepancy between the Proposed Monthly Charge and international benchmarks.

The ACCC notes submissions from access seekers that the 2008 Undertaking should contain the complete monthly charge. The ACCC notes that the impact of not specifying the complete monthly charge means that if an access seeker is unable to reach a commercial agreement on the parts of the monthly charge not specified in the 2008 Undertaking, an access dispute may arise for determination by arbitration. The

ACCC considers that it is preferable that the complete monthly charge be set in the 2008 Undertaking.

The ACCC also has concerns about the timing of the Undertaking application from Telstra. The Undertaking was submitted in March 2008 with commencement at the point of acceptance by the ACCC until 31 December 2010. Telstra are aware of the statutory process which the ACCC are required to undertake and would be aware that, 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 are in the LTIE.

6.6 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' 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.⁸⁶ 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:⁸⁷

...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.

⁸⁶ ACCC, *Access Pricing Principles – Telecommunications*, July 1997, p. 9

⁸⁷ *Trade Practices Amendment (Telecommunications) Bill 1996 Explanatory Memorandum*, p.46.

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.

The ACCC considers that overall the 2008 Undertaking would result in Telstra recovering more than is necessary to promote Telstra's legitimate business interests. Of particular significance is that Telstra's proposed cost of capital is overestimated and would result in its recovering more than its legitimate business interests.

The ACCC also considers that the inclusion of surface barriers, for example, concrete footpaths and roads, as a component of the asset value for determining network costs would overly compensate Telstra for its investments in facilities used to supply the declared service. In a substantial majority of cases, local copper pairs were installed in turf and only subsequently paved over. Telstra has proposed that forward-looking costs should include the retrenching and re-paving of trenches where local copper pairs were initially laid. The result would be that Telstra would be compensated for costs that it (in most cases) never incurred and is not likely to incur within the economic life of the existing copper pairs.

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.

6.7 Interests of all persons who have rights to use the declared services

The interests of persons who have a right to use the ULLS, 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.

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 their relative merits. Terms and conditions that favour one or more service providers over others and thereby distort the competitive process may prevent this from occurring and consequently harm those interests.

The ACCC considers that the TEA model network cost assumptions result in cost estimates that would overcompensate Telstra. The ACCC also notes that a Proposed Monthly Charge that is significantly above the current prevailing ULLS price is not in the interests of access seekers. These findings favour Telstra over others which would distort the competitive process and consequently harm access seekers' interests.

6.8 Direct costs of providing access to the declared services

Direct costs are those costs necessarily incurred in or caused by the provision of access. As stated in the same explanatory memorandum mentioned above:⁸⁸

...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.

This requires that an access price should not be inflated to recover any profits the access provider (or any other party) may lose in a dependent market as a result of the provision of access.

This 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.⁸⁹

The ACCC has not been provided with evidence of Telstra's direct costs of providing access to the ULLS in band 2. In this regard, the ACCC notes that the TEA model seeks to measure the costs that may be faced by a new entrant seeking to replicate Telstra's access network. This model does not provide a measure of Telstra's direct costs of providing access to the ULLS.

The ACCC has examined evidence from international benchmarks which suggests that overseas operators are able to provide similar unconditioned local loop services at much lower prices, suggesting that they were able to provide these services at much lower direct costs.

The ACCC has also 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. However 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 Telstra's undertaking concerns supply of the ULLS in band 2 only – further, the RAF data cannot be easily broken into bands in order to make a like-for-like comparison;
- the source data represent historic practices, and do not reflect productivity improvements or other changes, e.g., in input prices, reasonably expected for the period of the undertakings.

That said, this examination lends support to the view that Telstra's likely direct cost of providing access to the ULLS in band 2 for the period of the undertakings will be significantly less than the measure derived from the TEA model.

⁸⁸ *Trade Practices Amendment (Telecommunications) Bill 1996 Explanatory Memorandum*, p.46.

⁸⁹ Stand-alone costs are the costs an access provider will incur providing a service assuming the access provider produced no other services.

In this regard, the table below provides a measure of the direct costs based upon cost data that Telstra supplied in its RAF for 2006/07 regarding its customer access network. The cost measure is broken down into CAN costs (operating expense and depreciation) and cost of capital (i.e. a normal return on capital employed).

Table 6.1 2006/07 CAN costs reported in RAF

(\$m)	<i>Costs – all bands</i>
O&M costs and depreciation^a	[begins c-i-c] [REDACTED]
Return on capital^b	[REDACTED]
TOTAL	[REDACTED] [ends c-i-c]

Notes:

- a. *Historic costs of the CAN. This includes: CAN ducts and pipes; CAN copper cables; CAN other cables; CAN pair gains; and other CAN assets.*
- b. *Ovum's pre-tax WACCC of 9.22 is applied.*

An examination of Telstra's 2006/07 RAF data also lends support to the view that the Proposed Monthly Charge exceeds what is necessary to ensure that Telstra would be able to recover the direct costs of providing the ULLS in band 2. Telstra has reported that the number of access lines across all bands is [c-i-c] [REDACTED]. Hence, the average monthly charge necessary to recover the direct costs of the customer access network across all areas – which will exceed the amount necessary to recover costs in band 2 areas – is likely to be in the order of:

[begins c-i-c] [REDACTED] [ends 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.

The 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. Operational and technical requirements necessary for the safe and reliable operation of a carriage service, a telecommunications network or facility.

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.⁹⁰

⁹⁰ ACCC, *Access Pricing Principles – Telecommunications*, July 1997, p. 10.

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 both the monthly charge in the TEA model and the Proposed Monthly Charge are not below the efficient costs of supplying the ULLS and are, in fact, above the efficient costs of supplying the ULLS.

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.

6.9 Economically efficient operation of a carriage service, a telecommunications network or a facility

In the ACCC's view, the phrase 'economically efficient operation' embodies the concept of economic efficiency set out in the analysis of the LTIE. That is the 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 long-term interests of end-users and its consideration of this matter.⁹¹

The ACCC considers that, in the context of access prices, prices that reflect the efficient forward-looking costs of the service best meet this criterion. As noted previously, the ACCC considers that Telstra's application of the TEA model results in an estimated access price that does not reflect efficient forward-looking costs. Further, the ACCC concludes that the TEA model network cost assumptions would overall result in an overestimation of the cost of providing the ULLS. As a consequence the ACCC does not consider that the TEA Model is able to support a conclusion that the Proposed Monthly Charge reflects efficient forward-looking costs of providing the ULLS. Therefore, the ACCC considers that the 2008 Undertaking is not likely to facilitate the economically efficient operation of the ULLS.

⁹¹ 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.

6.10 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;
- 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.

7 Draft Decision on the 2008 Undertaking

Following the release of the 2008 Discussion Paper and consideration of submissions in response, the ACCC has made the following preliminary findings:

- the public process criterion has been met;
- the 2008 Undertaking is consistent with the standard access obligations;
- in the absence of a Ministerial pricing determination, there is no need to consider whether the 2008 Undertaking is consistent with such a determination;
- the 2008 Undertaking is not reasonable on the basis that the price term of the Proposed Monthly Charge of \$30 falls outside what could be considered, when all submissions are taken into account, to be a reasonable price range; and
- the expiry date criterion has been met.

As the ACCC preliminary conclusion is that the 2008 Undertaking does not meet the reasonableness criteria, the ACCC's draft decision is to reject Telstra's 2008 Undertaking.

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.⁹²

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.

⁹² 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 TEA model assumptions

This Appendix contains the ACCC's assessment of whether TEA model assumptions are reasonable in accordance with the range of matters set out in subsection 152AH(1) of the TPA and detailed in Chapter 4 of this paper.

The ACCC identified the following key TEA model assumptions in its 2008 Discussion Paper:

- network design and engineering rules;
- cost valuation;
- trenching costs;
- trench sharing;
- methodology to calculate operations and maintenance and indirect cost factors;
- cost of capital;
- depreciation.

The ACCC's draft assessment on each of these issues is discussed, in turn, below. Prior to this, the ACCC provides an assessment of the degree of transparency of the TEA model.

B.1 Ability to properly assess the TEA model

In testing the robustness of the model, the ACCC has considered the extent to which the TEA model allows the ACCC and interested parties to properly assess the content and assumptions in the model.

The ACCC considers it is in the public interest and that it is Telstra's responsibility to enable the ACCC, and other parties, to sufficiently scrutinise its model and to enable sensitivity testing of Telstra's preferred assumptions and input values such that the ACCC can be satisfied that the model is capable of generating efficient forward-looking cost estimates.

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.⁹³

⁹³ Telstra, *Response to Discussion Paper*, 12 August 2008, p. 5-6.

Telstra submits that the Microsoft Excel spreadsheets used in the TEA model enables 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 contains software errors that were fixed in version 1.1 of the model.⁹⁴ Following Ovum's report commissioned by the ACCC, Telstra submitted a revised version of the TEA model - version 1.2 on 10 September 2008 which was after the period for consultation on the 2008 Discussion Paper based on version 1.1 of the model had concluded.

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.⁹⁵ It notes that Telstra has not made the TEA model and related information available to Optus in a manner which allows full, 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 confidentiality arrangements. Further, Optus notes that a number of basic errors have been identified in the model by the ACCC and the model has been updated several times to address these.⁹⁶

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. Due to the lack of information, the user cannot vary network architecture and test the level of efficiency in the design or verify the operation of the model against 'real' network data. Optus concludes that the TEA model's use of cable segment lengths is not a transparent process.⁹⁷

In light of these views, Optus submits that the ACCC must place less weight on the model in setting ULLS access prices to the extent that the ACCC should not have regard to the TEA model.⁹⁸

In a report prepared for Optus, Network Strategies considered that the TEA model is not as transparent as it would usually expect in a regulatory model. 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). 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

⁹⁴ Ibid., p. 7.

⁹⁵ Optus, *Optus submission*, August 2008, p.. 23.

⁹⁶ Ibid., pp. 23 - 24.

⁹⁷ Ibid., pp. 25 - 26.

⁹⁸ Ibid., p. 24.

quality.⁹⁹ However, Ovum noted a number of inconsistencies between the model documentation and the model implementation.¹⁰⁰ It also notes that there is no documentation for the Access database and suggest that this should be made available.

In regard to the flexibility of the model, Network Strategies notes that it is not possible to vary the network architecture.¹⁰¹ It also took the view that 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. The ACCC notes however that Network Strategies did not provide evidence to substantiate this view. In contrast, Ovum considered that the TEA model provides the user with an appropriate level of flexibility to change specific parameters.

Ovum also took the view that the overall reactions to changes in key inputs in the model are consistent with its experience, economic intuition and financial principles. Network Strategies also took the same view.¹⁰² However, the TEA model contains errors such as missing links where some inputs into the model have been hard coded and changes to these inputs have no impact on the monthly ULLS cost.¹⁰³ 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.¹⁰⁴

Ovum also considered that the lack of pre-processing of the cable data in the input dataset is a serious concern resulting in more cable and conduit being placed than is necessary. The data design is not optimal and a formal redesign of the data would be beneficial.¹⁰⁵

Network Strategies notes that the TEA model does not provide any details of efficient routes and therefore there is no way of verifying that the routes used in the model are indeed efficient. Further, it takes the view that the TSLRIC calculation is not correctly implemented in the model. Network Strategies considers that the TSLRIC calculation should only include the average ULLS cost, rather than the weighted average over both the ULLS (copper-based) and the basic service (fibre-based). In addition, it considers

⁹⁹ Marsden Jacob Associates, *Review of the TEA model – A report prepared for Competitive Carriers Coalition, (CCC Review)* 12 August 2008, p. 4. Network Strategies, *Report for Optus – Review of Telstra TEA model version 1.1 – ULLS undertaking, (Report for Optus)* 2008, pp. ii-iii, 13-16, Ovum, *Review of the operability of the Telstra Efficient Access cost model, A report to the ACCC*, 6 August 2008, p. 4.

¹⁰⁰ Ovum, *Operability review*, 6 August 2008, p. 4.

¹⁰¹ Network Strategies, *Report for Optus*, 5 September 2008, pp. ii-iii, 13-16,

¹⁰² Ibid.

¹⁰³ Ovum, *Review of the economic principles, capital cost and expense calculations of the Telstra Efficient Access cost model, A report to the ACCC*, 6 August 2008, pp. 21-22, 51-52; Ovum, *Operability review*, 6 August 2008, pp. 29-30.

¹⁰⁴ Ovum, *Operability review*, 6 August 2008, pp. 8-9.

¹⁰⁵ Ovum, *Review of the network design and engineering rules of the Telstra Efficient Access cost model, A report to the ACCC*, 6 August 2008, pp. 4-5.

that the full cost of the distribution network should be allocated to all ULLS and basic service fiber-fed services, rather than just to the ULLS.¹⁰⁶

The ACCC's 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 so the model can 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.¹⁰⁷
- 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.¹⁰⁸

The ACCC considers that most of the TEA model calculations are well-documented but could be improved with access to documentation for certain aspects of the model (such as the Access database). The ACCC also agrees with Ovum's assessment that the TEA model is generally easy to use.

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 good model features may assist parties to better scrutinise the TEA model so that they may make well-informed comments. However, the ACCC notes that these good model features would be undermined if the TEA model does not contain accurate material.

¹⁰⁶ Network Strategies, *Report for Optus*, 5 September 2008, pp. ii-iii, 13-16.

¹⁰⁷ ACCC, *Telstra's access undertaking for the unconditioned local loop service – Discussion Paper*, June 2009, p.25.

¹⁰⁸ Telstra, Letter to the ACCC titled '*Telstra's ULLS Undertaking and the Telstra Efficient Access (TEA) Model*', 10 September 2008.

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.

As Telstra submits the TEA model in support of its 2008 Undertaking, responsibility for notification of any errors and required changes in the model to the ACCC and industry, rests with Telstra. The ACCC expects Telstra to continue to inform interested parties of TEA model errors in a transparent and prompt fashion.

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 1.2 for external advisors/consultants with a non-commercial role and version 1.1.1 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, timely analysis and comment on the 2008 Undertaking and the TEA model. The ACCC notes that only six individuals gained access to the full version of the TEA model. This compares to a total of forty-six individuals who gained access to the redacted version of the TEA model.¹⁰⁹ 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.

Through the process of assessing the 2008 Undertaking, the ACCC will also continue to carefully monitor Telstra's confidentiality arrangement process.

B.2 Network design and engineering rules

TEA model implementation

The network design assumptions and engineering rules provide the underlying basis for determining ULLS network costs.

¹⁰⁹ Count of individuals as at 8 August 2008.

Telstra submits that the TEA model represents its actual existing network, which is based upon Telstra's records of the locations of its equipment and customers, rather than a hypothetical lay-out of its network.

Telstra has also stated that for the purposes of the TEA model it is assumed that the following network structure components of the existing network are retained

- the exchange location
- distribution area boundaries
- pillar locations
- customer locations and
- distribution and main cable routes.

In the model the distribution main cable routes are an optimised subset of the existing main cables and conduit routes that use existing rights of ways from the exchange to the pillars and from the pillar to the customer premises.

As the actual location of pillars is assumed, Telstra submits that the TEA model does not apply a conventional scorched node approach:

...the network in this model is based on the locations of the pillars in Telstra's network. As such, this model does not adhere to the "scorched node" approach, which is common to other cost models. In keeping with the hypothetical nature of the networks and customer locations in other models, the scorched node approach ignores the locations of nodes in the "outside plant" portion of the network.¹¹⁰

Telstra submits that the model is forward-looking in that the model determines efficient routes between network structure points and applies best-practice, widely used, forward-looking engineering practices to determine the plant and equipment needed for providing ULLS.¹¹¹

Submissions

Network design

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.¹¹² 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

¹¹⁰ Professor R.G.Harris, *Use of the TEA model in ULLS Costing and Pricing*, 21 December 2007, p. 9.

¹¹¹ Telstra, *ULLS Undertaking is Reasonable*, 4 April 2008, p. 3.

builder would face. Telstra considers that the long-run perspective of TSLRIC+ requires the factors of production in the network to be variable while certain geographic or physical constraints are fixed.¹¹³

Telstra submits that in statutory assessment of its 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.¹¹⁴

Other parties

Modelling approach

MJA notes that the methodology used in TEA model is to develop a model of access network costs based on Telstra's existing network design and actual network costs, while allowing for a degree of optimisation.¹¹⁵ MJA submits this approach is unlikely to suffer from the assumptions required for a theoretical network structure which can lead to erroneous results, 'but may - depending on the use of the information - incorporate inefficiencies'.¹¹⁶ Further, MJA submits it has reservations about the degree of optimisation in the network design.¹¹⁷

MJA submits that the TEA model should be reconciled with an alternative 'bottom-up' TSLRIC network model which incorporates efficiencies not implemented in the TEA model.¹¹⁸ 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.¹¹⁹ 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.¹²⁰

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'.¹²¹ 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'.¹²² Optus acknowledges

¹¹² Telstra, *Response to Discussion Paper*, 12 August 2008, p. 10.

¹¹³ Ibid. p 11.

¹¹⁴ Ibid.

¹¹⁵ Marsden Jacob Associates, *CCC Review*, 12 August 2008, p. 6.

¹¹⁶ Ibid.

¹¹⁷ Ibid.

¹¹⁸ Ibid., p 3.

¹¹⁹ Ibid.

¹²⁰ Ibid.

¹²¹ Optus, *Optus submission*, August 2008, p 38.

¹²² Ibid.

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.¹²³

In the a report commissioned by the ACCC which reviews the economic aspects of the TEA model, Ovum submits that the TEA model is a hybrid model between standard bottom-up and top-down.¹²⁴ 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.¹²⁵

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'.¹²⁶ 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.¹²⁷

MJA submits 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'.¹²⁸ MJA submits that by limiting the TEA model to the technology of copper it 'fails the basic test inherent in the TSLRIC concept'.¹²⁹

Ovum notes that the:

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

¹²³ Ibid., p 39.

¹²⁴ Ovum, *Economic review*, p. 5.

¹²⁵ Ibid., p.9.

¹²⁶ Marsden Jacob Associates, *CCC Review*, 12 August 2008, p. 1.

¹²⁷ Ibid.

¹²⁸ Ibid, p 5.

¹²⁹ Ibid.

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.¹³⁰

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 a network constructor building such a network today.¹³¹

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.¹³²

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.¹³³ Telstra also submitted a comparison of network equipment in the TEA model and in Telstra's inventory records.¹³⁴

Telstra submits that the TEA model is forward looking in the context that it uses actual location of pillars and the existing distribution area 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.¹³⁵ 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.¹³⁶

Other parties

¹³⁰ Ovum, *Economic review*, p. 10.

¹³¹ Telstra, *Response to Discussion Paper*, 12 August 2008, p.10.

¹³² *Ibid.*, p 14.

¹³³ *Ibid.*, p12.

¹³⁴ Telstra, *Measure of TEA model efficiency, ULLS band 2*, 8 September 2008.

¹³⁵ Telstra, *Response to Discussion Paper*, 12 August 2008, p. 14..

¹³⁶ *Ibid.*

MJA submits that it largely agrees with the network components retained by Telstra in the network design in the TEA model with the exception of retention of the pillar locations.¹³⁷

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.¹³⁸

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.¹³⁹

Network Strategies submit that in general Telstra has used appropriate assets in the model, however, the use of assets is not optimised.¹⁴⁰ Further, that there is a degree of over-provisioning in the network.¹⁴¹

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..¹⁴²

Submissions on particular optimisation and efficiency 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.¹⁴³

Pillar locations

MJA submits there may be significant cost efficiencies in allowing pillar locations to vary and be subject to optimisation.¹⁴⁴ This is on the basis that if the pillar is placed close to customer, then the total cable distance is minimised.¹⁴⁵ Ovum submits that

¹³⁷ Ibid, p 7.

¹³⁸ Optus, *Optus submission*, August 2008, p. 34

¹³⁹ Ibid.

¹⁴⁰ Network Strategies, *Report for Optus*, p. 67.

¹⁴¹ Ibid.

¹⁴² Ovum, *Engineering review*, 6 August 2008, p. 3.

¹⁴³ Marsden Jacob Associates, *CCC Review*, 12 August 2008, p. 7.

¹⁴⁴ Ibid., p 6.

¹⁴⁵ Ibid., p. 7.

although there may be some overestimation of pillar sizes the effect is likely to be small.¹⁴⁶

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.¹⁴⁷

Ovum also notes that for efficient design the distribution areas should not overlap.¹⁴⁸

Lead-in cables

MJA also find the fact the model does not use poles for lead-in cables or the distribution part of the network problematic.¹⁴⁹ 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'.¹⁵⁰

Access nodes and cable jointing

Optus submits that the network contains a large number of access nodes and cable joint close together and as cable jointing is particularly expensive, this design characteristic is a source of inflated costs in the TEA model.¹⁵¹

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.¹⁵²

Tapered architecture

Optus and Network Strategies argue 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.¹⁵³ 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.¹⁵⁴

¹⁴⁶ Ovum, *Engineering review*, 6 August 2008, p 12.

¹⁴⁷ Marsden Jacob Associates, *CCC Review*, 12 August 2008, p. 7.

¹⁴⁸ Ovum, *Engineering review*, 6 August 2008, p 9.

¹⁴⁹ Marsden Jacob Associates, *CCC Review*, 12 August 2008, p. 7..

¹⁵⁰ *Ibid.*, p 6.

¹⁵¹ Optus, *Optus submission*, August 2008, p. 37

¹⁵² Ovum, *Engineering review*, 6 August 2008, p 11.

¹⁵³ ,*Optus submission* August 2008, p 37; Network Strategies, *Report for Optus*, pp. 46-47.

¹⁵⁴ Ovum, *Engineering review*, 6 August 2008, p 25..

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.¹⁵⁵ This means that cable paths and consequentially duct placements implemented in the model are inefficient.¹⁵⁶ 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 not consistent with efficient network design.¹⁵⁷

Optus argues 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.¹⁵⁸ Further, Optus submits operators in other jurisdictions use more efficient direct buried and overhead cable distribution.¹⁵⁹

The ACCC's views

The ACCC agrees with commissioned reports, including from Ovum and MJA that as the TEA model reflects Telstra's actual network, this suggests that the model has not been implemented using the most efficient network build. 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 sheaths). However, the ACCC's view is that the evidence provided by Telstra does not suggest that the TEA model network design reflects an efficient network of a hypothetical operator - the evidence suggests that the TEA model is more efficient than the existing Telstra network.

The ACCC considers that access charges that represent the forward-looking costs of an efficient provider best promote competition. The ACCC's pricing principles make this clear in the adoption of a TSLRIC+ methodology. This is because, over the long run, forward-looking efficient costs lead to conditions which allow the access provider and access seekers to compete in downstream markets on their relative merits. The ACCC does not consider that the costs of the existing network reflect forward-looking costs as they reflect past investment decisions that are not assessed for relevance or adjusted for efficiency.

Further, the ACCC's view is that where access prices are based on actual network costs, rather than the costs of an efficient network, the resulting access prices will not reflect the efficient costs of providing the service and will not encourage appropriate build/buy decisions. Therefore, the object of promoting efficient investment is not achieved when costs of Telstra's existing network, without taking account of efficiency savings, are used to determine costs of providing the ULLS.

¹⁵⁵ Ibid., pp. 6-7.

¹⁵⁶ Ibid., p 8.

¹⁵⁷ Ibid.

¹⁵⁸ Optus, *Optus submission*, August 2008, p. 37.

¹⁵⁹ Ibid., p 39.

The ACCC considers that, although it is unlikely that a hypothetical entrant today would build a copper network, there is still a need to determine a price for the ULLS. The ACCC's view is that, while a pure implementation of TSLRIC would involve using technology such as wireless or optical fibre, a pragmatic implementation of TSLRIC methodology involves determining ULLS pricing based on a copper network.

The ACCC considers that given the starting point of scorched node and the need to model a copper network, the TEA model is broadly based on a best practice engineering rules and practices. However design and implementation issues mean the extent of the efficiencies in the model is not as extensive as claimed by Telstra. The ACCC also notes that Telstra's application of its TEA model does not incorporate all efficiencies and optimisations that would be theoretically possible using efficient forward-looking technology.

B.3 Cost valuation

Telstra's proposed network input costs

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.¹⁶⁰

Telstra also applies a default loading factor for indirect overhead costs of 13 per cent to some capital inputs. For example, conduit costs are composed of the sum of the conduit cost, the breakout and reinstatement costs and the indirect overheads.

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. This means 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 only six individuals gained access to the full version of the TEA model. This compares to a total of forty-six individuals who gained access to the non-confidential version of the TEA model.¹⁶¹

Submissions

Cost estimates in the TEA model

Telstra

Telstra submits that the cost estimates in the TEA model reflect the efficient 'replacement' cost of the CAN.¹⁶² This is on the basis that rates for plant and equipment are obtained from Telstra's actual external contractor rates.¹⁶³ Telstra argues that as the rates for plant and equipment are efficient competitive prices, the TEA model by using these rates, calculates the current market price of replacing the CAN.¹⁶⁴

In relation to overhead costs, Telstra submits that these costs are efficient and forward-looking as they are based on Telstra's recent experience.¹⁶⁵

Other parties

¹⁶⁰ Telstra, *Telstra ULLS Undertaking is Reasonable*, 4 April 2008, p. 3.

¹⁶¹ Count of individuals as a 8 August 2008.

¹⁶² Telstra, *Response to Discussion Paper*, 12 August 2008, p. 15.

¹⁶³ Ibid.

¹⁶⁴ Ibid., p. 16.

¹⁶⁵ Ibid.

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.¹⁶⁶

Network Strategies submit that the two key costs in the model, trenching and copper cable, appear to be high.¹⁶⁷

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 Access and Associated Services ("A&AS") agreements.¹⁶⁸ MJA submits that Telstra has not supplied documentation to support its claims of efficient costs.¹⁶⁹

MJA observes that the cost factors used in the TEA model lack detail and are provided for very large cost categories.¹⁷⁰ In particular, MJA submits that it is unclear whether Telstra has considered the large cost difference between boring and trenching in implementing the model.¹⁷¹ The basis for increasing costs of manholes and pits on a per square meter basis is also highlighted by the report as being unclear and possibly not correct.¹⁷²

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.¹⁷³ 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.¹⁷⁴ Further, MJA observes that certain cable sizes have costs that are excessive relative to other cable sizes.¹⁷⁵

In contrast, Ovum's comparison of the cost of the modern equivalent asset to historic costs used in the TEA model indicates that overall the cost of cable is broadly in line

¹⁶⁶ Optus, *Optus submission*, August 2008, p. 40.

¹⁶⁷ Network Strategies, *Report for Optus*, p. 68

¹⁶⁸ Ovum, *Economic review*, 6 August 2008, p10.

¹⁶⁹ Marsden Jacob Associates, *CCC Review*, 12 August 2008, p. 2..

¹⁷⁰ *Ibid.*, p. 2.

¹⁷¹ *Ibid.*, p. 8.

¹⁷² *Ibid.*

¹⁷³ Optus, *Optus submission*, August 2008, pp. 40-41.

¹⁷⁴ *Ibid.*, p. 41.

¹⁷⁵ Marsden Jacob Associates, *CCC Review*, 12 August 2008, p. 8..

with international benchmarks.¹⁷⁶ 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 modern equivalent assets 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.¹⁷⁷

Loading factor for indirect overheads

Telstra submits that overhead costs included in the TEA model (as a factor of total costs) are efficient and forward looking as they are based on Telstra's recent experience.¹⁷⁸ Telstra also submitted confidential witness statements in support of its calculation for indirect overheads.¹⁷⁹ 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.¹⁸⁰

MJA comments that Telstra's description of overhead costs is vague and should not be accepted without further documentation.¹⁸¹ Optus states that it lacks the appropriate information to comment on Telstra's indirect overheads, but may comment in the future.¹⁸²

Ovum comments that although the mark-up for indirect overheads is high compared to other models, it can be considered as acceptable.¹⁸³ Network Strategies also submits that the mark-up is high but is not able to comment further without additional information.¹⁸⁴

Replacement cost methodology

The Chime submission argues that given the Federal Government's National Broadband Tender, Telstra's TEA model cannot be realistically described as 'forward-

¹⁷⁶ Ovum, *Economic review*, 6 August 2008, p 11.

¹⁷⁷ Ibid., p 11.

¹⁷⁸ Telstra, *Response to Discussion Paper*, 12 August 2008, p. 16.

¹⁷⁹ Ibid., p.17.

¹⁸⁰ Ibid.

¹⁸¹ Marsden Jacob Associates, *CCC Review*, 12 August 2008, p. 13.

¹⁸² Optus, *Optus submission*, August 2008, p. 42.

¹⁸³ Ovum, *Economic review*, 6 August 2008, p 51.

¹⁸⁴ Network Strategies, *Report for Optus*, p. 69..

looking' model as it 'is based upon the obsolete copper network' and consequently the replacement cost methodology (**RCM**) is no longer relevant.¹⁸⁵

In these circumstances, a RCM is no longer an appropriate cost model because no access provider, hypothetical 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.¹⁸⁶

The ACCC's views

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 should be lower and Optus' submission that the cost of cable used in the TEA model is high. With regard to indirect overheads, the ACCC notes that such a mark-up can be arbitrary and believes that Ovum's finding that the mark-up is acceptable when compared to international benchmarks is appropriate.

The ACCC also notes that Telstra has included the cost of a 2 pair lead-in of \$282.91 to network costs. The ACCC's preliminary view is that this cost should not be included in the cost of providing the ULLS. As noted in the 2005 Undertaking Final Decision¹⁸⁷, Telstra has previously submitted that the cost of lead-ins is recovered through connection charges.¹⁸⁸ 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;¹⁸⁹ and
- lead-in costs may already be recovered in O&M costs.

The ACCC also notes that the TEA model includes entrance facility costs to total network costs. These costs should not be included in total network costs of providing the ULLS as these costs are already recovered in TEBA charges.

¹⁸⁵ Adam Internet et al, *Response to ACCC ULLS Discussion Paper*, p. 9.

¹⁸⁶ Ibid.

¹⁸⁷ ACCC, *2006 Final Decision*, p. 66.

¹⁸⁸ Telstra, *Telstra's Detailed submission in support of its PSTN OTA and LCS Undertakings dated 9 January 2003*, 31 July 2003, p.31.

¹⁸⁹ 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, p.7.

B.4. Trenching costs

Trenching costs represent a significant network cost component incurred in providing the ULLS. The TEA model provides for estimates in relation to:

- 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 ratios¹⁹⁰ to reflect the environment in which construction of a new CAN network would take place, depending on the type of ground surface 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 ground surfaces and that these reflect the current efficient market rate.¹⁹¹

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.¹⁹²

Telstra also submits that there are a number of statutory obligations which they and any access seeker would face, with respect to reinstatement.¹⁹³ 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.

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 ground surfaces are reasonable on the basis that:

¹⁹⁰ Telstra, *Telstra's Efficient Access Model - Model Documentation*, 3 March 2008, p. 48.

¹⁹¹ *Telstra Response Discussion Paper*, 12 August 2008, p. 18.

¹⁹² *Ibid.*

¹⁹³ 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*.

- competition is promoted where access prices do not discriminate between access seekers and 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.¹⁹⁴

Telstra states that the ratios used for breakout, placement and reinstatement 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 the proportion of cable which would traverse existing streets.¹⁹⁵

Telstra also asserts 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.¹⁹⁶

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.¹⁹⁷

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.¹⁹⁸

¹⁹⁴ Ibid., p. 19 & 20.

¹⁹⁵ Ibid., p. 21 & 22.

¹⁹⁶ Ibid., p. 22.

¹⁹⁷ Optus, *Optus submission*, August 2008, p. 44 & Adam Internet et al, *Response to ACCC ULLS Discussion Paper*, p 10.

¹⁹⁸ Ibid.

MJA in its review of the TEA model concluded that there was merit in Telstra's approach 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 submit 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.¹⁹⁹ (Discussed further in section B.7.)

Optus and Ovum contend that the model assumes that all trenching would take place in Band 2 ESAs that have the same per cent of rocky terrain, thereby increasing costs above those actually incurred.²⁰⁰

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 network, Ovum submits that, with careful planning, many of these costs would be avoided. Ovum cite 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.²⁰¹

Network Strategies contend 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.²⁰²

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 submits 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 opines 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.²⁰³

The ACCC's views

It is the ACCC's view that the 'efficient investment' objective will in general be promoted by the use of a forward-looking cost basis in determining network costs.

¹⁹⁹ Marsden Jacob Associates, CCC Review, 12 August 2008, p. 9.

²⁰⁰ Optus, *Optus submission*, August 2008, p. 43. & Ovum, *Engineering review*, 6 August 2008, p. 36.

²⁰¹ Ovum, *Economic review*, 6 August 2008, p. 38.

²⁰² Network Strategies, *Report for Optus*, 5 September 2008, p. 69.

²⁰³ Adam Internet et al, *Response to ACCC ULLS Discussion Paper*, p. 9.

An important reason for preferring forward-looking costs estimates as a basis for access pricing is that access prices based on forward-looking costs will be more likely to lead to an efficient 'build-or-buy' investment decision by access seekers. The costs relevant to an access seeker deciding whether or not to build its own network are forward looking costs as currently evaluated, as these are the costs that the access seeker would actually have to incur if it constructed its own competing facilities, and the costs that it could avoid seeking access to existing facilities instead.

However, the ACCC recognises that there will be sets of circumstances where forward-looking costs do not adequately promote the objectives of the criteria that the ACCC must have regard for in determining whether the undertaking is reasonable. The ACCC is of the view that this is such a circumstance.

Telstra has proposed that forward-looking costs should include the retrenching and re-paving of trenches where local copper pairs were initially laid. However, the ACCC agrees with Optus submission that Telstra did not incur trenching costs of the same magnitude as those modelled in the TEA model since, for example housing estate developers excavated many of the trenches which Telstra use.²⁰⁴ Therefore by allowing Telstra to include these cost as part of the TEA model would result in Telstra being compensated for costs that it (in most cases) never incurred and is not likely to incur within the economic life of the existing copper pairs.

For example, when considering this issue in the context of greenfield estate, the ACCC does not consider the following scenario as reasonable:

- On Friday, Telstra lays the local copper pairs for a new estate, Telstra then seeks a certain rate of return on the assets which are valued at x , from the ACCC.
- On Monday, Telstra return to the ACCC with an increased asset value of $x + y$ on the basis that over the weekend the value of the assets has increased because the council or property developer have back-filled the trenches and laid concrete footpaths.

The ACCC notes that when Telstra developed the TEA model it sought to use actual costs incurred as a basis for determining efficient forward looking costs. However, Telstra has not provided any evidence of incurring costs for the breakout, placement and reinstatement of terrain for new network installations and has only provided evidence of the costs a contractor would charge Telstra for this activity.

The ACCC also notes Telstra's statement that in greenfield estates the developer provides trenches for the laying of a new network, which are shared with other utility providers, and that these costs are not included in the TEA model. This leads the ACCC to question where trenching costs have legitimately been incurred by Telstra in the provision of new networks.

In conclusion, the ACCC believes that the inclusion of trenching costs, where they have not been incurred by Telstra, will lead to access prices which discriminate between

²⁰⁴ Optus, *Optus submission*, August 2008, p. 44.

access seekers and access providers which is not in the LTIE. Access prices should be set so as to allow more efficient sources of supply to displace less efficient sources of supply in dependent markets. In this regard, if an incumbent is allowed to recoup surface barrier costs that it does not incur, it will have little incentive to efficiently invest in infrastructure. Further, at an inflated access price, access seekers will look to build and not buy, when it may be more efficient to buy.

Due to these fundamental concerns with the model, the ACCC does not believe the trenching costs included in the model are reasonable.

B.5 Trench sharing

Trench sharing has the overall effect of reducing the costs of trenches in the provision of fixed line network services as the initial costs of digging the trench are shared amongst different entities. The TEA model provides for three types of trench sharing:

- sharing of the entrance facility costs between the inter-exchange and distribution network. The TEA model has a default value of 5 per cent
- sharing with utilities in new estates. The TEA model has a default value of 1 per cent
- sharing of trenching and conduit between fibre main cable and copper main cable.

Sharing between the IEN and CAN is likely to reduce the total trench length, while the sharing with utilities is likely to reduce the costs allocated to ULLS. 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.

Submissions

Trench sharing with utility providers

Telstra

Telstra submits that where a developer provides trenches for green-field 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.²⁰⁵

Telstra contends that 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
- requirements for separation between equipment may require trenches which are wider and/or deeper than standard trenches, negating any benefits of sharing
- sharing can only occur where the carrier and utility providers intend laying infrastructure along the same route and
- sharing with utilities creates unique risks. For example a burst water main can cause significant problems for telecommunications cables and means that trenches are rarely shared.²⁰⁶

²⁰⁵ Telstra, *Response to Discussion Paper*, 12 August 2008, p. 22.

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.²⁰⁷

Telstra notes the ACCC’s previous position that trench sharing should be treated on a new entrant basis but with the TSLRIC reflecting accumulated cost savings. This means that trench sharing in the new estates is assumed to occur over a period of years as a new entrant would be unable construct the CAN in one year.²⁰⁸

Telstra submits that the ACCC should not have regard to historical trench sharing figures under a forward looking framework on the basis that:

- such an approach assumes a progressive rollout from the start of the undertaking period and 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
- 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
- the TEA model include efficiencies of scale and scope which would not be available to an entrant with a small market share and who is seeking to build up its market share over a decade or more.²⁰⁹

Accordingly, Telstra submits that adopting a historic cost approach to estimating the extent to which trench sharing is possible with new estates would be inconsistent with the statutory criteria and with the principles of TSLRIC+.²¹⁰

Telstra also submits that while in greenfield estates they use the trenches provided by the developer and while 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

²⁰⁶ Ibid., pp. 22-23.

²⁰⁷ Ibid., pp. 23-24 & p. 29.

²⁰⁸ Ibid., p. 24.

²⁰⁹ Ibid., pp. 23 - 24.

²¹⁰ Ibid., p. 24.

TEA model costs.²¹¹ 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 2.²¹²

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.²¹³ Adam Internet et al acknowledge that in seeking to share trenches with utility providers that safe clearance distances would need to be observed, but this should not prevent the sharing of trenches.²¹⁴

Adam Internet et al submit that when installing low-impact telecommunication facilities such as underground cables, the legislative framework²¹⁵ 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 for the same land. Adam Internet et al submit that the TEA model ignores this obligation.

MJA submit 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 advanced. As such, MJA submits that sharing with utilities should be allowed across the entire network.²¹⁶

Optus submits that the TEA model is inconsistent in its application of TSLRIC+ in relation to new estate trenching as TEA model costs are based on a forward looking new entrant rebuilding the network today, but also requiring 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.²¹⁷

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.²¹⁸ Optus submits that

²¹¹ Ibid., p. 29.

²¹² Ibid., p. 26.

²¹³ Optus, *Optus submission*, August 2008, p. 47 & Adam Internet et al, *Response to ACCC ULLS Discussion Paper*, p 11.

²¹⁴ Adam Internet et al, *Response to ACCC ULLS Discussion Paper*, p.11.

²¹⁵ *Telecommunications Act 1997, the Telecommunications Code of Practice 1997 and the Telecommunications (Low-impact Facilities) Determinations 1997.*

²¹⁶ Marsden Jacob Associates, *CCC Review*, 12 August 2008,, p. 10.

²¹⁷ Optus, *Optus submission*, August 2008, p. 47.

²¹⁸ Ibid., p. 48.

collectively, these concerns with the TEA model mean that there is likely to be a significant overestimation of the efficient cost of supply.

While Network Strategies submit, based on their experiences, that the TEA model significantly underestimates the level of trench sharing overall, they consider 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.²¹⁹

Trench & conduit sharing

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.²²⁰

Telstra submits that there is limited potential for sharing between 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.²²¹

Telstra contend that 10 per cent of trenches and conduits in the main network are shared by the main distribution network and the IEN, but that 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.²²²

Telstra submits that their approach as described in the *TEA Model Documentation* accounts for the sharing between the non-ULLS distribution areas (DA) and the ULLS DAs by ensuring that all DAs in each ESA share the costs proportionately. Telstra submit that this results in a small proportion of optical fibre, multiplexing and fibre

²¹⁹ Network Strategies, *Report for Optus*, 5 September 2008, p.71.

²²⁰ Telstra, *Response to Discussion Paper*, 12 August 2008, p. 26-27.

²²¹ *Ibid.*, p. 27.

²²² *Ibid.*

termination costs being allocated to ULLS and conversely, some amount of copper ULLS network costs are spread over the fibre only fed DAs.²²³

Where conduit space is available, Telstra states that it is their policy to lease this space when requested. Where space is leased Telstra state that they subtract the annual revenues received and that the revenues are allocated on a band by band basis.²²⁴

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.²²⁵

Telstra submits that the trench sharing factor and the trench sharing with utility providers leads to an input factor of 7.1 per cent. Telstra also submits that they have assumed that no excavation or reinstatement is necessary when placing facilities because the trench as excavated or reinstated either by the developer of the new estate or in order to place facilities for the route with which is the trench is shared.²²⁶

Other parties

MJA contend that sharing may occur between the distribution network trench and inter-exchange trench and between the main cable trench and inter-exchange trench, although to a lesser degree than the former. They also identify manholes as further infrastructure which may also be suitable for sharing.²²⁷

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 main distribution frame block should be allocated to the CAN.²²⁸ The ACCC notes that Telstra have revised this in the TEA model version 1.2.

MJA submits that, overall, Telstra's inputs for trench sharing are likely to be underestimated.²²⁹

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:

²²³ Ibid.

²²⁴ Ibid., p. 28.

²²⁵ Ibid., p. 30.

²²⁶ Ibid.

²²⁷ Marsden Jacob Associates, *CCC Review*, 12 August 2008, p.10.

²²⁸ Ibid.

²²⁹ Ibid., p. 9.

- the inputs into the model make no reference to how they are calculated. Ovum submits that it would be expected that the 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.²³⁰

The ACCC's view

The ACCC notes Telstra's view that only 1 per cent of trenches are available in new estates each year, and as such it is inappropriate to have regard to Telstra's historical trench sharing figures.

The ACCC considers that, when applying the TSLRIC framework in a practical sense, forward looking network costs need to reflect the realities of network deployment and that it is not possible for the CAN to be constructed in one period (or instantaneously). The ACCC view is 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 at no cost to Telstra. The ACCC considers that based on a pragmatic application of TSLRIC, it is appropriate to maintain its position that the best available proxy for trench sharing in new estates is the cumulative (historic) trench sharing measure. In this regard the ACCC considers that a trenching sharing value of between 13-17 per cent approximates cumulative trench sharing potential in new estates.²³¹

The ACCC notes Telstra's concerns regarding their limited ability to share trenches outside of new estates. The ACCC also notes that the trench sharing in new estates does not take into account sharing beyond this, or between the IEN and CAN.

Telstra, in their submission, state that there is limited ability to share trenches outside of new estates. However, the ACCC notes that on Telstra's website that in their guidance to new home builders that:

...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.²³²

As such, the ACCC considers this gives further weight to the view that the level of trench sharing is above that stated by Telstra in the 2008 Undertaking application and that 1 per cent for trench sharing in new estates is unreasonable.

²³⁰ Ovum, *Economic review*, 6 August 2008, p. 14.

²³¹ This figure has been re-calculated to include data up to 2006-07.

²³² http://www.telstra.com.au/moving_home/newhome.cfm, Accessed 30 September 2008.

The ACCC notes that submissions in response to the Discussion Paper with respect to sharing of trenches and conduits only raised concerns in relation to the cost allocation of ironwork for the mainframe distributions. This has been acknowledged by Telstra and rectified in TEA model version 1.2, with the level of sharing between the IEN and CAN. Therefore, the ACCC consider the percentage of sharing between the IEN and CAN as reasonable.

B.6 Operations and maintenance and indirect cost factors

The TEA model relies on historical cost values taken from the 2005-06 RAF account data that is aggregated across all services (including mobiles) and all geographic areas for O&M and indirect cost factor inputs.

The TEA model uses a total sum of costs for all RAF products, including and without making distinctions between internal retail business services and its external wholesale business in determining O&M and indirect cost factors.

Submissions

Telstra

Telstra submits that the O&M expenses included in the TEA model are derived from the RAF accounts for all regions and services supplied are reasonable on the basis that:

- the TEA model links O&M costs to direct investment costs, therefore a greater amount of O&M expense will be allocated to geographic area where direct investment is high;
- Telstra is able to use its economies of scope (and scale) associated with supplying many different networks and that O&M expenses would be higher if they were calculated on a standalone CAN basis; and
- the O&M derived, if applied across services in different geographical areas consistently ensures no under or over counting in different costs models.²³³

Telstra submits that applying O&M factors, including the fibre in 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.

Further, Telstra contends that the total sum of all directly attributable, attributable and non-attributable costs should be included 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.²³⁴

Telstra submits that it is appropriate to use historic costs to calculate factor cost. Telstra contends that costs would be understated if assets were modelled to be brand new,

²³³ Telstra, *Response to Discussion Paper*, 12 August 2008, p. 31.

²³⁴ *Ibid.*, p. 32.

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.

Telstra also 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 note that the RAF does not include a separate asset category for fibre optic cable in the CAN.²³⁵

Telstra notes that the adjustments applied to O&M and indirect factors are set out in the *Operations and Maintenance and Indirect Cost Factors Study*. Telstra submit that the adjustments made to investment costs for Ducts and Pipes and Copper Cables are appropriate as the historic costs of these assets is less than the TSLRIC costs and if the adjustments were not made then O&M costs would be overstated in the TEA model.

Telstra contend that 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.²³⁶

Other parties

MJA supports Telstra's view that the expenses included in the calculations of the cost factors should be O&M expenses only relevant to the ongoing monthly ULLS charge. MJA do not consider that there are sufficient grounds for accepting Telstra's 10 per cent reduction on their actual O&M expenses. Further, MJA contend that the TEA model should only include efficiently incurred costs.²³⁷

MJA submit that they have been unable to distinguish in Telstra's RAF between efficiently and inefficiently incurred costs. MJA submits that there may be reasons for Telstra incurring inefficiently incurred costs including Telstra not using an modern equivalent asset whether it be moving to fibre or a newer copper cable along with inefficient processes for dealing with faults are repairs.²³⁸

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 contend that Telstra's detailed understanding of the network would greatly assist in such analysis.²³⁹

MJA considers there is insufficient transparency to allow for a full understanding and endorsement of the methods used to calculate indirect costs and these costs estimated should not be accepted without further documentation to ensure that there is no double counting. MJA cite lack of information on deductions made by Telstra to indirect asset factors and rules used to share costs which are common or shared between the ULLS

²³⁵ Ibid., p. 33.

²³⁶ Ibid., p. 34.

²³⁷ Marsden Jacob Associates, *CCC Review*, 12 August 2008, p. 12.

²³⁸ Ibid.

²³⁹ Ibid., p. 13.

and other services and lack of information on the categories used regarding cost categories included to support this view.²⁴⁰

Optus submits that the O&M mark-up factors used in the TEA model overstate the efficient O&M cost of the ULLS for three primary reasons:

- the mark-up factors are calculated from depreciated network asset values in the RAF accounts while O&M costs in the RAF accounts are not depreciated leading to inflated mark-up factors;
- the O&M mark-up factors is based on Telstra's legacy network which does not involve the use of modern equipment and efficient practices that a new efficient entrant would use; and
- rural O&M costs in Optus' experience 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.²⁴¹

Accordingly, Optus contend that the costs produced by the TEA model will overestimate the efficient supply costs of ULLS.

Network Strategies notes that Telstra state O&M costs are 10 per cent below actual O&M costs allocated to the ULLS in the RAF. However, Network Strategic contend that once having removed costs that should not be allocated to ULLS such as multiplexing equipment, the TEA actually produces O&M costs which are 6.5 per cent high than those in Telstra's RAF O&M costs.²⁴²

Network Strategies note that Telstra have 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.²⁴³

Ovum submits that Telstra should have used 2006-07 RAF data in the TEA model. While they acknowledge that their 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.²⁴⁴

Ovum also contend 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 note that, in the TEA model, the O&M cost factors are higher than historic cost

²⁴⁰ Ibid.

²⁴¹ Optus, *Optus submission*, August 2008, p. 49-50.

²⁴² Network Strategies, *Report for Optus*, 5 September 2008, p. 35.

²⁴³ Ibid., p. 54.

²⁴⁴ Ovum, *Economic review*, 6 August 2008, p. 52.

factors for all plant and equipment types except for 'Ducts and Pipes'. In their 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 have 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 by 1.4 per cent.²⁴⁵

Based on their assessment of the model, Ovum submits that there are a number of other concerns with the model including:

- different methods for calculating input values;
- assumptions that the unit investment cost per line of ULLS Band 1, 3 and 4 are the same as Band 2;
- lack of data consistency for the investment per line of "duct and pipes" and "copper cables" across the work sheets.²⁴⁶

Ovum submits that the lack of consistency raises concerns that the direct investment costs calculations include an amount of support asset investment costs. If this is the case, Ovum contended the model is double counting the network support asset investment costs for Ducts and Pipe and Copper Cables.²⁴⁷

Ovum also submit that 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.²⁴⁸ 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.²⁴⁹ No estimate was made of the effect on costs of these inclusions.

Ovum also notes that depreciation has been eliminated for some of the indirect expenses, but query why, as they are retail costs that depreciation was included in the initial cost calculations.²⁵⁰

Ovum note 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 contend that if the input factor is reduced to the average of these publicly available cost models then a reduction in the monthly cost of 8 per cent will result.²⁵¹

²⁴⁵ Ibid., p.15-16.

²⁴⁶ Ibid., p. 44.

²⁴⁷ Ibid., p. 44.

²⁴⁸ Ibid., p. 46.

²⁴⁹ Ovum, *Engineering review*, 6 August 2008, p. 12.

²⁵⁰ Ovum, *Economic Review*, 6 August 2008, p. 46.

²⁵¹ Ibid., p. 50.

In response to Ovum and Optus, Telstra contend that there has been a misinterpretation of how the factor model has been compiled, and that Telstra has ensure that retail related costs are excluded from the costs associated with ULLS.²⁵²

Telstra also contend that with respect to O&M figures the TEA model uses the total undepreciated historic or future value of the assets and that these amounts were taken from the Fixed Assets statements in the REF reports for the internal and external wholesale businesses.²⁵³

The ACCC's view

The ACCC's conclusion is that the O&M costs in the TEA model do not reflect efficient forward-looking O&M costs.

In deriving costs inputs to the TEA model, Telstra has chosen to use the 2005-06 RAF data and not 2006-07 RAF data, which was available at the time of TEA model was developed. The ACCC considers that in order to reflect efficient, forward looking costs the TEA model should use the most recent RAF data available when calculating cost factors and therefore considers the use of 2005-06 RAF data in the TEA model as an indication that the O&M costs in the model are inefficient and not reasonable.

The ACCC also notes that Telstra has not made any adjustments to the RAF data to take account of Band 2 specific service provisioning 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. However, the ACCC's view is that Band 2 costs are likely to be lower than costs in Bands 3 and 4 and agrees with submissions that it is inappropriate to apply the total value of all services in the RAF across all bands when the 2008 Undertaking only applies to Band 2. On this basis the ACCC concludes that the cost values included in the model are overstated.

Further, the ACCC agrees with Ovum's conclusions that the indirect expenses used as inputs into the TEA model are extremely high relative to other comparable indirect expenses in publicly available costs models used in telecommunications. 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;

Additionally, the ACCC notes 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 accounting classification of those costs. The ACCC does not consider that the inclusion of costs for calculating O&M and indirect factors simply on the basis of their accounting treatment is an adequate justification. 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. On this basis the ACCC considers the O&M cost factor inputs to the TEA model as inefficient.

²⁵² Telstra, *Telstra's Ordinary Undertaking for the Unconditioned Local Loop Service: Modifications in v1.2 of the TEA model*, 10 September 2008, p. 4.

²⁵³ Ibid.

For these reasons, and the significance of these concerns, 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 and are therefore unreasonable.

B.7 Cost of capital

A firm's weighted average cost of capital (WACC) is the value weighted risk-adjusted rate of return on capital required by debt and equity capital providers to the firm. It reflects the return 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:

$$WACC_{Vanilla} = \frac{D}{V} \times E[K_d] + \frac{E}{V} \times E[Ke] \quad (1)$$

$$WACC_{Pre\ tax} = \frac{D}{V} \times E[Kd] + \frac{E}{V} \times \frac{E[Ke]}{(1 - Te(1 - \gamma))} \quad (2)$$

Where:

D = The value of debt

E = The market value of equity

$E[Kd]$ = The required/expected return on debt

$E[Ke]$ = The required/expected return on equity

Te = The effective tax rate of the firm

γ = Gamma = The value of imputation credits

In the above formula, the cost of equity and cost of debt are often calculated as follows:

$$E[Ke] = rf + B_e \times [E(Rm) - Rf] \quad (3)$$

$$E[Kd] = rf + \text{debt premium} + \text{debt issuance costs} \quad (4)$$

Where:

$E[Kd]$ = The required/expected return on debt

$E[Ke]$ = The required/expected return on equity

rf = The risk free rate

B_e = The firm's equity beta

$E(Rm)$ = The required/expected return on the market portfolio

Debt premium = The yield to maturity on benchmark bonds - rf

In addition, Telstra have added equity issuance costs to the amount calculated from formula (3) above. Formula 3 is the equation for the security market line from the capital asset pricing model (CAPM).

In calculating Telstra's pre tax WACC, the ACCC has used Telstra's estimate of its post-tax vanilla WACC. 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).

Telstra has based its estimates of the WACC used in the 2008 Undertaking on the CAPM. Accordingly, 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. Professor Robert Bowman has provided several reports supporting Telstra's proposed WACC. Telstra has also submitted that the ACCC should include an uplift to its point estimate of its WACC when assessing whether Telstra's proposed WACC point estimate is reasonable.

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.7.1.²⁵⁴

Table B.7.1²⁵⁵

Parameter	Point estimate	High estimate	Low estimate
Risk free rate	6.33%	6.33%	6.33%
Debt ratio	30%	30%	30%
Debt risk premium	1.95%	2.10%	1.80%
Debt issuance cost	0.15%	0.22%	0.07%
Cost of debt	8.43%	8.65%	8.20%
Debt beta	0	0	0
Tax rate	30%	30%	30%
Asset beta	0.725	0.825	0.625
Equity beta	1.028	1.170	0.887
Equity issuance cost	0.40%	0.47%	0.27%
Market risk premium	7.0%	8.0%	5.5%
Cost of equity capital	13.93%	16.16%	11.48%
Vanilla WACC	12.28%	13.91%	10.49%
Gamma	0	0	0
Pre tax WACC	16.46%	18.76%	13.94%

ACCC's overall conclusion on Telstra's WACC

The ACCC considers that Telstra's proposed vanilla WACC and the implied pre tax WACC based on Telstra's vanilla WACC parameters and proposed tax rate and gamma (the implied pre tax WACC is henceforth referred to as the pre tax WACC) are not reasonable. In particular, the ACCC is of the view that Telstra's vanilla WACC and the

²⁵⁴ Telstra, *ULLS Undertaking – Weighted Average Cost of Capital (WACC) (Weighted Average Cost of Capital)*, 4 April 2008, p. 45.

²⁵⁵ The last two rows in the Table are not from Telstra's table but added by the ACCC, as Telstra proposed a gamma of zero with no high and low value this has been used for all states.

pre tax WACC are significantly above the estimates that would be derived by common market practices.

Further, the ACCC considers that Telstra has taken a speculative approach to estimating the WACC, using a range of alternate arguments resulting in the WACC being abnormally high.

In this regard, the ACCC's draft view is to reject Telstra's proposed WACC as unreasonable.

It is important to note that the ACCC has not rejected Telstra's WACC proposal on the basis of individual input parameters irrespective of the differential with common market practice or the empirical evidence available. This is because the WACC proposal could still be reasonable even if one or a number of parameters in isolation might seem inappropriate.

The following section provides a discussion on Telstra arguments in support of each of the WACC input parameter values, submissions received about these parameters and the ACCC's assessment of these parameter values.

B.7.1 WACC Input Parameters

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 estimated at market close on 31 December 2007.

Telstra has submitted 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 investment to the regulatory cycle is an inferior approach because of the problems associated with defining the relevant regulatory period.²⁵⁶

Other parties

²⁵⁶ Telstra, *Weighted Average Cost of Capital*, 4 April 2008, p. 11.

Ovum asserts that ex-post observation dates are generally not preferred, as dates that produce higher rates can be selected.²⁵⁷ 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.²⁵⁸

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 2007.²⁵⁹

The ACCC's view

The ACCC considers that the use of 10 year Australian Government bonds as reasonable, although the ACCC generally considers regulated 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. However, in this particular situation leading up to 31 December 2007, the ACCC notes the application or otherwise of an averaging period to calculate the risk free rate is immaterial.

Debt Risk Premium

The debt risk premium (DRP) is derived as the difference between the yield to maturity on the chosen debt proxy and the yield to maturity 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 yield to maturity 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 which is market driven. The Telstra wide DRP at the close of trading on 31 December 2007 was 1.95 per cent.

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.

The ACCC's view

²⁵⁷ Ibid., p. 30.

²⁵⁸ Ovum, *Economic review*, 6 August 2008, p. 29.

²⁵⁹ Ibid.

The ACCC notes the difference between Telstra's proposed DRP and that submitted by Ovum. However, as is the case with the risk free rate, in this particular case the ACCC does not consider the difference in the estimates to be material.

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 on 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 to 22 basis points, with a mid-point of approximately 15 basis points.

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.²⁶⁰ Based on a methodology developed by Allen Consulting Group (ACG)²⁶¹ to calculate debt issuance costs and Telstra's RAF statement, Ovum submits that debt issuance 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.²⁶²

The ACCC's view

The ACCC currently accepts the inclusion of debt issuance costs in the return on debt. 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 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

²⁶⁰ Ovum, *Economic review*, 6 August 2008, p. 25.

²⁶¹ The Allen Consulting Group, *Debt and Equity Raising Transaction Costs*, report to the Australia Competition and Consumer Commission, 2004.

²⁶² *Ibid.*, p. 32.

ULLS assets. The ACCC considers 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.

The ACCC is of the view that Telstra's investment in its CAN has been significant over many years. In addition, given the dependence of key fixed line services on the CAN this would suggest a high valuation of the CAN. 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. As such, the ACCC does not support Telstra's view that a mid-point of 15 basis points per annum is a fair estimate of the transaction cost it would incur to raise debt. On this basis, the ACCC considers that Telstra's debt issuance costs would be at the lower end of Telstra's proposed range.

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 well diversified risky "market" portfolio. The MRP is normally quoted as an annual figure and all discussion here assumes that convention.

In the majority of recent regulatory decisions by the ACCC and other regulators,²⁶³ 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,²⁶⁴ as well as Professor Bowman's report.²⁶⁵

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 U.S. MRP of 5.5 per cent and a country risk premium for Australia of 1.5 per cent;

²⁶³ For example, Table 5.1 in the Australian Energy Regulators 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).

²⁶⁴ 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.

²⁶⁵ 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.

- historical Australian MRP studies support a MRP of 7 per cent;²⁶⁶ 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.

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.

Other parties

Optus submits that Telstra's MRP is excessive, inconsistent with regulatory precedent,²⁶⁷ and would result in an overestimate of efficient cost.²⁶⁸ Optus also cite a report by Competition Economics Group 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).²⁶⁹

Ovum contends that Telstra's proposed market risk premium is high, and contributes to a higher cost of equity.²⁷⁰ In reaching this conclusion, Ovum consider a number of studies, including one by Neville Hathaway²⁷¹ which examines data from 1875 to 2005, and a survey of investment bank brokers²⁷² which covers dates from 2001 to 2006. As such, Ovum believes that 6 per cent is a fair estimate of the MRP.²⁷³

The ACCC's view

The ACCC notes 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. 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 evidence to support an international CAPM or the

²⁶⁶ 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.

²⁶⁷ Optus, *Optus submission*, August 2008, p. 51.

²⁶⁸ *Ibid.*, p. 52.

²⁶⁹ CEG, June 2008, *The Cost of Capital for the NBN*, p.20, Optus, *Optus submission*, August 2008, p. 51.

²⁷⁰ Ovum, *Economic review*, 6 August 2008, p. 26.

²⁷¹ Neville Hathaway, "Australian Market Risk Premium", Capital Research, January 2005, cited in Ovum, *Economic review*, 6 August 2008, p. 33.

²⁷² Ovum, *Economic review*, 6 August 2008, p. 33.

²⁷³ *Ibid.*, p. 34.

use of an American domestic CAPM with a country risk premium for Australia. As such, the ACCC supports Ovum's view that a 6 per cent MRP is a reasonable estimate for the use in an Australian domestic CAPM and notes that this is consistent with recent regulatory decisions.

The ACCC acknowledges that a number of historic based MRP studies demonstrate excess returns on the equities market over the risk free rate 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 2005.²⁷⁴ However, a study by Dimson, Marsh and Staunton 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.²⁷⁵ For these reasons, a forward looking estimate of the MRP could be expected to be lower than the values obtained from historical studies.²⁷⁶ Accordingly, applying such an adjustment would put the forward looking MRP in line with investment banks estimates of around 5 per cent.²⁷⁷

Finally, Telstra has submitted that the Australian bond market has been distorted by excessive demand. The ACCC rejects this argument on two grounds. First, there is no evidence that nominal 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.²⁷⁸ 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.

For these reasons, the ACCC considers that Telstra's proposed MRP of 7 per cent is excessive.

Equity beta (β_e) and Asset beta (β_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

²⁷⁴ Brailsford, Handley, Maheswaran, *A Re-examination of the Historical Equity Premium in Australia*, 2006.

²⁷⁵ Elroy Dimson, Paul Marsh, and Mike Staunton, *Global Evidence on the Equity Risk Premium* *Journal of Applied Corporate Finance* 15(4) 2003.

²⁷⁶ *Ibid.*

²⁷⁷ Neville Hathaway, "Australian Market Risk Premium", Capital Research, January 2005, cited in Ovum, *Economic review*, 6 August 2008, p. 33.

²⁷⁸ 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>

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.

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 some 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. 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.

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 the 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.

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.

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.

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.²⁷⁹

Optus submits that Ofcom's 2005 position paper on British Telecom's (BT's) asset beta should be considered by the ACCC.²⁸⁰ In the paper, Ofcom disaggregates the equity

²⁷⁹ Optus, *Optus submission*, August 2008, p. 52.

beta estimate to reflect the varying levels of risk faced by different areas of BT's business.²⁸¹ 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.²⁸² Optus asserts that the equity beta values set by regulators of other natural monopoly assets should be considered.²⁸³

Optus submits that the selected regional bell operating companies (RBOC) are not reasonable comparators as they have different risk profiles because they provide different services to those provided by Telstra.²⁸⁴ Optus believes a more suitable entity is BT's Openreach division, which had a recent equity beta range of 0.7 to 0.8.²⁸⁵

Following their 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.²⁸⁶ De-levering the equity beta using a Monkhouse formula²⁸⁷ and a debt beta of zero, Ovum recommends an asset beta of 0.32.²⁸⁸

The ACCC's view

The ACCC notes that the overall WACC is sensitive to equity and asset beta values. Further, the ACCC considers that the use of three different methods for estimating beta by Telstra has exaggerated the size of the range of estimates for Telstra's asset and equity beta.

Direct estimation method

The ACCC notes that there are some potential difficulties with using a direct estimation method to calculate equity betas, including selection biases in timeframes or data frequency. However, the ACCC considers that there is scope to conduct a direct estimation of the equity beta.

The ACCC is of the view that Ovum's direct estimation of Telstra's beta sourced from Bloomberg data uses an appropriate method to directly estimating Telstra beta.²⁸⁹ 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

²⁸⁰ Ibid., p. 53.

²⁸¹ Ibid.

²⁸² Ibid.

²⁸³ Ibid., p. 54.

²⁸⁴ Ibid., p. 53.

²⁸⁵ Ibid., p. 54.

²⁸⁶ Ovum, *Economic review*, 6 August 2008, p. 37.

²⁸⁷ The Monkhouse formula takes into account imputation credits and most closely reflects the underlying cash flows that are subject to the analysis.

²⁸⁸ Ibid., pp. 37-38.

²⁸⁹ Ibid.

and daily basis, relative to the S&P/ASX 200 index. The ACCC 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 a 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 0.32.²⁹⁰

The Benchmarking Approach

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. International benchmarking completed by the ACCC suggests an asset beta of 0.47 is appropriate for the total assets of a large telecommunications company such as Telstra (i.e. companies with both fixed and mobile networks).²⁹¹ The ACCC's own estimation was completed using 5 years of monthly data which is common financial market practice. The ACCC notes that 0.47 is likely to be higher than the asset beta of the CAN alone which should be lower risk than Telstra's average business due to higher risk businesses Telstra operates such as mobile communications.

First Principles Estimation

The ACCC does not consider first principles estimation as a valid way to estimate systematic risk. The ACCC also considers that it is inappropriate to use income elasticities of demand at the retail level to infer a systemic risk for the wholesale demand of a regulated asset except in the 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 of firm's betas towards the "grand" mean of the market (i.e. towards 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. This assumes the firm's systematic risk reverts towards the mean of the market. The ACCC does not consider

²⁹⁰ P Monkhouse (1997) 'Adapting the APV Valuation methodology and the Beta Gearing Formula to the Dividend Imputation Tax System', Accounting and Finance, 37, Vol 1, pp 69-88.

²⁹¹ International benchmarking was conducted using Australia, Austria, Belgium, Britain, Canada, Denmark, France, Germany, Greece, Hong Kong, Iceland, Ireland, Israel, Italy, Japan, Korea, Netherlands, New Zealand, Portugal, Singapore, Spain, Slovenia, Sweden/Finland, Switzerland, Taiwan and the United States.

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 likely 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.

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.

The ACCC is also of the view that current estimates of RBOC are likely to have a higher risk on average than Telstra. This is because American telecommunications companies operate in the liberalised US telecommunications market which has a different market structure to the more heavily regulated Australian market.²⁹² Another consideration is that US telecommunications firms arguably operate under a more risky form of regulation than TSLRIC.²⁹³ 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.

Telstra also submits that it is not possible for the ACCC to estimate the systematic risk of telecommunications without substantial uncertainty. Telstra submit 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. The ACCC considers that such a practice would result in expected overcompensation which it does not regard as appropriate.

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. 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.

The ACCC recognises that their benchmarking portfolio estimate gives an asset beta estimate which is significantly larger than the one Ovum estimated directly from Telstra's share price. 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

²⁹² The deregulation or more correctly liberalisation of US telecommunications market resulted from the US Telecommunications Act 1996 and related state legislation.

²⁹³ CRA, 'The Future of Infrastructure, A Report Commissioned by UBS', p.46.

required return on equity for Telstra shareholders. This should ensure Telstra and its equity investors are adequately compensated for the risk they are bearing.

ACCC's 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 notes that direct estimation method yields an asset beta lower than 0.5. 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. 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 debt to equity. This is well below Telstra's proposed equity beta of 1.03.

The ACCC is of the view that its 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.

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 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.

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 B6.1.

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.²⁹⁴ 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.²⁹⁵ Supported by benchmark data, Ovum recommends the average level of 34 per cent debt to 66 per cent equity.²⁹⁶

The ACCC's view

The ACCC does not consider Telstra's proposed debt to equity ratio as appropriate for services on the fixed line network for the following reasons:

- 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 cent²⁹⁷
- 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)²⁹⁸
- 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 does not consider Telstra's proposal of 30 per cent debt to 70 per cent equity would lead to fair WACC estimates.

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 follows:

²⁹⁴ Ovum, *Economic review*, 6 August 2008, p. 38.

²⁹⁵ *Ibid.*, p. 39.

²⁹⁶ *Ibid.*

²⁹⁷ Ovum, *Regulation of cost of capital in the European fixed-line telecoms sector*, 22 February 2006.

²⁹⁸ *Ibid.*

$$WACC_{PreTax} = \frac{D}{V} E[Kd] + \frac{E}{V} E[Ke] \times \frac{1}{(1 - Te(1 - \gamma))}$$

Where :

D = the market value of the efficient firm's debt

E = the market value of the efficient firm's equity

$V = D + E$

$E[Kd]$ = the expected / required return on debt

$E[Ke]$ = the expected / required return on equity

Te = the effective tax rate

γ = the value of franking credits (gamma)

Where:

D = The market value of the efficient firm's debt

E = The market value of efficient firm's equity

$V = D + E$

$E[Kd]$ = The expected/required return on debt

$E[Ke]$ = The expected/required return on equity

Te = The efficient firm's effective tax rate

γ = The value of franking credits (gamma)

Therefore, the effective tax rate is an essential input into the pre tax WACC that is used as an input into 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 argue that the statutory tax rate will equal the effective tax rate in the absence of accelerated depreciation.

Other parties

Ovum submitted that that an effective tax rate of 20 per cent should be applied in line with previous ACCC decisions.

The ACCC's 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.²⁹⁹

The ACCC considers 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.

Further, the ACCC is of the view that an efficient new entrant 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 ATO. 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 normally be expected to overestimate Telstra's pre tax cost of capital.

Imputation Factor (gamma)

The imputation factor (gamma) is the market value to the firm's shareholders of the franking credits the firms generates. The market valuation of a franking credit can diverge from its face value (i.e. from 1) because in some circumstances the franking credit is not of value to an 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 obtain a refund from the Australian Tax Office.

In the past the ACCC and other Australian regulators have calculated the value of gamma 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 and the payout ratio can be estimated from annual reports.

Submissions

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.

Other parties

Ovum notes that the ACCC has previously concluded that an imputation factor of 0.5 is appropriate.³⁰⁰ Telstra's half-yearly results indicate a percentage of the company's

²⁹⁹ 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

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 regulatory practice, Ovum submits that the ACCC should continue to use an imputation factor of 0.5.³⁰¹

The ACCC's view

A recent Australian dividend drop-off study conducted by Beggs and Skeels³⁰² implied a utilisation rate of at least 0.572. Alternatively, a more recent study by Handley and Maheswaran using tax office statistics could put the value at approximately 0.81.³⁰³ This combined with a payout ratio between 0.71 from Hathaway and Officer (2004) and one gives a gamma well above zero. The use of a gamma of zero by Telstra in this context will not lead to a fair estimate of their pre tax WACC.³⁰⁴

From a theoretical perspective Australian companies have increasingly used off market share buybacks to stream franking credits to investors who place the most value on them. Such practice implies franking credits will have value to shareholders that should be reflected in share prices. Additionally, the ability to stream franking credits also means that these credits can be utilised irrespective of who the marginal investor is, as long as some investors are domestic residents. This supports a gamma above zero.

Under an Australian domestic CAPM framework, it might be assumed that all investors are Australian residents and therefore entitled to the accompanying taxation benefits. As such, imputation credits should be fully valued in the share price. This supports the ACCC's view that gamma is significantly above zero.

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 does not consider Telstra's proposed gamma value of 0 is appropriate or that Telstra have provided sufficient evidence to support their view. The ACCC considers the use of a gamma value of zero to calculate Telstra's pre tax WACC will lead to a pre tax WACC estimate that is excessive.

Debt Beta

³⁰⁰ Ovum, *Economic review*, 6 August 2008, p. 40.

³⁰¹ *Ibid.*, p. 29.

³⁰² David Beggs and Christopher Skeels. 'The Market Arbitrage of Cash Dividends and Franking Credits', *The Economic Record*, vol 82 no 258, September 2006.

³⁰³ 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.

³⁰⁴ 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 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).

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.

Other parties

Ovum support the use of a debt beta of 0.0.³⁰⁵

The ACCC's view

Consistent with previous regulatory decisions³⁰⁶, the ACCC agrees that Telstra's submitted debt beta of 0 is generally appropriate if used for both de leveraging and re leveraging 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.

Telstra requests an annual allowance of 0.4 per cent for equity raising costs. This is based on the estimates of the costs from a journal article that estimates initial public offering costs at 5.72 per cent and seasoned equity offering costs at 3.25 per cent.³⁰⁷ Annualised over 35 years, Telstra state 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

³⁰⁵ Ovum, *Economic review*, 6 August 2008, p. 38.

³⁰⁶ For example, ACCC, *Assessment of Telstra's ULLS monthly charge Undertaking – Final decision*, August 2006, page 122.

³⁰⁷ I. Lee, S. Lochhead, J. Ritter and Q. Zhao, "The Costs of Raising Capital", *Journal of Financial Research*, Spring 1996, pages 59-74.

considers that this reflects the increased complexity of contemporary equity raising relative to the costs when the empirical estimates were made.³⁰⁸

Other parties

Ovum notes the ACCC has previously indicated it is appropriate that EIC is recovered, but not through the WACC.³⁰⁹ Ovum also noted that in a recent arbitration, the ACCC did not include EIC in the WACC,³¹⁰ and conclude that equity issuance costs should be set to zero.³¹¹

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.

The ACCC's view

The ACCC accepts that equity issuance costs 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.

In addition, the ACCC notes that Telstra has not actually raised equity capital. The ACCC does not consider it is reasonable to compensate Telstra for costs that it did not incur. Therefore, the ACCC does not consider Telstra's argument for an allowance for equity raising costs in the WACC will lead to 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 that means you should set a WACC above the point estimate. 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 error 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

³⁰⁸ Telstra, *Weighted Average Cost of Capital*, 4 April 2008.

³⁰⁹ Ovum, *Economic review*, 6 August 2008, p. 41.

³¹⁰ Ibid.

³¹¹ Ibid., p. 42.

of values for many input parameters to the CAPM, there will be a range of estimates of the CAPM and the WACC. Telstra considers all estimates within this range are reasonable.

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.³¹²

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.

The ACCC's view

The ACCC considers that normally there is a best point estimate for each given WACC input parameter. The ACCC considers that rarely will two parties who genuinely attempt to come up with a broadly accepted value for a WACC input parameter for the Australian market differ significantly in their estimates. In addition, as there are a number of WACC input parameters, differences in estimates for individual parameters may, to a degree, cancel out such that the overall WACC estimates of the two parties' could be approximately the same. Overall, even if there is some room for disagreement on the overall WACC, the ACCC considers that this should be relatively small in magnitude.

In terms of Telstra's proposed 'range of reasonable WACC values', the ACCC notes 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. This compares to Ovum's estimate of an average awarded ULLS WACC of 11.83 per cent for a number of European countries. As noted above, the ACCC considers that any reasonable range (if it exists) would be extremely narrow in a competitive capital market.

³¹² Telstra, *Weighted Average Cost of Capital*, 4 April 2008, p. 3.

The ACCC also considers that the CAPM systematically underestimates the required return on equity. The ACCC considers that this argument is inconsistent with the CAPM.

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 (e.g. the Fama and French three factor model). However, Telstra has proposed the CAPM in support of their 2008 Undertaking. The ACCC notes 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 is that an 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. However, Telstra has not provided reasoning for its adjustment in the CAPM in support of their 2008 Undertaking.

Asymmetry in social consequences

Asymmetry in 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.

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 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.

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.

Other parties

Optus stated that the ACCC's 2008 ULLS pricing principles³¹³ 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.

The ACCC's view

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.

The ACCC also does not agree with Telstra's view that setting the WACC too high will ensure ongoing investment. Firms will operate in a profit maximising way regardless of the allowed return which may mean that further investment does not occur, particularly efficient investment. Further, the ACCC believe setting too high a return on an existing network may deter efficient investment under the TSLRIC based pricing approach.

Overall, the ACCC is not convinced there will be asymmetric social consequences from setting too low a WACC versus setting too high a WACC. Professor Bowman and Telstra have not provided sufficient evidence to satisfy the ACCC that any adjustment to the WACC is appropriate under the Act for this reason.

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. Depreciation is also used in a regulatory

³¹³ ACCC, *Unconditioned Local Loop Service Pricing Principles and Indicative Prices*, June 2008.

context to spread the cost of an asset to consumers over a period of time, often over the economic life of the asset.

The ACCC notes that the TEA model uses straight line (accounting) depreciation, where the asset life is based on the replacement by non-copper technologies rather than being based on the expected decline in the economic value of the asset in a copper network assuming copper was optimal.

The default asset values provided by Telstra are summarised in the table below.

Life	Capital asset
5 or less	Information Technology
	Software
	IEN Software
	Switching Software
10 - 20	Local Switching
	Misc. Transmission
	Other Indirect (Fleet, etc.)
	Building Fitouts
	Multiplexing Systems
	Copper Cables-Main
	Copper Cables-Distribution
	Radio Equipment-CAN
	Network Management
	Power Systems
	SDH Transmission Equipment
	Radio Transmission
	Radio Spectrum
	21 - 30
Lead-Ins	
Support Structures	
Buildings	
Optical Fibre Cables	
31-40	Ducts and Pipes-Main
	Network Buildings

Source: TEA model version 1.1

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 initial annual payment that will increase at a fixed percentage per period. It will recover the present value of an asset's purchase price over the life of the annuity. Under a regulatory framework where optimal asset values will be recalculated each reset, 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 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..."³¹⁴
- straight line depreciation is considered both reasonable and consistent with the legislative criteria according to Ergas in his report for Telstra³¹⁵

³¹⁴ NERA, *Estimating the Long Run Incremental Cost of PSTN Access*, Final Report for ACCC, 1999.

- 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 load 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.³¹⁶

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.³¹⁷

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.³¹⁸

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.

Ergas suggests that economic depreciation profiles, if they could be derived at all, reflects the opportunity cost of holding the relevant assets over time, assuming second-hand markets existed for the assets at issue.³¹⁹ 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.

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 Act.³²⁰

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

³¹⁵ Ergas H, *Depreciation – Prepared for Mallessons Stephen and Jaques*, Concept Economics, August 2008.

³¹⁶ Telstra, *Response to Discussion Paper*, 12 August 2008, p. 38.

³¹⁷ Telstra, *Submission in response to Discussion Paper*, June 2008, p. 37

³¹⁸ *Ibid.*

³¹⁹ Ergas H, *Depreciation – Prepared for Mallessons Stephen and Jaques*, Concept Economics, August 2008.

³²⁰ Subsection 152AH(1) and subsection 152AB(2).

periodic asset revaluation, a back-loaded depreciation profile increases the risk that Telstra will not be able to recover the cost of its assets.³²¹

Ergas submits that the depreciation profile inherent in the ACCC's tilted annuity approach is not an 'economic' one.³²² 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.

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.³²³

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.³²⁴ 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
- 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.³²⁵

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.³²⁶

MJA submits that they do not support the simple annuity formula as it does not reflect the 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.

³²¹ Ergas H, *Depreciation – Prepared for Mallessons Stephen and Jaques*, Concept Economics, August 2008.

³²² *Ibid.*, p. 55.

³²³ *Ibid.*

³²⁴ Optus, *Optus Submission*, August 2008, p. 57.

³²⁵ *Ibid.*

³²⁶ *Ibid.*, p. 42.

Optus and MJA submit that the rationale for the tilt is that it enables an incumbent operator to account for:

- when the 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 periods³²⁷ 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.³²⁸

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 model's transparency.³²⁹

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 note the rapid sustained increases in the price of copper over the past 10 years may be indicative of a slight future upward trend.³³⁰

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.

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 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.³³¹ In this respect 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.³³²

Ovum submits that 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.³³³

³²⁷ MJA, *CCC Review*, 12 August 2008, pp. 10-12.

³²⁸ Optus, *Optus Submission*, August 2008, p. 58

³²⁹ MJA, *CCC Review*, 12 August 2008, p. 11.

³³⁰ *Ibid.*

³³¹ *Ibid.*

³³² *Ibid.*

³³³ Ovum, *Economic Review*, 6 August 2008, p. 19

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.³³⁴

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.³³⁵

Network component asset lives

Submissions

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.³³⁶

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.³³⁷

Further, 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 Principle Determination the ACCC considered an asset life of 12 years for the Main Cable.³³⁸ However, Optus submits that an asset life of 15 years for main copper cable is more appropriate and is consistent with international standards.³³⁹ Optus cites reports from PwC³⁴⁰ and Ernst & Young³⁴¹ which indicates economic lives of copper cable beyond

³³⁴ Ibid.

³³⁵ Ibid.

³³⁶ Optus, *Optus Submission*, August 2008, p.59.

³³⁷ Ibid.

³³⁸ Ibid., p. 60

³³⁹ Ibid., p. 60.

³⁴⁰ PriceWaterhouseCoopers, *Telco Network Service Lives*, March 1999, p. 5, as cited in Optus, *Optus Submission*, August 2008, p. 61.

³⁴¹ Ernst & Young, *Global Telecom Depreciation Survey*, October 2002, p. 9, as cited in Optus, *Optus Submission*, 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.³⁴² 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.³⁴³

MJA observe that Telstra have included a shortened asset life for the main network copper cable.³⁴⁴ 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 not be considered on a forward looking basis.

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.³⁴⁵ 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 Telstra's previous model PIE II in comparison is actually better as it encompassed a series of technology options.³⁴⁶

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.³⁴⁷

Ovum submit 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.³⁴⁸ Ovum also submits that asset lives should be re-valued to their economic lives.

Annualisation and unitisation

Submissions

Telstra

³⁴² Optus, *Optus Submission*, August 2008, p. 61.

³⁴³ Telstra, *Telstra Financial Reports*, 30 June 2006, p. 16. As cited in Optus, *Optus Submission*, August 2008, p. 64.

³⁴⁴ MJA, *CCC Review*, 12 August 2008, p. 5.

³⁴⁵ Ibid.

³⁴⁶ Ibid.

³⁴⁷ Ovum, *Economic Review*, August 2008, p. 22.

³⁴⁸ Ibid., p. 21.

Telstra submits that it has adopted a building block approach to calculating annualised capital costs.³⁴⁹ 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.³⁵⁰ Telstra submits that levelling 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.

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.³⁵¹ 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.³⁵²

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.³⁵³

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.³⁵⁴

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.³⁵⁵

The ACCC's view

³⁴⁹ Telstra, *Response to Discussion Paper*, 12 August 2008, p. 37.

³⁵⁰ Ibid.

³⁵¹ Ibid.

³⁵² Ibid.

³⁵³ Optus, *Optus Submission*, August 2008, pp. 57-58.

³⁵⁴ Ibid., p. 58.

³⁵⁵ MJA, CCC Review, 12 August 2008, p. 11

The ACCC considers that the application of a tilt to regulated cash flows under the TSLRIC regime is appropriate for fair compensation because assets are re-valued periodically by the regulator to reflect a current hypothetically efficient network in each regulatory period. The ACCC considers that if a zero tilt is applied then Telstra may receive an abnormal return when its assets are re-valued upwards in future regulatory periods in response to price trends. In particular, Telstra will receive ex-ante over compensation due to the expectation of this revaluation. This view is consistent with ACCC's approach in developing ULLS indicative prices.³⁵⁶

Consequently, the ACCC does not consider the use of a zero tilt as reasonable.

The ACCC's analysis indicates that an economically significant positive tilt should be applied to the value of the ULLS, in aggregate, since the value of the ULLS lines and trenches and ducts are expected to be valued significantly higher in the future in nominal terms.

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. However, Telstra's proposed undertaking is only for a two year period and the TPA³⁵⁷ does not allow the ACCC to accept an undertaking which has a term exceeding three years.

The assets which make up the CAN clearly have a lifespan which will exceed both the proposed undertaking period and the legislative timeframe, and the efficient and forward looking valuation of the network asset will change through time (in an upward direction 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 asset, the ACCC cannot be satisfied that a flat annuity approach would be reasonable – as the regular revisiting of the network asset valuation would lead to expected cash flows over the life of the asset with an expected present value greater than the value of the asset and therefore expected ex ante over-recovery of the network value.

In considering asset lives, Telstra states in its submission that the TEA model does not use fibre optic cable as the model is based entirely on the copper unconditioned loop. The ACCC's current view is that while the ULLS remains a declared service it is appropriate to determine ULLS pricing based on a copper network. However, the ACCC believes 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 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. The ACCC agrees with the comments outlined above that Telstra's asset lives are not reflective of

³⁵⁶ ACCC, *Unconditioned Local Loop Service Pricing Principles and Indicative prices*, June 2008.

³⁵⁷ Subsection 52BV(2e).

the assets true life and that they appear based on the proposition that the copper network will be replaced with a non-copper network in 10 years.

The ACCC considers the asset lives proposed by Telstra, particularly for copper cables and ducts and pipes, appear to include an obsolescence factor consistent with a possible replacement by next generation technology, and as such are not reflective of the physical life of copper network assets. However, the ACCC also notes that extending the assets lives in the TEA model has a limited impact.

Overall, the ACCC considers Telstra's depreciation inputs as not reasonable because of both the lack of tilt in the annual cash flows; and to a lesser degree because the asset lives used are inconsistent with the form of TSLRIC model being applied.

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.³⁵⁸

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.

C.1 Telstra submissions in support of the undertaking

Bowman, RG, *Report on Telstra's Weighted Average Cost of Capital for the CAN-related assets used in the Provision of the ULLS*, 30 July 2008.

Bowman, RG, *Report on the Appropriate Weighted Average Cost of Capital for ULLS and SSS, Prepared for Telstra*, December 2005.

Bowman, RG, *Report on the Appropriate Weighted Average Cost of Capital for the ULLS Network, Prepared for Telstra*, December 2005

Bowman, RG, *Report on the Appropriate Weighted Average Cost of Capital for the Services provided over the CAN*, May 2007.

(*) Bowman, RG, *Report on the Appropriate Weighted Average Cost of Capital for the LSS*, May 2007.

Bowman, RG, *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.

Ergas, H, *Depreciation – prepared for Mallesons Stephen Jacques*, Concept Economics, August 2008

Gray, S and Officer, RR, “*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.

Harris, RG, *Use of the TEA model in ULLS Costing and Pricing*, 21 December 2007

³⁵⁸ 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.

Telstra, Letter re: *Unconditioned Local Loop Service (“ULLS”): Ordinary Access Undertaking*, 3 March 2008.

Telstra, Letter re: *Lightening Protection Costs in the TEA model*, 14 August 2008.

Telstra, Letter re: *Telstra’s March 2008 Undertaking for Band 2: Request for further information*, 7 January 2008.

Telstra, Letter re: *Telstra’s March 2008 Undertaking for Band 2: Request for further information*, 4 April 2008.

Telstra, Letter re: *Telstra’s March 2008 Undertaking for Band 2: Request for further information*, 7 April 2008.

Telstra, Letter re: *Telstra’s ULLS Undertaking*, 15 July 2008.

Telstra, *Factor Calculation*, 11 April 2008 (Microsoft Excel spreadsheet)

Telstra, Letter re: *Telstra’s ULLS Undertaking and Telstra Efficient Access (TEA) model*, 6 August 2008.

Telstra, *Telstra’s Efficient Access Model, Model Documentation*, 6 August 2008

Telstra, *Modifications included in TEA Version 1.1*, 6 August 2008.

Telstra, *Telstra’s Efficient Access Model, Model Documentation: Addendum*, 6 August 2008.

Telstra, *Telstra’s Efficient Access Model (TEA) Overview*, 21 December 2007.

Telstra, *Access Network Modelling Costing information*, March 2008.

Telstra, *Operations and Maintenance and Indirect Cost Factor Study*, 7 April 2008.

Telstra, *Access Network Dimensioning Rules, Incremental costing model input*, Undated.

Telstra, *Telstra’s Efficient Access Model, User Guide*, 3 March 2008.

Telstra, *Telstra’s Efficient Access Model, Model Documentation*, 3 March 2008.

Telstra, *Telstra’s ULLS Undertaking is Reasonable*, 4 April 2008

Telstra, *Weighted Average Cost of Capital*, 4 April 2008.

Telstra, *Telstra’s Submission in Support of the ULLS Monthly Charges Undertakings Dated 23 December 2005*, 23 December 2005.

C.2 Submissions in response to the ACCC’s discussion paper

Adam Internet, Chime and Agile

Adam Internet Pty Ltd, iiNet Limited/Chime Communications Pty Ltd and Agile Pty Ltd/Internode Pty Ltd, *Telstra's Access Undertaking for the Unconditioned Local Loop Service – Response to ACCC Discussion Paper Dated June 2008*.

Competitive Carriers Coalition

Marsden Jacob Associates, *Review of the TEA model – A report prepared for Competitive Carriers Coalition*, 12 August 2008.

Optus

(*) Optus, *Optus Public Submission to Australian Competition and Consumer Commission on Telstra's Access Undertaking for the Unconditioned Local Loop Service: Response to Discussion Paper*, August 2008.

CEG, June 2008, *The Cost of Capital for the NBN*.

Network Strategies, *Report for Optus – Review of Telstra TEA model version 1.1 – ULLS undertaking*, 5 September 2008.

(*) Optus, *ULLS Service Description*, August 2008

Telstra

(*) Telstra, *Telstra's Ordinary Access Undertaking for the Unconditioned Local Loop Service: Response to the ACCC's Discussion Paper dated June 2008*, 12 August 2008.

(*) [c-i-c ██████████], Statement of [c-i-c ██████████], 11 August 2008 (including attachments and annexures)

(*) [c-i-c ██████████], Statement of [c-i-c ██████████], 11 August 2008 (including attachments and annexures)

(*) [c-i-c ██████████], Statement of [c-i-c ██████████], 8 August 2008 (including attachments and annexures)

(*) [c-i-c ██████████], Statement of [c-i-c ██████████], 11 August 2008 (including attachments and annexures)

(*) [c-i-c ██████████], Statement of [c-i-c ██████████], 11 August 2008 (including attachments and annexures)

(*) [c-i-c ██████████], Statement of [c-i-c ██████████], 12 August 2008 (including attachments and annexures)

(*) [c-i-c ██████████], Statement of [c-i-c ██████████], 11 August 2008 (including attachments and annexures)

(*) [c-i-c ██████████], Statement of [c-i-c ██████████], 12 August 2008 (including attachments and annexures)

(*) [c-i-c ██████████], Statement of [c-i-c ██████████], 12 August 2008 (including attachment)

(*) [c-i-c ██████████], Statement of [c-i-c ██████████], 12 August 2008 (including attachment)

C.3 Past ACCC reports and decisions

ACCC, *Unconditioned Local Loop Service - Pricing Principles and Indicative Prices*, June 2008

ACCC, *Unconditioned Local Loop Service (ULLS) Final Pricing Principles*, November 2007

ACCC, *ULLS Access dispute between Telstra Corporation Limited and Primus Telecommunications Pty Ltd (monthly charges), Statement of Reasons for Final Determination*, December 2007.

ACCC, *A report on the assessment of the Analogue pay TV Access Undertaking proffered by Telstra Multimedia Limited on 23 December 2003*, March 2004.

ACCC, *Sydney Airports Corporation Ltd Aeronautical Pricing Proposal: Draft Decision*, February 2001.

ACCC, *Melbourne Airport Multi-user Domestic Terminal, New Investment Decision*, August 2000.

ACCC, *NSW and ACT transmission network revenue cap Energy Australia 2004-05 to 2008-09*, 27 April 2005.

ACCC, *NSW and ACT transmission network revenue cap TransGrid 2004-05 to 2008-09*, 27 April 2005.

ACCC, *Draft Statement of Principles for the Regulation of Transmission Revenues*, 27 May 1999.

ACCC, *Review of the Draft Statement of Principles for the Regulation of Transmission Revenues, Discussion Paper*, 28 August 2003.

ACCC, *Statement of Principles for the Regulation of Transmission Revenues, Draft Decision*, 18 August 2004.

AER, *Electricity network distribution service providers: Post-tax revenue model handbook*, June 2008.

ACCC, *Draft Greenfield guideline for gas transmission pipelines*, June 2002.

ACCC, *Media release re: ACCC to appeal Australian Competition Tribunal's decision on the Moomba to Sydney pipeline*, 4 August 2004.

ACCC, Media release re: *High Court overturns ACCC decision on access to the Moomba to Sydney pipeline*, 28 September 2007.

ACCC, *Draft decision, Interstate Rail Network, Australia Rail Track Corporation*, April 2008.

ACCC, *Final Decision – Australian Rail Track Corporation Access Undertaking – Interstate Rail Network*, July 2008.

ACCC, *Decision, Access Undertaking, Australia Rail Track Corporation*, May 2002.

ACCC, *Access dispute between Services Sydney Pty Ltd and Sydney Water Corporation, Arbitration Report*, 19 July 2007.

ACCC, Media release re: *Revised timelines for the provision of advice to the Minister for Climate Change and Water under the Water Act 2007*, 12 August 2008.

ACCC, *Discussion Paper: 2003 review of the Draft Statement of Principles for the Regulation of Transmission Revenues*

ACCC, *Telstra's Access Undertaking for the Unconditioned Local Loop Service - Discussion Paper*, June 2008

ACCC, *Assessment of Telstra's ULLS monthly charge undertaking - Final Decision*, August 2006

ACCC, *Declaration of local telecommunications services*, July 1999.

ACCC, *Declaration inquiry for the ULLS, PSTN OTA and CLLS—final determination*, July 2006.

ACCC, *Access Pricing Principles - Telecommunications, a guide*, July 1997.

ACCC, *Access Arrangement by Transmission Pipelines Australia, Final Decision*, October 1998.

(*) ACCC, *Assessment of Telstra's Undertaking for Domestic PSTN Originating and Terminating Access – Final Decision*, June 1999.

ACCC, *Telecommunications services—declaration provisions: a guide to the declaration provisions of Part XIC of the Trade Practices Act*, July 1999.

ACCC, *NSW and ACT Transmission Network Revenue Caps 1999/00-2003/04 – Decision*, 25 January 2000.

ACCC, *A Report on the Assessment of Telstra's Undertaking for the Domestic PSTN Originating and Terminating Access Services*, July 2000.

ACCC, *Final Decision on GasNet Australia Access Arrangement Revisions for the Principal Transmission System*, 13 November 2002.

ACCC, *Telecommunications Market Indicator Report 2002-03*, June 2004.

(*) ACCC, *Final Determinations for Model Price Terms and Conditions for the PSTN, ULLS and LCS Services*, October 2003.

ACCC, *Final Determination—Model Non-Price Terms and Conditions*, October 2003.

ACCC, *Section 152ATA Digital Pay TV Anticipatory Individual Exemption Application lodged by Foxtel Management Pty Limited*, December 2003.

ACCC, *Decision: Statement of Principles for the Regulation of Electricity Transmission Revenues- Background Paper*, 8 December 2004.

(*) ACCC, *Assessment of Telstra's undertakings for PSTN, ULLS and LCS – Draft Decision*, October 2004.

(*) ACCC, *Assessment of Telstra's undertakings for PSTN, ULLS and LCS – Final Decision*, December 2004.

ACCC, *Telstra's Undertakings for the Unconditioned Local Loop Service—Discussion Paper*, January 2005.

ACCC, *ACCC telecommunications reports 2003-04*, March 2005.

ACCC, *ACCC telecommunications reports 2004-05*, June 2006.

(*) ACCC, *Telecommunications Infrastructure in Australia 2004*, June 2005.

(*) ACCC, *Assessment of Telstra's ULLS and LSS Monthly Charge Undertakings—Draft Decision*, August 2005.

(*) ACCC, *Assessment of Telstra's ULLS and LSS Monthly Charge Undertakings—Final Decision*, December 2005.

ACCC, *A strategic review of the regulation of fixed network services—an ACCC discussion paper*, December 2005.

ACCC, *Current Cost Accounting Report Relating to Accounting Separation of Telstra for the Half Year to June 2005*, December 2005.

ACCC, *Declaration inquiry for the ULLS, PSTN OTA and CLLS—final determination*, July 2006.

ACCC, *Local Services Review—final decision*, July 2006.

C.4 Past Telstra submissions and reports

Ergas, H., *Expert Report on Access Deficit*, CRA International, May 2005.

(*) Ergas, H., *Expert Report on Recovery of ULLS Specific Costs*, CRA International, May 2005.

(*) Mitchell, B.M. and Kennet, M., *Confidential Commentary on PIE II Model Assumptions: Final Report Prepared for Telstra*, CRA International, May 2005.

(*) Telstra, *Telstra's detailed submission in support of its PSTN OTA and LCS undertaking dated 9 January 2003*, 31 July 2003.

Telstra, *Submission in support of the Undertaking for Domestic PSTN Originating and Terminating Access – Part A: Economic Submission*, 6 May 1998.

Telstra, *Submission in response to ACCC discussion paper entitles Local services review 2005*, 28 June 2005.

(*) Telstra, *Submission in Response to the Australian Competition and Consumer Commission's Discussion Paper in Respect of ULLS Received March 2005*, 27 May 2005.

Telstra, *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*, July 2006.

Telstra, *Submission to the Australian Competition and Consumer Commission—Response to the ACCC proposal—“A strategic review of the regulation of fixed network services”*, February 2006.

(*) Telstra, *Telstra's Submission in Support of the ULLS Connection Charges Undertaking dated 13 December 2004*, February 2005.

Telstra, *Telstra's submission in response to the Local Services review*, April 2006.

Telstra, *Annual Report as at 30 June 2004*, August 2005.

C.5 Additional information examined by the ACCC

ABARE, *Australian Commodities*, June 2008.

ACMA, *Fixed-mobile convergence and fixed-mobile substitution in Australia*, July 2008.

Costello, P (Treasurer), *Continuing Tax Reform*, 9 May 2006.

Marsden Jacob Associates and Europe Economics, *Comments on Discussion Paper—Telstra's Undertaking in Relation to the Unconditioned Local Loop Service*, 3 May 2006.

n/e/r/a, *Estimating the Long run incremental cost of PSTN access; a draft report for the ACCC*, October 1999.

New Zealand Commerce Commission, *Draft Determination for TSO Instrument for Local Residential Telephone Service between June 2005 and 30 June 2006*, 9 July 2007.

Optus Mobile Pty Limited and Optus Networks Pty Limited (No 3) [2006] ACompT 8 (22 November 2006).

Opus International Consultants, *Sydney Airport 2000 Valuation Review for the ACCC*, 9 February 2001.

Ovum, *Review of the network design and engineering rules of the Telstra Efficient Access Cost Model: A Report to the ACCC (public version)*, 6 August 2008.

(*) Ovum, *Review of the economic principles, capital cost and expense calculations of the Telstra Efficient Access cost model*, 6 August 2008.

Neville Hathaway, "Australian Market Risk Premium", *Capital Research*, January 2005, cited in Ovum, *Review of the economic principles, capital cost and expense calculations of the Telstra Efficient Access cost model*, 6 August 2008.

Sydney Airports Corporation Limited, *Sydney Airport Draft Aeronautical Pricing Proposal*, December 1999.

Sydney Airports Corporation Limited, *Sydney Airport Revised Draft Aeronautical Pricing Proposal*, September 2000.

Sydney Airports Corporation Ltd (2000) 156 FLR 10

Telstra Corporation Limited (No 3) [2007] ACompT 3 (17 May 2007).

Telstra Corporation Limited (No 1) [2006] ACompT 4 (2 June 2006).

Vodafone Network Pty Ltd and Vodafone Australia Limited (No 4) [2006] ACompT 1 (11 January 2007).

Wik-Consult, *Mobile Termination Cost Model for Australia*, January 2007.